

**CCGR**

Centre for Corporate Governance Research

Working Paper  
No. 5/2011

December 2011  
Revised July 2012

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# Stockholder Conflicts and Dividend Payout

by\*

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## Abstract

This paper examines how dividend policy influences conflicts of interest between majority and minority stockholders in a large sample of private firms with controlling blockholders. We find that a higher potential for stockholder conflicts is associated with higher payout. This tendency is stronger when the minority stockholder structure is diffuse and when the minority is not on the firm's board. Minority-friendly payout is also associated with higher subsequent minority investment in the firm. These findings are consistent with the notion that dividend policy is used to mitigate agency costs, particularly when this benefits the majority in the longer run.

July 10, 2012

Keywords: Corporate governance, Ownership, Minority stockholders, Dividends.

JEL classification codes: G32, G35.

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The main concern of stockholders who provide the firm with funding is a fair return on their investment. Conflicts of interest within the firm can threaten to reduce that return. In particular, small stockholders may worry that large stockholders will use their control rights to increase private benefits and finance it with reduced dividends. The incentive to do this comes from the fact that the controlling stockholder can appropriate private benefits in their entirety, while dividends must be shared proportionally with the minority. The literature calls this the majority-minority problem (Demsetz and Lehn (1985), Shleifer and Vishny (1997)), the horizontal agency problem (Roe (1994)), and the second agency problem (Villalonga and Amit (2006)). Our study is the first to analyze the relationship between stockholder conflicts and dividend policy in a large sample of firms with concentrated ownership. These are the firms in which stockholder conflicts are likely to be particularly serious.

Our key finding is that a higher potential for stockholder conflicts induces higher dividend payments. This is particularly true when the firm needs new minority investments at a later stage and when the minority is weak by being absent from the board and having diffuse equity stakes. These results hold regardless of how we measure dividend policy, minority investment, and conflict potential. Moreover, we observe these relationships in a legal regime with relatively strong protection of stockholder rights. This suggests that market mechanisms, such as a dividend policy that builds reputation for fair treatment of a minority that the majority will need later on, are important tools for reducing agency costs even under strong institutional discipline.

The inability of dispersed stockholders to prevent managers from expropriating their wealth is the root of the first (vertical) agency problem (Roe (1994); Villalonga and Amit (2006)). The empirical literature has mostly focused on this conflict, probably due to the lack of data for firms where the second agency problem is the more serious (Demsetz and Lehn (1985); Demsetz and Villalonga (2001)). The first agency problem dominates in public firms because stockholders are often dispersed. In contrast, high ownership concentration and even majority ownership is the rule in private firms, which are also subject to less demanding governance regulations and reporting requirements than public firms of similar size (Nagar et al. (2011)). To illustrate, the

average equity holding of the largest stockholder is 30% in public firms and 78% in private firms of similar size in Norway, where our sample firms come from. There is a majority stockholder in 15% of the large public firms and in 69% of the large private firms (Bøhren (2011)). Thus, the potential conflict between the stockholders – rather than between stockholders and managers – is the more pressing agency problem for private firms, which constitute a large part of aggregate value creation in any economy.<sup>1</sup>

The lack of attention in the literature to the conflict between majority and minority stockholders may provide at least a partial explanation of the well-known “dividend puzzle”: In spite of the irrelevance theorem of Miller and Modigliani (1961), investors pay close attention to dividend policy, and firms distribute dividends even when they are at a tax disadvantage compared to capital gains (Lintner (1956), Black (1976), Allen and Michaely (2003), Brav et al. (2005), DeAngelo et al. (2008)). Our starting point is the idea that disbursing the firm’s free cash flow as dividends can reduce agency costs, since a smaller free cash flow produces a smaller funding source for private benefits (Jensen (1986)). Studying the link between payout and potential agency costs can therefore shed new light on the dividend puzzle. In particular, such an analysis may allow us to determine whether owners of controlling blocks typically behave opportunistically, or if they instead try to establish a reputation for fair treatment of their co-investors. The literature calls these two very different payout policies the outcome model and the substitute model, respectively (La Porta et al. (2000), Cheffins (2006)).

Our key to a valid test of these two alternative dividend theories is to focus on firms where one stockholder controls more than half the outstanding equity. Such majority owners have both strong incentives and sufficient power to monitor managers (Shleifer and Vishny (1986)). Thus, the impact of the first agency problem (stockholders vs. managers) on dividend payout is negligible in our sample. In contrast, controlling stockholders can influence the seriousness of

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<sup>1</sup> The OECD has recently recognized agency costs as a determinant of economic development. A special section of their Policy Framework for Investment document is devoted to this topic. The OECD notices that the “two types of conflict of interest in corporate governance, one between majority and minority shareholders and the other between management and shareholders.” (OECD (2006, 2011)).

the second agency problem (large vs. small stockholders) by their decision to retain or pay out the firm's free cash flow. The relationship between the size of the majority block and the fraction of earnings paid out as dividends will reflect how stockholder conflicts play out in practice.

The highest potential for stockholder conflicts is when the largest owner holds just above 50% of the equity. At that level, the majority stockholder controls the firm, enjoys the private benefits, but receives only about half the cash flow paid out as dividends. Thus, the incentive to use the firm's resources to finance private benefits is high because the cost is low in terms of lost dividends. As the ownership stake increases, however, the majority's share of lost dividends becomes larger, and the incentive to divert the firm's cash for private benefits falls correspondingly. Hence, the closer the majority stake is to 100%, the more the majority internalizes the cost of the private benefits.

The two alternative dividend theories have opposite predictions for how dividend payout varies with ownership concentration in majority-held firms. In the outcome model (opportunistic behavior), majority stockholders will divert more cash for private benefits and pay particularly low dividends when a large part of the lost payout would have been received by minority owners (i.e., around a 50% majority stake). Thus, dividends increase with increasing ownership concentration in the outcome model. In contrast, the majority stockholder in the substitute model (minority-friendly behavior) wants to create a reputation for not misusing his power, particularly when the potential stockholder conflict is large. Therefore, the expected relationship between dividend payout and the majority's equity stake is negative or flat in the substitute model. Which of these two scenarios is the dominant one in practice is an empirical question.

Our evidence supports the substitute model and refutes the outcome model. We find that firms with a higher potential for stockholder conflicts pay out a larger fraction of their earnings as dividends, particularly when they need new minority investments later on. While the average firm in our sample pays out 20% of its earnings as dividends, the payout ratio decreases by 7 percentage points as the equity fraction of the firm's largest owner increases from 50% to 99%.

This result also holds in family-controlled firms regardless of whether we measure conflict potential by ultimate ownership concentration at the individual, nuclear family or extended family level.<sup>2</sup> Moreover, payout is higher when the minority is weak by not being present on the board or not having concentrated stakes. All in all, the observed dividend policy is consistent with the substitute model also when we account for more detailed characteristics of the potential stockholder conflict.

These findings are independent of whether we measure payout by dividends per unit of earnings, cash flows, sales or assets. The results are also insensitive to whether we use the propensity to pay dividends or the fraction of earnings paid, and to whether we consider all firms or just those that pay dividends in a given year. Moreover, the findings persist when we use panel data techniques to account for unobservable payout determinants at the firm, industry, or aggregate economy level. Throughout our analysis, we control for a wide set of dividend determinants other than agency costs. Specifically, we account for the firm's profitability, asset liquidity, financial constraints, growth opportunities, risk, size, and age.

We examine possible reasons for the observed substitute pattern and find that firms with potentially more serious stockholder conflicts do not just pay more of their earnings as dividends. They also receive more subsequent equity investment from their minority stockholders. While one quarter of the firms with high conflict potential and high dividend payout receive minority investment, this happens in only one tenth of the firms with low conflict potential. These results suggest that dividend policy is an important tool for building favorable reputation, attracting new equity investment, and thus for reducing the firm's agency costs.

Our sample is particularly well suited for uncovering the relationship between stockholder conflicts and dividend policy. First, we choose a large sample from the population of all Norwegian private firms with a controlling stockholder. This clean sample with widely varying

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<sup>2</sup> The ultimate owners we identify are individuals, families, foreign entities, and institutional investors. Families are defined from family relationships up to the fourth degree of kinship. Nuclear families include only parents and underage children.

majority stakes increases the power of our test. Second, the detailed ownership data allows us to assign stockholders to families using alternative family definitions, to account for the composition of the minority stakes, and to capture how the board structure reflects the ownership structure. Compared to just measuring conflict potential by a standard ownership concentration measure such as the equity fraction of the largest individual owner, our richer set of ownership characteristics allows for deeper and more detailed insight into how stockholder conflicts and dividend policy interact.

