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Departament d'Economia de l'Empresa

Coordinador / Coordinator *Documents de treball:*

David Urbano
http://selene.uab.es/dep-economia-empresa/dt
e-mail: david.urbano@uab.es
Telèfon / Phone: +34 93 5814298
Fax: +34 93 5812555

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Departament d'Economia de l'Empresa
http://selene.uab.es/dep-economia-empresa/
Universitat Autònoma de Barcelona
Facultat de Ciències Econòmiques i Empresarials
Edifici B
08193 Bellaterra (Cerdanyola del Vallès), Spain
Tel. 93 5811209
Fax 93 5812555

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Stockholder Conflicts and Dividends

by*

Janis Berzins

Øyvind Bøhren

Bogdan Stacescu

Abstract

Conflicts of interest between majority and minority stockholders affect a large proportion of firms in any economy, but has received little attention in the empirical literature. We examine the link between the potential for such conflicts and the firm's payout policy on a large sample of Norwegian private firms with controlling stockholders and detailed ownership data. Our evidence shows that the stronger the potential conflict between the stockholders, the higher the proportion of earnings paid out as dividends. This tendency to reduce stockholder conflicts by dividend payout is more pronounced when the minority is diffuse and when a family's majority block is held by a single family member. We also find evidence that a minority-friendly payout policy is associated with higher future minority investment in the firm. These results are consistent with the notion that potential agency costs of ownership are mitigated by dividend policy when the majority stockholder benefits from not exploiting the minority.

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

JEL classification codes: G32, G35.

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1. Introduction

When stockholders provide the firm with funding, their main concern is a fair return on their investment. Conflicts within the firm can threaten to reduce that return. In particular, small stockholders may worry that large stockholders will exploit their control to reduce dividends and increase private benefits. The incentive to do that comes from the fact that the controlling stockholders can appropriate private benefits in their entirety, while dividends have to be shared proportionally with minority stockholders. 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 dividend policy and stockholder conflicts in a large sample of firms with concentrated ownership. These are the firms in which stockholder conflicts are likely to be particularly serious.

The inability of dispersed stockholders to prevent managers from expropriating their wealth is the core of the first (vertical) agency problem (Roe (1994); Villalonga and Amit (2006)). Most of the existing empirical literature has concentrated on this conflict between stockholders and managers (Demsetz and Lehn (1985); Demsetz and Villalonga (2001)). This focus is probably due to the lack of data for firms where the second agency problem is the more serious of the two. In public firms, which also have the more restrictive reporting requirements, the first agency problem dominates because stockholders are often dispersed. In contrast, high ownership concentration and even majority ownership is the rule in private firms of any size (Nagar, Petroni and Wolfenzon (2011)). For instance, the average holding of the largest stockholder is 30 % in Norwegian public firms and 78 % in private firms of similar size. Among large firms, there is a majority stockholder in 15 % of the public firms and in 69 % of the private (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 an important part of any economy.

The importance of corporate governance for investment and economic development has been increasingly recognized in recent years. The OECD, for instance, dedicates a special section in its Policy Framework for Investment to corporate governance, and recognizes “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), Oman and

Blume (2005)). Our study aims to improve the insight by studying in a novel way the conflict of interest that has received the least attention in the literature.

The inability to capture conflicts between majority and minority stockholders can be one explanation why earlier studies of dividend policy and firm value have produced puzzling results (La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000)). Moreover, the analysis of payout decisions can shed light on the relationship between stockholders by indicating whether the owners of controlling blocks behave opportunistically (the "outcome model") or if they instead try to establish a reputation for fair treatment of the minority (the "substitution model").

Our key to a valid test of these two alternative models of payout behavior is to focus on firms where one stockholder controls more than half of 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 minimal in our sample. In contrast, controlling stockholders can influence the seriousness of the second agency problem (large vs. small stockholders) by their decision to retain or pay out the firm's free cash flow.

The highest potential for agency costs is when the largest owner holds just above 50 % of the equity. At that point, 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 cash flow to finance private benefits is high because the cost is relatively low in terms of reduced dividends. As the ownership stake increases, however, the majority's share of lost dividends increases, and the incentive to divert cash for private benefits falls correspondingly. Thus, the closer the majority stake is to 100 %, the more the majority internalizes the cost of financing private benefits with the firm's resources.