Finally, our sample comes from a regulatory regime with neutral dividend taxation. This setting implies that we can ignore the impact of taxes on dividends, as there are no incentives for stockholders to receive dividends rather than capital gains, salary or interest.<sup>3</sup> Similarly, the role of dividends as a signal about future expected cash flow is moderate, since the sample firms are private, majority-controlled, and have three stockholders on average. Thus, dividend policy may rather be a tool for handling the free cash flow problem than a forecast of future earnings from informed insiders to uninformed outsiders.<sup>4</sup>

Our findings are in line with previous results suggesting that the private benefits of control are low in countries with Scandinavian legal origin. Nenova (2003) reports a control premium of around 5% for Norway. This premium resembles estimates from other Scandinavian countries and in common law countries, but is below the average premium for countries with German (11%) and French (25%) civil law origin. The impression of relatively low private benefits is confirmed by Dyck and Zingales (2004), who relate low control premiums to media pressure and effective tax enforcement. Norway has the highest newspaper readership in their sample of 69 countries, and has also high tax compliance. Similarly, Holmén and Knopf (2004) find no

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<sup>3</sup> The tax reform preceding our sample period was explicitly designed to ensure the equivalence of all cash flows to investors regardless of their formal status (Sørensen (2005, 2007)). This property alleviates an important concern in our analysis, since the relatively small size and high ownership concentration of many private firms make it easier to shift between cash flows with different tax status.

<sup>4</sup> It may be argued that dividend signaling is not just for the current stockholders, but also for prospective ones. Nevertheless, the concentrated ownership structure and the lack of an active market for private firms' shares suggest that signaling is not a key role for dividends in our sample firms.

evidence that controlling stockholders increase their wealth at the minority's expense in Swedish mergers. We go one step further and show that the low control premium is also justified by the observed payout policy, which tends to mitigate rather than increase the potential agency conflict between large and small stockholders inherent in the firm's ownership structure.

Strong legal protection, well-informed investors, media pressure, and the threat of intervening tax authorities may all restrict the opportunity set for opportunistic behavior and hence rationalize our findings. Another possibility is, however, that majority stockholders would have chosen the observed dividend policy also in the absence of such regulation. The reason is that they anticipate the future need for additional equity investment by the minority. To reduce the cost of such future equity issues, the majority owner tries to establish a reputation for being fair. The carrot of easy access to capital thus balances the stick of a generous payout policy. Hence, it is in the majority's self-interest to abstain from opportunistic behavior. We find evidence of such reputation concerns in our data. The positive relationship between payout ratios and potential agency costs is stronger in firms that require additional minority investment in subsequent years. The fact that we find reputation effects in a large sample of firms in a country with good investor protection points to the importance of governance mechanisms that are market-based and voluntary rather than institutional and mandatory.

Our findings are consistent with those of Ostergaard and Smith (2011), who analyze a setting where governance regulation is left to private contract. The authors study the time period 1900-1910, which is just before the adoption of the first Norwegian corporate law. Analyzing corporate charters in great detail, Ostergaard and Smith find the strongest protection of stockholder rights in the charter of firms with the largest potential agency conflicts. They also find that high dividend payout is used as a substitute for alternative ways of protecting the minority, such as a two-tiered board and a decreasing voting right per share as the block size increases. Similarly, Bøhren et al. (2012) find that Norwegian banks pay more of their earnings as dividends when the owners have weak control rights relative to other stakeholders. Once more, this evidence supports the substitute model.

Most extant studies of dividends and ownership have looked at owner types rather than owner conflicts. Domestic and foreign owners of public firms seem to have different dividend preferences (Dahlquist and Robertson (2001)). Institutional investors prefer dividend-paying companies, but not higher payout ratios (Grinstein and Michaely (2005)). Also, institutional investors are sensitive to their own stockholders' tax brackets when choosing among firms with different dividend policies (Desai and Jin (2011)). Eckbo and Verma (1994) consider managers and institutional investors as examples of stockholders with different dividend preferences. They find in their sample of Canadian firms that higher power for management is associated with lower dividends, which seems consistent with the outcome hypothesis.

In a rare study that does consider stockholder conflicts, Faccio et al. (2001) find evidence that pyramids are used to expropriate minority stockholders in East Asian countries, but less so in Western Europe. We have little to say about pyramiding, since such control structures are rare in our sample. Instead, we focus on firms which are not part of business groups, and we exploit the variability in the cash flow rights of the controlling stockholder. This setting allows us to make a clean test based on a large sample of firms that have a clearly defined controlling stockholder. The tax regime is stable and neutral over the sample period, and all firms are exposed to the same legal protection of stockholder rights.

The literature on payout policy in private firms is recent and very limited. Michaely and Roberts (2012) use a large sample of private and public UK firms and find that the dividend payments of private firms are less smoothed. Moreover, firms with sole or family ownership pay dividends that are close to the residual dividend predicted by the irrelevance theory of Miller and Modigliani (1961). Michaely and Roberts conclude that "ownership structure and incentives play key roles in shaping dividend policies". We provide strong evidence in support of this view.

Finally, La Porta et al. (2000) find that dividend payout is higher in countries with good protection of minority stockholders. This result is in line with the outcome model and suggests that a certain degree of legal protection is needed to ensure that minority investors get a

satisfactory share of the firm's cash flow. In contrast, we study a cross section of firms in just one country, and that country has strong legal stockholder rights and good enforcement.<sup>5</sup> We find that controlling stockholders do not restrict payout to the minority when doing so would produce particularly large opportunities for consuming private benefits. This finding suggests that once basic requirements for the protection of minority stockholder rights are met in the law, controlling stockholders find it in their best interest to voluntarily abstain from opportunistic behavior. However, the contrast between their results and ours is not simply due to a favorable institutional regime, since we find that reputation concerns play a significant role in our sample firms. Because not every contingency can be dealt with by regulation and private contract, our results suggest there is also a role for informal mechanisms such as reputation.

The remaining part of our paper is organized as follows. The data set and the sample selection procedure are described in section I, whereas section II establishes the base-case model, defines the empirical proxies, and reports summary statistics. The statistical tests for the base case are presented in section III, while section IV reports robustness tests. Section V examines the evidence on reputation effects, while section VI concludes.

## **I. Data and sample selection**

Our data set is based on the population of Norwegian firms with limited liability. The data quality is unusually high, as the law mandates a standardized set of full 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 after fiscal year-end triggers automatic

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<sup>5</sup> La Porta et al. (2000) find that investor protection inherent in the commercial law is on average strongest in common law countries and weakest under civil law of the French type. The German and the Scandinavian civil law traditions fall in between. Based on seven stockholder right characteristics, Norway gets the highest score of the Scandinavian countries and the highest average score on the rule of law, including the maximum score on enforcement. Spamann (2010) corrects and reestimates the La Porta et al. index, finding that the original estimates and the corrected index scores only have a correlation coefficient of 0.53. Nevertheless, Norway's score is identical under the original and the corrected index, the score under the corrected index is practically equal to the average corrected score for common law countries, and all Scandinavian countries receive the same corrected score.

liquidation by the court. We know every ultimate ownership stake (i.e., direct stake plus indirect stake through intermediaries) in every firm. The data includes family relationship by blood and marriage between all owners, directors, and the CEO.<sup>6</sup>

Our starting point when selecting the sample is the population of private firms with limited liability.<sup>7</sup> To obtain a sample that suits our purpose, we add the following sampling filters:

1. Financial firms are excluded to avoid the impact of their regulatory capital requirements and special accounting rules. We also exclude utilities and public administration firms. These filters are common in the payout policy literature (Grullon and Michaely (2002), Allen and Michaely (2003), DeAngelo et al. (2006)).
  2. We ignore subsidiaries in business groups, since subsidiaries may pay dividends for different reasons than those determining payout to non-parent stockholders. For instance, dividends may be paid to manage cash and risk for the group as a whole (Michaely and Roberts (2012)). Moreover, expropriation within business groups has already been examined by Faccio et al. (2001) based on data from East Asia and Western Europe.<sup>8</sup>
  3. To avoid non-operative firms, a sample firm must have positive sales, assets, and employment.
  4. The firm must have consistent accounting statements. For instance, total assets need to equal total liabilities plus stockholders' equity.
  5. There must be a majority owner. This means more than 50% of the share capital must be held by a family with one or more stockholders, or by a firm whose owners cannot be identified.<sup>9</sup>
- Since our database includes all firms in the economy, we can follow ownership chains and

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<sup>6</sup>Accounting, ownership, and board data are delivered by Experian ([www.experian.no](http://www.experian.no)). Data on family relationships are from Skattedirektoratet. All data items have been received in electronic form and are organized as one integrated database by the Centre for Corporate Governance Research ([www.bi.edu/ccgr](http://www.bi.edu/ccgr)).