The two alternative dividend theories have opposite predictions for how dividend payout varies with ownership concentration in majority-held firms. In the outcome model, majority stockholders will divert cash for private benefits and pay particularly low dividends when a large part of the payout would be received by minority owners. Thus, dividends increase with increasing ownership concentration in the outcome model. In contrast, the majority stockholder in the substitution model wants to create a reputation for not misusing his power,

particularly when the potential stockholder conflict is large (i.e., around 50 %). Therefore, the expected relationship between dividend payout and the holdings of the largest stockholder in the substitution model is negative or flat. Consequently, we study the relationship between payout and ownership concentration in order to distinguish between opportunistic behavior (the outcome model) and concerns for reputation (the substitution model).

Our evidence supports the substitution 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. This result holds regardless of whether we measure conflict potential by ownership concentration at the individual, nuclear family or extended family level.[1] The dividend is also higher when one member of the family holds a controlling stake. This suggests that the use of dividends to reduce potential agency costs is more pronounced when a majority block is controlled by just one person. Since a single individual may find it easier to extract private benefits than a group that needs to coordinate such behavior, the finding is in line with the substitution idea. Moreover, we find that the payout is higher when minority stakes are less concentrated and therefore weaker. All in all, the observed dividend policy is consistent with the substitution model also when we account for more detailed properties of the ownership structure.

These findings are independent of whether we measure payout by dividends per unit of earnings, cash flows, sales or assets. Moreover, they are insensitive to whether we use the propensity to pay dividends or the fraction of earnings paid. They are also similar whether we look at all firms or just those that pay dividends in a given year. The results are also robust to the use of panel data techniques to control for unobservable firm effects.

Our sample is particularly well suited for this analysis for three reasons. First, we use data from the population of all private limited liability firms in the Norwegian economy with a controlling stockholder. We therefore have a large and clean sample of firms with widely varying majority stakes. This feature increases the power of our test.

Second, our detailed ownership data allows us to assign stockholders to families according to alternative family definitions, to capture potential stockholder conflicts within the family, and

[1] Extended families are defined based on family relationships up to the fourth degree of kinship. Nuclear families include only parents and underage children.

to account for the composition of the minority holdings. Compared to just using a standard concentration measure such as the equity fraction of the largest individual owner, our richer set of ownership characteristics increases the ability to gain deeper and more detailed insight into how stockholder conflicts and dividend policy interact.

Third, our time period reflects a regulatory regime of neutral dividend taxation. Thus, 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 from the firm.[2] Similarly, the role of dividends as a signal about future expected cash flow is moderate, since every sample firm is private, majority-controlled, and has just seven stockholders on average. Thus, dividend policy may rather reflect a commitment device for fair treatment of minority stockholders rather than an earnings forecast from informed insiders to uninformed outsiders.

We control for a wide set of dividend determinants other than agency costs that can vary in the cross-section. Specifically, we account for the firm's profitability, liquidity, financial constraints, growth opportunities, risk, size, and age.

Our findings are in line with previous results suggesting that the private benefits of control tend to be fairly low in countries with Scandinavian legal origin. Nenova (2003) reports a control premium of around 5 % for Norway. This is similar to other Scandinavian and common law countries and below the average for German (11 %) and French (25 %) civil law countries. The low premium is confirmed by Dyck and Zingales (2004), who relate low premiums to media pressure and effective tax enforcement. Norway has the highest newspaper readership in their sample of 69 countries, and also has a high degree of tax compliance. Using a sample of mergers in Swedish firms, Holmen and Knopf (2004) find no evidence that controlling stockholders increase their wealth at the minority's expense. We go one step further and show that the low control premium seems justified by the observed payout policy, which tends to mitigate rather than increase the potential agency conflict between large and small stockholders.

[2] The tax reform that preceded the period considered in our sample was explicitly designed to ensure the equivalence of all cash flows to investors regardless of their formal status (Sørensen (2005, 2007)). This alleviates an important concern in our analysis, since the relatively small size and high ownership concentration of many private firms in our sample would make it easier to shift between cash outflows with different tax status.

Strong legal protection, good availability of information for minority stockholders, media pressure, and the intervention of tax authorities that limits private benefits may all reduce opportunistic behavior and hence rationalize our findings. Another possibility is, however, that majority stockholders anticipate the future need for additional minority equity investment. To reduce the cost of such future equity issues, the majority owner tries to establish a reputation for fairness. The carrot of easy access to capital thus balances the stick of a disciplined payout policy.

We find evidence of such reputation concerns in our data. The positive relationship between payout ratios and potential agency costs is driven by the firms that need financing of future investment the most. That is, firms pay more dividends out of their earnings now when they anticipate a need for more minority equity investment in the future. This also happens when the identity of minority stockholders changes, and when the overall share of minority stockholders increases.[3]

Our findings confirm, in a much later sample, the findings of Ostergaard and Smith (2011) in a setting where governance regulation was left to private contract. They study the period 1900-1910, which was just prior to the adoption of the first Norwegian corporate law. Analyzing corporate charters in great detail, they find evidence of stronger protection for minority stockholders in firms that most needed it, and that dividends and investor protection were substitutes.

Our study adds to the limited literature that links ownership structure and payout policy. Most of the extant studies have so far looked at owner types rather than owner conflicts. In particular, domestic and foreign owners of public firms seem to have different dividend preferences (Dahlquist and Robertsson (2001)). Institutional investors prefer dividend-paying companies, but not higher payout ratios (Grinstein and Michaely (2005)). Moreover, institutional investors are sensitive to their own stockholders' tax brackets when choosing among firms with different dividend policy (Desai and Jin (2011)). In a study that does look at potential conflicts between stockholders, Faccio, Lang and Young (2001) find evidence that

[3] In terms of attracting minority investment, high dividend payout can indicate both intrinsic firm quality and the reputation for fair treatment of small equity investors. We find evidence supporting both effects. There seems to be room for a reputation building effect even when we control for future profitability following high dividend payout.

pyramids are used to expropriate minority stockholders in East Asian countries, but less so in Western Europe. In contrast, we focus on firms which are not part of business groups and exploit instead the variability in the share of the controlling stockholder.

La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) have found that dividend payout is higher in countries with good protection of minority stockholders. This suggests that a certain degree of legal protection is needed to ensure that minority investors get a satisfactory share of a firm's cash flow. In contrast, we study dividend payout for a cross-section of firms within a country with strong legal stockholder rights and good enforcement.[4] We find that controlling stockholders do not restrict payout to minority stockholders. Thus, it appears that once basic requirements for the legal protection of stockholders are met, controlling stockholders find it useful to abstain from opportunistic behavior.

The contrast between these cross-country results and our findings does not seem to be simply due to a favorable institutional regime. Reputation effects seem to play a significant role in our Norwegian sample. This suggests that the importance of market (reputation) -based as opposed to institutions-based solutions to agency problems is an interesting area for future research.

The literature on payout policy in private firms is recent and very limited. Michaely and Roberts (forthcoming) use a large sample of private and public UK firms and find that the dividend payments of private firms are less smoothed than in public firms. 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). They conclude that "ownership structure and incentives play key roles in shaping dividend policies". Focusing on one of the main agency problems in private firms, we provide strong evidence of those roles in our study.[5]

[4]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.

[5] In terms of the classification of the companies in their study, we present a close-up image of firms that are similar to their socalled "wholly owned" firms.

The remaining part of our paper is organized as follows. The data set and the sample selection procedure are described in section 2, whereas section 3 establishes the base-case model, defines empirical proxies, and presents summary statistics. The statistical tests for the base-case are presented in section 4, while section 5 reports robustness tests. Section 6 examines the evidence on reputation effects, while section 7 concludes.

2. Data and sample selection

The data set is based on the population of firms with limited liability in Norway. 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 listing status, size, and industry. Failure to submit this information within 17 months after fiscal year-end triggers automatic 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.[6]

Our starting point is the population of private firms with limited liability.[7] To get a suitable sample for our purpose, we add the following sampling restrictions:

1. Financial firms are excluded to avoid the impact of their regulatory capital requirements and special accounting rules. We also exclude utility and public administration firms, and in general firms where the government is the majority stockholder.
2. We ignore subsidiaries in business groups, since dividends in such firms may primarily reflect intragroup transfers. Thus, dividends may be paid for different reasons than those governing dividends to non-parent stockholders, such as a concern for cash and risk management for the group as a whole. Moreover, expropriation within business groups has already been examined by Faccio, Lang and Young (2001) based on data from East Asia and Western Europe.[8]
3. To avoid non-operative firms, a sample firm must have positive sales, assets, and employment.

[6] Accounting, ownership, and board data are delivered by Experian. Data on family relationships are from Skattedirektoratet. All data items have been received in electronic form.

[7] 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. Adding the very few listed firms with concentrated ownership does not change our results.

[8] Unlike other countries (e.g. Sweden) business groups are not widespread in Norway. Neither are multiple stock classes (Ødegaard (2007)).