<sup>7</sup>Since listing status may matter for the firm's dividend policy, for instance via an easier access to equity markets, we exclude public firms from the sample. However, adding the very few public firms with concentrated ownership does not change our results.

<sup>8</sup>Unlike in countries like Sweden, multiple-class stock is rare in Norway (Ødegaard (2007), Eklund (2009), Ikäheimo (2011)).

<sup>9</sup>Such unidentified owners are either a financial institution, a foreign firm or a foreign person. Since we do not know the identity of foreign investors, we can neither trace their ultimate ownership nor assign them to families.

base the majority filter on ultimate ownership.<sup>10</sup> We also use the ultimate dividend, since our concern is the total payout the stockholder receives from a firm, whether directly or indirectly through intermediaries.

6. Single-owner firms are excluded, since they have no stockholder conflicts. For similar reasons, we ignore the smallest 5% of the firms by assets, sales, and employment.

We are interested in the potential conflict between majority and minority stockholders, studying how the majority chooses to share or not to share the firm's cash flow with the minority. Therefore, we use a sample of firms where the controlling block can be easily identified.<sup>11</sup> Our tests are based on keeping control of the firm constant while exploiting the variation in how the residual cash flow rights are split between the majority and the minority. To maintain this focus, we do not pay particular attention to blockholders unless they hold a majority stake, and we ignore potential blockholder coalitions in the spirit of Laeven and Levine (2008). Instead, the coalition we deal with is the easily identifiable one based on family relationships.

A firm's dividend policy may reflect other concerns than agency costs, such as financial constraints, 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 2006-2010. This period is shortly after a tax reform which eliminated a serious tax distortion of dividend policy.<sup>12</sup> The tax reform produced the same effective tax rate on dividend

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<sup>10</sup>The ultimate owner is very often an individual or a family. Therefore, running our tests just on family firms produces results that are similar to those we report. Our main results also hold in the subsample of firms controlled by financial institutions or foreigners.

<sup>11</sup>Given our filters, control is achieved either through owning stock directly or through an investment company without other economic activities.

<sup>12</sup>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 quite high in the year prior to the tax reform and quite low the year after, indicating a shift of cash outflows to preempt the tax increase inherent in the reform. Nevertheless, including 2005 in our sample does not significantly change the results. This suggests that even strong tax incentives do not wipe out the effect of agency costs on dividend payout.

income, capital gains, and interest income, and the tax rate is also very close to the one on labor income. Hence, differences in dividend policy across our sample firms cannot be driven by taxes.

Applying these filters, we end up with a sample of 8,744-10,185 firms per year. Table 1 shows the details.

[Insert Table 1 here]

## II. Model, empirical proxies, and summary statistics

The basic question we want to explore is whether higher cash flow rights for the controlling stockholder induce higher or lower dividend payout. Our base-case model is the following:

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

The measure of dividend payout,  $Div$ , is the ratio of cash dividends to after-tax operating earnings. This is the classic dividend payout ratio, which we use when testing the base-case model in section III. However, majority stockholders may choose to underreport earnings and hence inflate the classic payout ratio in order to hide cash diversion from minority stockholders. To reduce this bias, the robustness tests in section IV alternatively measure  $Div$  by the ratio of dividends to cash flows, sales, and assets. The approach is similar to the one used by La Porta et al. (2000) and Faccio et al. (2001).

Ownership concentration,  $Con$ , which is the key independent variable in our model.  $Con$  reflects the potential seriousness of the stockholder conflict in majority-controlled firms, and we measure it in the base case as the ultimate share held directly or indirectly by the largest owning entity. This entity may be a family, a native financial institution or a foreign investor of any type. A family consists of either a single individual or several individuals related by blood or marriage who all own stock in the firm. We use two alternative family definitions. The wide definition in the base case includes individuals related by blood or marriage up to the fourth degree of kinship (family). The more restricted definition only includes parents and underage children (nuclear

family). A final proxy for *Con* is the holding of the largest separate owning unit. Unlike for the family-based definitions, every individual in the family is considered a separate owner. Since the potential agency cost decreases with *Con* in our sample, the predicted coefficient  $\beta_1$  in (1) is positive under the outcome model. According to the substitute model,  $\beta_1$  is non-positive, i.e., negative or zero.

We subsequently expand the base-case model by ownership characteristics beyond *Con*. In particular, we account for the distribution of ownership within the largest family, and for minority power as reflected in the composition of the minority stakes and the minority's presence in the board. Minority power and dividend payout will be positively related under the outcome model and inversely under the substitute model.

The remaining determinants in (1) are control variables. Firms with more liquid assets, *Liq*, are more likely to pay higher dividends. This is because such firms can make the payment at lower transaction costs than others, and because they may have more cash on hand than what is needed for operations, investment, and financing (DeAngelo et al. (2006)). Along the same lines, firms with higher profitability, *Pro*, may be more likely to pay out a larger share of their earnings. Therefore, we predict a positive coefficient for both *Liq* and *Pro*, which are proxied for by the cash-to-assets ratio and the operating return on assets, respectively.

*Fin* reflects constraints on the firm's ability to finance its cash outflow. This constraint may restrict dividend payments more the higher the firm's growth prospects. For a given level of profitability and asset liquidity, we predict a negative relationship between dividends and *Fin*, which we measure by sales growth over the past seven years.

It has long been argued that firms pay dividends from what they consider their permanent earnings (Lintner (1956)). Therefore, firms with more risky earnings will be less likely to pay high dividends. This logic is also consistent with the maturity hypothesis of Grullon et al. (2002), stating that dividend increases are associated with lower firm risk. We predict a negative

relationship between dividends and risk, *Risk*, which we measure by the volatility of the firm's sales revenue over the past seven years.

Grullon et al. (2002) argue that risk decreases and operations mature as the firm becomes larger and older. These changes may produce higher dividends. 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 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 reflecting whether the firm is in agriculture, 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, i.e., both payers and non-payers. Just like the firms that pay dividends, those that choose not to pay represent one particular way of handling the potential stockholder conflict. For instance, the more nonpayers (i.e., firms with very low payout) there are around 50% ownership concentration compared to 90%, the more the data would support the outcome model. Therefore, we also estimate a payout propensity model as a robustness test, where the dependent variable is whether or not 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, about one fourth of the firms pay dividends in a given year. The mean payout ratio is 20% for the sample as a whole and 75% for the payers. As in recent samples of public US companies (Fama and French (2001)), the median firm does not pay dividends. The largest equity holding in a majority-owned firm is on average 61% when every owner is a separate unit, 67% if persons are assigned to nuclear families, and 72% when we use the wide family definition of the base case. There is one family member holding a majority stake in the firm in almost four out of five 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.<sup>13</sup>

[Insert Table 2 here]

### **III. Statistical tests**

Table 3 shows that, except for some of the proxies for stockholder conflicts, the correlation between the independent variables in (1) is generally low. Thus, multicollinearity will not be a problem in the regressions. Notice also that the correlation coefficient between the share of the largest family under the wide and the narrow definition is only 0.55. Thus, it may be important to check whether the results are sensitive to the way stockholder conflicts are measured.

[Insert Table 3 here]

We report univariate results for the relationship between ownership concentration and dividends in section A below. The findings for model (1) in the base case are presented in section B, while section C analyzes the effect of modeling the potential stockholder conflict in alternative ways.

#### **A. Ownership concentration and dividends**

The two key variables for testing the outcome model vs. the substitute model are the payout ratio and the size of the largest equity block. As an initial check, we compare the payout ratios for two groups. The first group consists of firms where the controlling block is above 50%, but below 60%. The second holds firms where the controlling block is above 90%, but below 99%. These two groups capture the firms with the largest vs. the smallest potential for stockholder conflicts.

Table 4 compares the payout ratios for the two groups year by year, for the pooled sample (All years), and for the subsample of firms with positive dividends (Payers). The table shows that the

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<sup>13</sup> The mean and median sales in the sample firms are \$2 and \$1 mill, respectively. Five percent of the firms have sales below \$0.1 mill., while five percent sell more than \$10 mill. The highest sales figure is \$60 mill. in the winsorized sample and \$1.4 bill. in the unwinsorized sample.

low-concentration firms have consistently and significantly higher payout than the high-concentration firms. The average payout ratio for all firms is around 20%, while the difference between the two groups is fairly stable at around 6-8%. For the subsample of dividend payers, where the average payout ratio is around 70%, the average difference in payout between the low- and high-concentration subsamples exceeds 9 percentage points.<sup>14</sup> These univariate results are consistent with the substitute hypothesis and inconsistent with the outcome hypothesis.

[Insert Table 4 here]

## **B. The base case**

Table 5 shows the base-case estimates. We report the findings year by year, for the pooled sample, and for the Fama-MacBeth approach constructed from the year-by-year estimates (Fama and MacBeth (1973)).

The year-by-year estimates reflect a very stable relationship between dividends and potential dividend determinants. Hence, these estimates are very similar to those based on the pooled sample (All) as well as the Fama-MacBeth (FMB) approach. Since this stability prevails in every subsequent analysis, we only report the Fama-MacBeth estimates in the following. The annual estimates are available upon request.

[Insert Table 5 here]

The table documents an inverse relationship between dividend payout (dividends to earnings) and ownership concentration (the ultimate holding of the largest owner, which is either a family, a financial firm or a foreigner). Thus, majority-held firms tend to pay lower dividends as the cash flow right of the controlling stockholder increases. This result is at odds with the outcome model (opportunistic behavior), but supports the substitute model (non-opportunistic behavior). Hence,

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<sup>14</sup> We use both the t- and the Wilcoxon-Mann-Whitney tests to examine the differences between the two groups. The latter test has the advantage of not requiring the normality assumption. It confirms the result from the t tests that of a statistically significant difference between the distributions of payout across the two groups.

the data is consistent with the notion that the controlling stockholder uses dividend policy to mitigate rather than to amplify the potential agency conflict with fellow stockholders that is inherent in the firm's ownership structure. Such behavior may be rationalized by the economic incentive to build reputation for loyalty and trust among minority stockholders.

The relationship between the dividend payout 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, and lower risk. The firm's age and past sales growth are mostly insignificant.

Hence, the relationship between ownership concentration and dividend payout in (1) is negative and statistically significant. The economic significance is moderate. To illustrate, suppose ownership concentration increases from its mean value of 72% by one standard deviation (14%) to a level of 86%. Then, the expected payout ratio decreases by around 2 percentage points, or by around 6% of its own standard deviation. The size of the dividend drop is not critical for our story, however, as even an insignificant relationship is consistent with the substitute model. Interestingly, Shleifer and Wolfenzon (2002) predict that the dividend effect of changes in ownership concentration is likely to be smaller in countries with better investor protection.

Finally, the Fama–MacBeth results from table 5 are confirmed when we control for non-observable dividend determinants by using panel estimation methods in table 6. We run regressions with fixed industry effects, and with random industry effects, random firm effects, and random firm and year effects.<sup>15</sup> The results correspond to those in table 5 regardless of how we account for unobservables. Once again we find a negative and significant relationship between dividend payout and the cash flow rights of the majority stockholder. The control variables enter like in the base case.

[Insert Table 6 here]

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<sup>15</sup> Since the ownership structure is quite persistent at the firm level, we choose random effects rather than fixed effects to account for firm-specific non-observables.

Overall, the estimates of the base-case model show that the relationship between dividend payout and the controlling stockholder's stake is inverse and stable. This result supports the substitute model, which predicts that the relationship between ownership concentration and dividends in majority-held firms is negative or flat.

### **C. Ownership structure**

The base-case estimates in table 5 measures potential conflicts among the owners by the largest equity fraction held by an extended family, a financial institution or a foreigner. Since our data set allows for a considerably deeper analysis of how ownership structure 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 the minority stockholders as a group.

Families represent a dominant majority stockholder type in our sample. The base-case definition of a family is quite wide, as it includes relationships by blood and marriage up to the fourth degree of kinship. A more narrow measure is what we call the nuclear family, which we define as parents and underage children. Both family definitions have advantages and limitations. The nuclear family abstracts from possibly strong relationships in the wider family, while the wide definition may overestimate the strength of distant ties. We have a preference for the wide definition, however, since it allows us to more clearly separate agency issues within a family as opposed to between families.

Although table 3 showed that the nuclear family proxy is not strongly related to the base case measure, model I in table 7 documents that the nuclear family definition produces estimates that are very close to those under the base case in table 5.<sup>16</sup> Thus, the tightness of the family definition is not driving our results. Similarly, model II shows that if we hold on to the wide family definition and only study the subsample of firms controlled by families, the same results

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<sup>16</sup> Like in the base case, we restrict the attention to firms where the controlling stake is above 50% and below 99%. The more narrow definition of a family makes the upper bound less restrictive and generates a larger sample. Using the base-case sample produces similar results.

prevail. Model III considers the case where one individual in the family has enough stock to form a majority alone. We find that payout is higher, suggesting that a minority-friendly dividend policy is more likely when extracting private benefits would not require the formation of a coalition within the family.

[Insert Table 7 here]

Model IV ignores family as a decision-making unit and measures ownership concentration based on separate holdings per personal owner. This means that while a family with five owning members represents one single owner in table 5, they are five different owners in model IV. Nevertheless, the base-case results are unchanged. Thus, the data is consistent with the substitute model independently of whether and how we account for family relationships.

The corporate governance literature tends to find a non-linear relationship between ownership concentration and performance (Becht et al. (2003)). Model V examines this possibility for the dividend setting by adding a dummy variable which is 1 if the largest owner has at least two thirds of the equity (super majority) and zero otherwise.<sup>17</sup> There is some evidence of a convex relationship, as the negative slope gets less pronounced when concentration grows. However, the slope remains negative, and the intercept is lower as measured by the coefficient of the supermajority dummy.

The ability of the largest stockholder to extract private benefits may depend not just on the equity fraction, but also on the structure of the minority stakes. If minority stockholders are fragmented, they may find it more difficult to monitor, coordinate, and put pressure on the majority (Pagano and Roëll (1998)). Correspondingly, it may be more tempting for the majority to exploit the minority. We use several proxies of aggregate minority power to explore this possibility.

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<sup>17</sup>The two-thirds majority allows the largest owner to amend the company charter without the consent of minority shareholders.

The Herfindahl index of minority holdings in model VI reflects the fragmentation among minority stockholders as a group. The estimates show that its coefficient is negative. Hence, the more diffuse the minority as a group, the higher payout they receive per unit of earnings. Just like a low Herfindahl index, a high discrepancy between the equity fraction held by the largest and the second largest owner may reflect higher potential for expropriation (Laeven and Levine (2008)). We include this measure of minority power in model VII and find that a higher gap, which means a potentially weaker minority, is associated with higher payout. Hence, models VI and VII both support the substitute hypothesis.

Many of our sample firms have just a few owners. Therefore, one may wonder whether the outcome model receives no empirical support because a few people with strong personal ties own a large portion of the firm. In that case, the potential stockholder conflict may be disciplined by social rather than economic relationships (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 few vs. many owners in the firm. Model VIII controls for the number of owners, while model IX only uses the subsample of firms with three owners or more. The base-case results persist in both models.

Minority stockholders are not always on the board. This occurs in about 60% of our sample firms. Such board absence may be to the minority's disadvantage under the outcome model, since representation would have provided the minority with better tools to discipline the controlling majority towards consuming less private benefits. The dummy variable for minority directors in model X has a negative coefficient. This result is in line with the substitute model, since payout is higher the weaker the minority.<sup>18</sup>

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<sup>18</sup>About 23% of our sample firms are controlled through at least one intermediary, but only 2% have more than one level. Although we do not focus on business groups, the potentially higher gap between cash flow rights and control rights in pyramids may produce higher incentives and ability to expropriate the minority. We explore this possibility by estimating the base-case model for subsamples where control is either achieved through direct ownership or by at least one level of indirect ownership, respectively. The estimates do not differ materially. This also happens when we use the small subsample where it takes at least two levels of indirect ownership to achieve control.

Summing up, we find that regardless of how we define the largest stockholder, the base case results from section B survive. This is also true when we account for the internal structure of the family, ignore family relationships altogether, and when we account for the composition of minority stockholders as a group. The tendency to pay higher dividends increases when the majority faces a diffuse minority block, a minority block not represented on the board, or a minority which is much smaller than the controlling block. Overall, these results are consistent with the hypothesis that dividends mitigate potential conflicts between stockholders that are created by the firm's ownership structure.

#### **IV. Robustness**

The findings in section III support the substitute model. However, one may worry that the diversion of a jointly owned cash flow for private benefits induces the controlling stockholder to underreport the earnings in order to inflate the classic payout ratio we have used so far. Such a practice would bias the classic payout ratio of section III upwards in firms where the actual stockholder conflict is made larger by the firm's dividend policy. Since this may bias our test against the outcome model, we alternatively normalize dividends by cash flow, sales, and assets (La Porta et al. (2000)).

According to the three first columns of results in table 8, the negative relationship between ownership concentration and dividends from the base case is reproduced when we alternatively normalize dividends by cash flow, sales, and assets. Thus, any attempt by majority stockholders to manage earnings downwards in order to inflate the classic payout measure and hence hide private benefits does not materially bias our major result in the base case.

[Insert Table 8 here]

The proxy for financial constraints is not statistically significant in the base case. Model IV of table 8 uses asset turnover (sales to assets) rather than past sales growth as a proxy. The idea is that firms generating high sales with their existing assets may have a higher need to invest,

which may make them more financially constrained. The estimates show that the basic relationship between ownership concentration and dividends is upheld. Moreover, like in table 5, financial constraints have no material effect on dividend payout.

We use the interest coverage ratio to measure of financial constraints in model V. Firms with low earnings relative to their interest payments could be prevented from paying high dividends due to a bank covenant or a lack of cash. Using this measure reduces sample size somewhat, since we examine only levered firms. The results indicate that higher interest coverage is indeed associated with higher dividend payments. Reassuringly, the dividend effect of the ownership structure and the remaining control variables is unaltered.

DeAngelo et al. (2006) show that dividend payments are related to the ratio between total retained earnings and total equity. The idea is that more mature firms with low growth opportunities and high profitability should make high cash distributions to their owners. We add their measure of payout capacity to our set of controls in model VI and find that it has the anticipated positive sign and that it does not alter the role of the other determinants.

Not paying dividends is as relevant as paying for the relationship between dividend policy and agency costs. Therefore, our regressions have so far included both dividend payers and non-payers. Still, the relationship between stockholder conflicts and dividends may be different in the two groups. Moreover, table 2 showed that most firms in our sample do not pay dividends. Therefore, model VII reestimates the base-case model on the subsample of dividend payers. The estimates show that just like for the full sample, there is an inverse relationship between ownership concentration and dividends. The same result turns up in model VIII, where we estimate a logit model in which the dependent variable is whether or not the firm pays a dividend. The independent variables in this payout propensity model are identical to those using the fraction paid as the dependent variable.<sup>19</sup>

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<sup>19</sup>Considering the large number of firm years with zero dividends, we have also estimated a Tobit model. The results are very similar to those of model VIII.

Stock repurchases have become an important form of payout for large US firms (Grullon and Michaely (2002)). However, repurchases were not allowed in Norway until 1999, and they are still rare events in private firms. We construct a measure of repurchases from the firm's equity accounts and re-estimate the basic model on the firms that do not show evidence of repurchase activity. This restriction reduces sample size only slightly, reflecting the low repurchase propensity. The estimates confirm the secondary role of repurchases as a payout mechanism, as the results for the non-repurchasing subsample in model IX are basically identical to those for the full sample.

Whereas dividends received by personal investors are taxable, intercorporate dividends are tax free until they are paid out to personal investors. This asymmetry may induce lower payout by firms with a higher proportion of their stock held directly by persons. Model X accounts for the proportion of personal shareholders owning stock directly, and who must hence pay tax on their received dividends. While there is indeed a small, negative effect on payout, the relationship between payout and the potential seriousness of the stockholder conflict remains unchanged.

Overall, these robustness tests in this section show that the inverse relationship between ownership concentration and dividend payout is insensitive to how we normalize dividend payout, measure financial constraints, take account of non-payers and stock repurchases, whether we predict the propensity to pay dividends or the amount paid, and whether or not the dividend payout triggers stockholder taxes.

## **V. Reputation**

The findings so far reflect a robust, positive relationship between dividend payout and the potential for stockholder conflicts. One possible explanation why majority stockholders abstain from exploiting their fellow investors is that the institutional framework discourages opportunistic behavior. However, since strong institutions can never eliminate the potential for agency costs, there may still be room for voluntary discipline in payout policy. In particular, one

may observe that controlling stockholders who anticipate the need for sustained equity investment in their firm will find it in their best interest to establish a record for treating minority investors fairly. Along similar lines, Gomes (2000) models managerial reputation effects in the context of IPOs and potential cash flow diversion.

If reputation concerns are important, one should observe more minority-friendly dividend payout in firms that anticipate the need for new minority investment. Therefore, we relate dividend policy to subsequent equity investment in order to analyze the relevance of the reputation channel from stockholder conflicts to dividend payout. If we find that the revealed need for financing is linked to previous minority-friendly payout, it would be further evidence that agency concerns matter for cross-sectional differences in payout policy even in minority-protective legal environments (Michaely and Roberts (2012)).

Our sampling procedure follows the firm over several years. We look for measures of new minority investment in the firm during the later part of the sample period, linking that investment to the firm's dividend policy during the preceding years. We use three alternative proxies for reputation concerns. The first is based on the main incentive for building reputation, which is getting additional minority investment. We construct a dummy variable which is equal to 1 if the share of the largest stockholder in 2010 is lower than in 2009, and the firm's new paid-in capital is at least as high as in the previous year. This proxy indicates additional investment in the firm by at least one minority stockholder. The second proxy captures a change in the identity of minority stockholders. The idea is that minority investors may need to see a satisfactory dividend track record before they are willing to invest. We use a dummy variable that is 1 if a new minority investor enters the firm in 2010 and 0 otherwise. Our third reputation proxy is a composite measure which is 1 if either paid-in capital is stable or increases, the share of the controlling stockholder drops, or at least one new minority investor enters the firm. If none of these conditions are met, the variable is 0. The idea is to capture different determinants of the demand for minority equity investment in one single measure.

All three proxies for reputation incentives are conditional on the firm having the same controlling owner throughout the sample period. We add this restriction because we want to measure incentives for building minority-friendly reputation which the majority stockholder may need time to establish. The persistent majority stockholder criterion includes 2010, since we are not interested in cases where the majority envisions sale of the controlling stake.

We have shown repeatedly that the expected payout is higher when the majority stake is closer to 50% than when the stake is higher. This finding may reflect that controlling stockholders facing more severe agency problems try to mitigate them by paying higher dividends. If this policy is successful, the minority would be at least as active at low controlling stakes as at very high ones. Along the same lines as in table 4, we compare minority investment activity across majority-controlled firms where ownership concentration is low (50-60%) vs. high (90-99%). Since we want to link ex ante concentration to ex post minority investment, the size of the controlling block is measured as an average from 2006 through 2009. As shown by the bottom row of table 9, the size of the two groups is quite similar. We compare the proportion of firms in each group in 2010 that get either additional minority investment, new minority investors, or both.

[Insert Table 9 here]

Table 9 shows that the low-concentration group is significantly more likely to attract minority investment than the high-concentration group.<sup>20</sup> One quarter of the firms in the former group record some type of minority investment, compared to around one tenth in the latter. Therefore, firms facing the largest potential agency problems between majority and minority stockholders pay higher dividends (table 4) and are also likely to receive more minority investment than other firms (table 9).

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<sup>20</sup> We use both the Chi<sup>2</sup> and the Fisher exact test to compare the proportions for the two groups. The Fisher test is more rigorous for small proportions. The limit is typically set at 5%, which is close to the proportion for the high-concentration group in our sample.

Two different univariate analyses have shown that lower ownership stakes in majority-controlled firms are associated with both higher dividend payout and higher minority investment. In the next step, we examine the direct relationship between ex ante dividend payout and ex post minority investment in a multivariate setting. We first regress the dividend payout ratio on the control variables in the base-case model (1), which are liquidity, profitability, financial constraints, risk, size, age, and industry:

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

We run cross-sectional regressions of (2) for the first four years (2006-2009) of the five-year sample period. Next, we collect residuals from (2), i.e., the unexplained part of dividend payout, and take the average of the  $\varepsilon_{it}$  values for each firm  $i$  over the four years. This average residual payout is then regressed on variables that are supposed to reflect the firm's reputation incentives as measured in the final sample year (2010). The model is:

$$(3) ResDiv_i = \gamma + \theta_1 Con_{it} + \theta_2 Con_{it} \cdot Rep_{it} + \theta_3 Rep_{it} + \vartheta_{it},$$

where  $Rep$  is a measure of reputation incentives in 2010, and  $Con$  is average ownership concentration measured over 2006-2009.

Table 10 shows the estimates of (3) under the three alternative proxies for reputation incentives we used in table 9. The coefficient on ownership concentration taken separately is negative and significant, as usual. The interaction terms show that this inverse relationship is even stronger for firms that may be incentivized by reputation concerns. Also, the intercept is higher, reflecting a higher dividend level in general when reputation concerns are prevalent.

[Insert Table 10 here]

These findings imply that the substitute-type association between dividend payout and the share of the controlling owner is more pronounced in firms with stronger reputation incentives. This relationship holds regardless of whether we measure these incentives by the arrival of new

minority investors, a lower majority share, or a combination of the two. The finding supports the hypothesis that firms pay high dividends in order to maintain high and renewed minority investment. Such a dividend policy may produce value by reducing the firm's cost of capital.

We find this evidence of majority stockholder reputation effects on dividend policy in a country with strong minority protection. Thus, strong legal protection of minority rights and incentives to invest in reputation for treating co-investors well are not necessarily alternative ways of reducing agency costs. Given the earlier cross-country results in favor of the outcome model, our findings point to the need for future research on the relationship between formal and informal vehicles for protecting minority investors.

## **VI. Conclusions**

The relationship between stockholder conflicts and dividend policy within a given legal regime has barely been addressed in the empirical literature. We study this relationship in an empirical setting with neutral dividend taxation and strong legal protection of minority stockholder rights. Our main conclusion is that market forces incentivize controlling stockholders to treat the minority well even in minority-friendly legal environments. We find that the higher the potential for conflicts among the stockholders, the more of the firm's earnings is paid out as dividends. This relationship holds regardless of how we measure conflict potential and dividend payout. Thus, majority stockholders use dividends to reduce agency costs rather than to increase them by opportunistic payout behavior. We also find that this behavior is consistent with an incentive to build valuable future reputation by the current dividend policy.

This result contrasts with earlier evidence on dividend policy differences across different legal regimes, supporting the idea that stockholders behave opportunistically when the law allows for it (La Porta et al. (2000)). Our findings suggest that within a legal regime where minority stockholders are well protected by the regulator, the majority stockholders find it in their own interest to voluntarily abstain from opportunistic behavior and instead use dividend policy to

reduce agency conflicts. This evidence also supports the argument by Michaely and Roberts (2012) that ownership characteristics and incentives are important determinants of the firm's dividend policy.

The rationale for the payout behavior we observe may be the need to issue new equity to minority investors in the future. We find that a less opportunistic dividend policy is indeed associated with higher minority equity investment later on. Reputation incentives for the individual firm may therefore complement minority-friendly regulation for all firms. This relationship suggests that the reduction of agency problems based on market mechanisms rather than institutions is a useful perspective on how firms make their dividend decisions.

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**Table 1: Population, filters, and sample**

Year	Sample, payers	Sample, all	Single owner	No majority owner	Small size	Inconsistent data	No activity	Subsidiary	Financial firm	Population
2006	2,470	9,873	9,873	40,827	62,855	68,131	69,629	116,133	157 890	180,543
2007	3,075	10,185	10,185	40,148	62,073	67,215	68,662	126,097	167,539	191,827
2008	2,502	9,940	9,940	40,547	62,669	67,908	69,427	128,397	172,030	197,813
2009	2,406	9,638	9,638	40,830	63,819	69,267	70,738	129,391	173,574	200,038
2010	2,342	8,744	8,744	38,674	61,975	67,071	68,455	125,336	169,948	194,724

This table shows the effect of applying successive sampling filters. We start from the large group of limited liability private companies in Norway to the very right in the table (Population). We then impose successive filters moving towards the left that exclude financials (Financial firm), firms that are majority held in a business group (Subsidiary), firms with zero sales, assets or employment (No activity), and firms with suspect accounting figures (Inconsistent data). We filter out the smallest 5% of firms in terms of assets, sales, and employees (Small size), and we only include firms with a controlling stockholder (No majority owner). A stockholder can also be a family with several owning members, but we exclude firms with just one stockholder (Single owner). These filters jointly produce our basic sample (Sample, all). Finally, we ignore the non-dividend paying firms and show the number of firms with positive dividends (Sample, payers).

**Table 2: Descriptive statistics**

Characteristic	2006	2007	2008	2009	2010	All	Payers
Dividend propensity	0.250 (0.000)	0.302 (0.000)	0.252 (0.000)	0.250 (0.000)	0.268 (0.000)	0.264 (0.000)	1.000 (1.000)
Dividends to earnings	0.189 (0.000)	0.223 (0.000)	0.183 (0.000)	0.194 (0.000)	0.216 (0.000)	0.201 (0.000)	0.754 (0.774)
Dividends to sales	0.022 (0.000)	0.025 (0.000)	0.036 (0.000)	0.019 (0.000)	0.021 (0.000)	0.021 (0.000)	0.078 (0.054)
Dividends to cash flow	0.290 (0.000)	0.339 (0.000)	0.264 (0.000)	0.244 (0.000)	0.295 (0.000)	0.287 (0.000)	1.260 (0.909)
Dividends to assets	0.037 (0.000)	0.045 (0.000)	0.036 (0.000)	0.034 (0.000)	0.036 (0.000)	0.038 (0.000)	0.142 (0.112)
Holding of largest owner, incl. extended family	0.706 (0.660)	0.721 (0.682)	0.725 (0.700)	0.726 (0.700)	0.728 (0.700)	0.724 (0.693)	0.715 (0.689)
Holding of largest owner, incl. nuclear family	0.653 (0.650)	0.629 (0.637)	0.630 (0.633)	0.630 (0.626)	0.633 (0.630)	0.668 (0.667)	0.627 (0.625)
Holdings of largest owner, incl. separate owners	0.641 (0.650)	0.609 (0.600)	0.608 (0.600)	0.609 (0.600)	0.611 (0.600)	0.609 (0.600)	0.609 (0.600)
Majority owner in largest family	0.845 (1.000)	0.758 (1.000)	0.749 (1.000)	0.747 (1.000)	0.749 (1.000)	0.770 (1.000)	0.770 (1.000)
Minority concentration	0.872 (1.000)	0.860 (1.000)	0.853 (1.000)	0.846 (1.000)	0.843 (1.000)	0.856 (1.000)	0.839 (1.000)
Minority on board	0.346 (0.000)	0.410 (0.000)	0.403 (0.000)	0.410 (0.000)	0.417 (0.000)	0.397 (0.000)	0.415 (0.000)
Liquidity	0.260 (0.191)	0.264 (0.202)	0.262 (0.195)	0.265 (0.198)	0.269 (0.206)	0.264 (0.198)	0.347 (0.320)
Profitability	0.098 (0.090)	0.102 (0.099)	0.078 (0.081)	0.063 (0.067)	0.067 (0.066)	0.082 (0.081)	0.196 (0.175)
Financial constraints	0.123 (0.081)	0.136 (0.100)	0.146 (0.096)	0.107 (0.066)	0.081 (0.042)	0.121 (0.077)	0.148 (0.101)
Risk	0.339 (0.233)	0.335 (0.233)	0.328 (0.226)	0.325 (0.230)	0.315 (0.223)	0.329 (0.229)	0.267 (0.189)
Size	14.671 (5.229)	18.164 (6.542)	18.931 (6.846)	17.559 (6.644)	18.080 (6.933)	17.473 (6.413)	22.344 (10.991)
Age	16.412 (13.000)	16.188 (13.000)	16.596 (13.500)	16.923 (14.000)	17.366 (14.000)	16.677 (14.000)	17.635 (15.000)
Sample size	9,873	10,185	9,940	9,638	8,744	48,380	12,795

This table shows the mean and median (in parentheses) of variables used in the empirical analysis. Dividend propensity is the fraction of firms paying dividends, and Dividends is cash dividends paid to stockholders. Earnings are bottom-line profits, Sales is total sales revenue, Cash flow is cash flow from operations after taxes, and Assets is the total of balance sheet assets. 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. Extended family is the aggregate equity fraction of the largest family by ownership, 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, and Separate owners reflects that 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 Financial constraints is measured as average sales growth over the past three years. Risk is the standard deviation of sales growth over the past seven but minimum 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, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratio is winsorized at the 98% tail, while Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails.

**Table 3: Correlations**

	Dividends to earnings	Holding of largest owner	Holding of largest nuclear family	Holding of largest separate owner	Majority owner in largest family	Minority concen- tration	Minority on board	Liquidity	Profitability	Financial constraints	Risk	Size
Holding of largest owner, incl. extended family	-0.04											
Holding of largest owner, incl. nuclear family	-0.02	0.55										
Holding of largest owner, incl. separate owners	-0.02	0.49	0.92									
Majority owner in largest family	0.02	-0.01	0.61	0.73								
Minority concentration	-0.02	0.27	0.14	0.12	-0.01							
Minority on board	0.03	-0.25	-0.06	-0.04	0.08	-0.06						
Liquidity	0.24	-0.04	0.02	0.02	0.05	0.05	0.05					
Profitability	0.37	-0.01	-0.01	-0.01	0.00	0.02	0.01	0.24				
Financial constraints	0.04	-0.01	-0.04	-0.04	-0.03	-0.04	-0.03	-0.02	0.14			
Risk	-0.14	-0.03	0.01	0.02	0.03	-0.02	-0.02	0.00	-0.11	0.31		
Size	0.21	0.00	-0.09	-0.04	-0.07	-0.15	-0.07	-0.19	0.16	0.02	-0.23	
Age	0.05	0.13	-0.01	-0.01	-0.07	0.02	-0.13	-0.04	0.02	-0.19	-0.27	0.11

This table shows the Pearson bivariate coefficients of correlation for pairs of key variables used in the empirical analysis. 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. Extended family is the aggregate equity fraction of the largest family by ownership, 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, and Separate owners reflects that 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 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 shareholders are represented on the board and 0 otherwise. Liquidity is cash holdings to assets, Profitability is operating profit after taxes divided by assets (ROA), and Financial constraints is average sales growth over the past three years. Risk is the standard deviation of sales growth over the past seven but minimum 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 2006-2010 period. We ignore subsidiaries, financials, single-owner firms, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratio is winsorized at the 98% tail. Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails.

**Table 4: Dividends and ownership concentration**

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, Wilcoxon test
2006	0.215	0.158	0.057	(0.000)	(0.000)
2007	0.246	0.189	0.057	(0.000)	(0.000)
2008	0.217	0.143	0.074	(0.000)	(0.000)
2009	0.234	0.151	0.083	(0.000)	(0.000)
2010	0.236	0.163	0.073	(0.000)	(0.001)
All years	0.230	0.161	0.069	(0.000)	(0.000)
Payers	0.766	0.673	0.093	(0.000)	(0.000)

This table shows the average dividend to earnings ratio for two ownership concentration groups (Group 1 and Group 2). The controlling stockholder in Group 1 has more than 50% but less than 60% of the firm's stock. In Group 2, the largest stockholder owns between 90% and 99%. The largest 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 compute the difference between the averages, and we test for their equality using the t-test and the Wilcoxon-Mann-Whitney 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, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The distribution of the payout ratios is winsorized at the 98% tail.

**Table 5: The base-case regression**

Independent variable	2006	2007	2008	2009	2010	All	FMB
Ownership concentration	-0.167 (0.000)	-0.180 (0.000)	-0.165 (0.000)	-0.206 (0.000)	-0.173 (0.000)	-0.179 (0.000)	-0.178 (0.000)
Liquidity	0.162 (0.000)	0.202 (0.000)	0.239 (0.000)	0.280 (0.000)	0.285 (0.000)	0.234 (0.000)	0.234 (0.001)
Profitability	0.491 (0.000)	0.609 (0.000)	0.494 (0.000)	0.573 (0.000)	0.680 (0.000)	0.557 (0.000)	0.569 (0.000)
Financial constraints	-0.011 (0.454)	0.004 (0.796)	-0.012 (0.399)	0.003 (0.833)	-0.037 (0.029)	-0.007 (0.295)	-0.006 (0.516)
Risk	-0.124 (0.000)	-0.132 (0.000)	-0.111 (0.000)	-0.089 (0.000)	-0.106 (0.000)	-0.117 (0.000)	-0.112 (0.000)
Size	0.021 (0.000)	0.022 (0.000)	0.018 (0.000)	0.016 (0.000)	0.014 (0.000)	0.018 (0.000)	0.018 (0.001)
Age	-0.029 (0.001)	-0.022 (0.000)	-0.015 (0.012)	-0.003 (0.636)	0.010 (0.177)	-0.011 (0.001)	-0.010 (0.229)
R <sup>2</sup>	0.297	0.362	0.330	0.327	0.336	0.328	0.328
Sample size	9,786	10,058	9,751	9,446	8,618	47,659	47,659

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 earnings. 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 over total assets (ROA), and Financial constraints is measured as average sales growth over the past three years. Risk is the standard deviation of sales growth over the past seven but minimum 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. We ignore subsidiaries, financials, single-owner firms, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratio is winsorized at the 98% tail. Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails. We control for the firm's industry (not reported). The table reports the estimates of the year-by-year OLS regressions, the pooled sample OLS regression (All), and the Fama MacBeth (FMB) regressions with the adjusted R<sup>2</sup> and the sample size from the pooled regression.

**Table 6: The base-case model estimated with panel methods**

Independent variable	Model			
	I	II	III	IV
Ownership concentration	-0.094 (0.001)	-0.099 (0.000)	-0.077 (0.000)	-0.082 (0.011)
Liquidity	0.276 (0.000)	0.284 (0.000)	0.274 (0.000)	0.277 (0.000)
Profitability	0.525 (0.000)	0.541 (0.000)	0.341 (0.000)	0.337 (0.000)
Financial constraints	-0.026 (0.013)	-0.010 (0.404)	-0.001 (0.870)	-0.010 (0.525)
Risk	-0.070 (0.010)	-0.057 (0.003)	-0.057 (0.000)	-0.064 (0.001)
Size	0.045 (0.000)	0.039 (0.000)	0.038 (0.000)	0.045 (0.000)
Age	0.006 (0.254)	0.008 (0.328)	0.011 (0.004)	0.004 (0.677)
Random firm effect	No	No	Yes	Yes
Random industry effect	No	Yes	Yes	No
Fixed industry effect	Yes	No	No	No
Random year effect	No	No	No	Yes
R <sup>2</sup>	0.147	0.147	0.144	0.112
Sample size	47,659	47,659	47,659	47,659

This table reports the coefficient estimates using panel data techniques to estimate model (1) of the main text. The p-values are shown in parentheses. The dependent variable is cash dividends divided by earnings. 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 Financial constraints is average sales growth over the past three years. Risk is the standard deviation of sales growth over the past seven but minimum 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 2006-2010. We ignore subsidiaries, financials, single-owner firms, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratio is winsorized at the 98% tail. Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails. The table reports Fama-MacBeth regression estimates with the adjusted R<sup>2</sup> and sample size from the pooled regression.

**Table 7: Accounting for multiple owner characteristics**

Independent variable	Ownership concentration (OC)					Minority power				
	I: Nuclear family	II: Family firm (subsample)	III: Majority family member	IV: No family membership	V: Super majority	VI: Minority concentration	VII: Largest less second largest	VIII: Number of owners	IX: At least 3 owners (subsample)	X: Minority on the board
OC	-0.158 (0.000)	-0.177 (0.000)	-0.177 (0.000)	-0.162 (0.000)	-0.675 (0.000)	-0.143 (0.000)	-0.214 (0.000)	-0.176 (0.000)	-0.182 (0.001)	-0.180 (0.000)
Largest in family has majority			0.002 (0.098)							
Largest exceeds 2/3					-0.328 (0.001)					
Largest exceeds 2/3 * OC					0.569 (0.001)					
Herfindahl index, minority						-0.046 (0.011)				
Largest less second largest							0.001 (0.006)			
Number of owners								-0.010 (0.838)		
Minority is director										-0.005 (0.045)
Liquidity	0.217 (0.001)	0.223 (0.001)	0.223 (0.001)	0.217 (0.000)	0.264 (0.000)	0.238 (0.000)	0.235 (0.001)	0.234 (0.001)	0.235 (0.000)	0.234 (0.001)
Profitability	0.560 (0.000)	0.573 (0.000)	0.573 (0.000)	0.550 (0.000)	0.549 (0.000)	0.591 (0.000)	0.569 (0.000)	0.570 (0.000)	0.579 (0.001)	0.569 (0.001)
Financial constraints	-0.014 (0.227)	-0.005 (0.593)	-0.005 (0.597)	-0.008 (0.324)	-0.020 (0.035)	-0.005 (0.608)	-0.006 (0.502)	-0.007 (0.486)	-0.000 (0.908)	-0.006 (0.475)
Risk	-0.111 (0.000)	-0.122 (0.000)	-0.123 (0.000)	-0.110 (0.000)	-0.083 (0.000)	-0.116 (0.000)	-0.111 (0.000)	-0.112 (0.000)	-0.100 (0.001)	-0.112 (0.000)
Size	0.017 (0.001)	0.018 (0.000)	0.018 (0.000)	0.017 (0.001)	0.033 (0.001)	0.019 (0.001)	0.019 (0.001)	0.018 (0.001)	0.018 (0.001)	0.018 (0.001)
Age	-0.012 (0.135)	-0.010 (0.222)	-0.010 (0.225)	-0.014 (0.115)	0.001 (0.943)	-0.010 (0.216)	-0.009 (0.259)	-0.010 (0.219)	-0.006 (0.197)	-0.010 (0.232)
R <sup>2</sup>	0.312	0.331	0.331	0.307	0.334	0.338	0.329	0.329	0.336	0.328
Sample size	56,559	40,560	40,685	56,787	47,659	42,224	47,659	47,659	24,620	47,659

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 earnings. Ownership concentration (OC) 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. Nuclear family is kinship limited to spouses and underage children. Otherwise, a family is defined as a group of owning members who are related by blood or marriage up to the fourth degree of kinship. Family firm is a firm where a family holds more than half the equity, No family membership does not assign personal stockholders to families, Largest in family has majority is 1 if the largest owner in the family has a majority, and Largest exceeds 2/3 is 1 if one owner has super majority. Herfindahl index, minority is the sum of squared minority ownership fractions, and Largest less second largest is the difference between the two largest equity stakes. Liquidity is cash holdings to assets, Profitability is operating profit after taxes over total assets (ROA), and Financial constraints is average sales growth over the past three years. Risk is the standard deviation of sales growth over the past seven but minimum 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. 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, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratio is winsorized at the 98% tail, while Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails. We report Fama MacBeth regressions for 2006-2010 with the adjusted R<sup>2</sup> and sample size from the pooled regression.

**Table 8: Robustness tests**

Independent variable	<u>Dividend normalized by</u>			<u>Financial constraints</u>		VI:	<u>Dividend payer status</u>			X:
	I: Cash flow	II: Sales	III: Assets	IV: Sales to assets	V: Interest coverage	Payout capacity	VII: Payers only	VIII: Pay or not pay	IX: No repurchase	Dividends taxed
Ownership concentration	-0.259 (0.000)	-0.007 (0.004)	-0.033 (0.000)	-0.178 (0.000)	-0.205 (0.000)	-0.178 (0.000)	-0.199 (0.028)	-0.319 (0.001)	-0.179 (0.000)	-0.142 (0.001)
Liquidity	0.363 (0.000)	0.031 (0.000)	0.059 (0.000)	0.235 (0.000)	0.205 (0.003)	0.233 (0.001)	0.113 (0.045)	2.015 (0.000)	0.220 (0.000)	0.256 (0.000)
Profitability	1.076 (0.000)	0.089 (0.000)	0.174 (0.000)	0.562 (0.000)	0.726 (0.000)	0.569 (0.000)	-0.147 (0.104)	7.244 (0.000)	0.578 (0.000)	0.560 (0.000)
Financial constraints	0.043 (0.070)	0.008 (0.001)	-0.004 (0.067)	-0.001 (0.582)	0.001 (0.002)	-0.006 (0.508)	-0.174 (0.000)	-0.248 (0.000)	-0.008 (0.493)	-0.013 (0.164)
Risk	-0.169 (0.001)	-0.003 (0.011)	-0.013 (0.001)	-0.112 (0.000)	-0.148 (0.001)	-0.112 (0.000)	0.051 (0.168)	-1.545 (0.000)	-0.123 (0.000)	-0.106 (0.000)
Size	0.025 (0.002)	0.0003 (0.095)	0.003 (0.001)	0.018 (0.000)	0.017 (0.001)	0.018 (0.000)	-0.044 (0.002)	0.513 (0.001)	0.018 (0.000)	0.018 (0.000)
Age	-0.020 (0.281)	0.003 (0.003)	-0.005 (0.014)	-0.00 (0.237)	-0.005 (0.616)	-0.010 (0.224)	-0.041 (0.023)	0.168 (0.000)	-0.010 (0.228)	-0.005 (0.462)
Retained earnings to total equity						0.002 (0.001)				
Direct personal ownership										-0.001 (0.024)
R <sup>2</sup>	0.233	0.299	0.358	0.327	0.348	0.329	0.070	0.324	0.331	0.334
Sample size	45,368	47,997	47,997	47,987	30,963	47,646	12,767	45,136	39,827	47,659

This table reports the estimates for modified versions of the base-case model (1) of the main text. The p-values are shown in parentheses. The dependent variable is dividends to earnings except in models I, II, III, and VIII. Interest coverage is earnings to interest payments, Payout capacity is total retained earnings to total equity (added as an independent variable to the base-case model), Payers only is the subsample of firms with positive dividends, Pay or not pay is a dummy variable which is 1 if the firm pays dividends and zero otherwise (logit model), while No repurchase is the subsample of firms that do not buy back their stock in the sample period. Dividends taxed adds the fraction of direct personal ownership in the firm to the base-case model. 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 to assets (ROA), and Financial constraints in the base-case model is the average sales growth over the past three years. Risk is the standard deviation of sales growth over the past seven but minimum 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, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratios are winsorized at the 98% tail, while Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails.. We control for industry effects (not reported). The table reports Fama-MacBeth regression estimates for 2006 to 2010 with the adjusted R<sup>2</sup> and sample size from the pooled regression.

**Table 9: Ownership concentration and new minority investments**

	Group 1: Largest owner has 50-60%	Group 2: Largest owner has 90-99%	Difference	Chi <sup>2</sup> test, p-value	Fisher's exact test, p-value
Additional minority investment	0.103	0.039	0.064	0.000	0.000
New minority owner	0.157	0.062	0.095	0.000	0.000
Composite incentive	0.248	0.099	0.149	0.000	0.000
Number of observations	536	484			

This table shows the proportion of firms with additional minority investment, new minority owners, or at least one of these two characteristics (composite incentive) across two ownership concentration groups (Group 1 and Group 2). The controlling stockholder in Group 1 has more than 50% but less than 60% of the firm's equity. In Group 2, the share of the largest stockholder is between 90% and 99%. The largest stockholder may be a financial firm, a foreigner or a family whose owning members are related by blood or marriage up to the fourth level of kinship. The share of the largest stockholder is computed as an average over 2006-2009. Additional minority investment is a dummy variable which is 1 if the share of the largest stockholder decreases between 2009 and 2010 and paid-in capital does not decrease. Otherwise, the variable is zero. New minority owner is a dummy variable which is 1 if a new minority investor enters the firm in 2010 and zero otherwise. Composite incentive is 1 if either the paid-in capital is stable or increases from 2009 to 2010, the controlling stake drops, or at least one new minority investor enters the firm. If not, the variable is zero. The table shows the average of these dummy variables across the sample firms, which are private limited liability firms with consistent accounting figures and positive sales, employment, and assets. We ignore subsidiaries, financials, single-owner firms, the smallest 5% firms by assets, sales, and employees, and firms where the government holds a majority stake. The payout ratio is winsorized at the 98% tail, while Liquidity, Profitability, Financial constraints, and Risk are winsorized at the 0.5% and 99.5% tails.

**Table 10: Reputation incentives for dividend payout**

Independent variable	I: Additional minority investment	II: New minority owner	III: Composite incentive
Ownership concentration (OC)	-0.304 (0.002)	-0.353 (0.000)	-0.307 (0.001)
OC · Additional minority investment	-1.317 (0.004)		
Additional minority investment	1.052 (0.001)		
OC · New minority owner		-0.510 (0.013)	
New minority owner		0.574 (0.041)	
OC · Composite incentive			-1.394 (0.000)
Composite incentive			1.098 (0.068)
R <sup>2</sup>	0.01	0.01	0.01
Sample size	3,640	3,640	3,640

Models I-III report the OLS regression estimates for (3) in the main text. The p-values are shown in parentheses. The dependent variable in every model is the average residual per firm from regressing dividends on the firm's liquidity, profitability, financial constraints, risk, size, age, and industry for 2006-2009. Ownership concentration is the firm's average largest equity stake in 2006-2009 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. Additional minority investment is a dummy variable which is 1 if the share of the largest stockholder decreases between 2009 and 2010 and paid-in capital does not decrease. Otherwise, the variable is zero. New minority owner is a dummy variable which is 1 if a new minority investor enters the firm in 2010 and zero otherwise. Composite incentive is 1 if either the paid-in capital is stable or increases from 2009 to 2010, the controlling stake drops, or at least one new minority investor enters the firm. If not, the variable is zero. 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, the smallest 5% firms by assets, sales or employees, and firms where the government holds a majority stake.

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The CCGR is organized by the Department of Financial Economics at BI Norwegian Business School in Oslo, Norway (<http://www.bi.edu>)

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