4. The firm must have consistent accounting statements. For instance, total assets need to equal total liabilities plus stockholders' equity.
5. Given the focus of our paper, the firm must have 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.[9] Since our data base includes all firms in the economy, we can base this majority filter on ultimate ownership.[10] Our concern is the total dividend the stockholder receives from a firm, whether directly or indirectly.
6. Single-owner firms are excluded, since such firms have no stockholder conflicts.[11] For similar reasons, we exclude the smallest 5 % of firms by assets, sales, and employment.

We are interested in the potential conflict between majority and minority stockholders, studying the extent to which controlling stockholders share free cash with the minority. Therefore, we use a sample of firms where we can clearly identify a controlling block. Our test is based on keeping control of the firm constant while exploiting the variation in cash flow rights. In order to keep this focus, we ignore blockholders unless they hold a majority stake. Since we want to avoid ambiguity concerning control, we also ignore potential block holder coalitions in the spirit of Laeven and Levine (2008). Instead, the coalition we deal with is the easily identifiable one based on family relationships.

In addition to agency costs, a firm's dividend policy may reflect other determinants, such as financial constraints, profitability, and taxes. Our regression models account for their influence by using a series of control variables, except for tax concerns, which are better handled by the sampling procedure. In particular, we focus on the dividend payments based on accounting statements for the period 2006-2009. This is shortly after a tax reform which eliminated a serious tax distortion of dividend policy.[12] The tax reform produced the same

[9] This would be a financial or a foreign investor. Since we do not know the identity of foreign investors, we can neither trace their ultimate ownership nor assign them to families.
[10] In the vast majority of cases, the ultimate owner in our sample is an individual or a family. Therefore the results from running our tests just on family firms are almost identical to those reported in the paper. Our main results also hold in the subsample of firms controlled by financial institutions or foreign investors.
[11] Including the fairly large number of single-owner firms does not alter our results. In fact, it accentuates the inverse relationship between the share of the controlling stockholder and dividend payout.
[12] The tax reform had its first effect on dividends for the accounting year 2005, which was paid in 2006. We do not use the numbers for 2005 (the first year after the reform) in our study, as we are interested in the post-reform equilibrium rather than in temporary tax reform effects. Dividend payments are quite high in the year prior to the

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

Applying these filters, we end up with a base sample of between 10,272 and 13,140 firms per year. Table 1 shows the details.

3. Model, empirical proxies, and summary statistics

The basic model is the following:

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

Our measure of dividend payout, *Div*, is 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 4. 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 5 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).

Ownership concentration, *Con* reflects the potential seriousness of stockholder conflicts in majority-controlled firms.[13] This is the key independent variable in our model. Since the potential agency cost decreases with *Con* in our sample, the predicted coefficient β_1 in (1) is positive under the outcome model and non-positive (negative or zero) under the substitution model.

We measure *Con* in the base case as the ultimate share held by the largest owning entity, which 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

tax reform and quite low the year after, indicating a shift of cash outflows to preempt the tax increase that was part of the reform. Nevertheless, including 2005 in our sample does not significantly change the results.

[13] We have also examined the possibility of a nonlinear relationship between concentration and payout by adding the square of the largest share. The added term is usually insignificant.

who all own stock in the firm.[14] 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. The more restricted nuclear family definition only includes parents and underage children. A final proxy for the stockholder conflict is the holding of the largest separate owning unit rather than the family. Unlike in the family-based definitions, every individual is considered a separate owner. We use this alternative measure to explore whether the family per se matters for how dividend policy is used to influence stockholder conflicts.

We also account for ownership dispersion inside the controlling family. Conflict potential within the family is measured by a dummy variable which is one if one family member has majority in the firm and zero otherwise. Similarly, we include measures for the relative power of minority stockholders. For instance, mote dispersed minority investors may find it more difficult to coordinate and monitor controlling stockholders. We use the Herfindahl index for minority stockholdings to capture the bargaining power of minority stockholders outside the controlling family. We expect that under the substitution model, dividends will be higher when there is a controlling family member and when minority concentration is low. The outcome model predicts the opposite.

Firms with more liquid assets, *Liq*, are more likely to pay higher dividends. They can make the payment at lower transaction costs than others, and they may also have more cash on hand than what is needed for operations, investment and financing (DeAngelo, DeAngelo and Stulz (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 return on assets, respectively.

Fin reflects constraints on the firm's ability to finance its cash outflow. This constraint may be more restrictive on dividend payments 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 the realized sales growth over the previous three years. The robustness tests explore the effect of alternatively measuring *Fin* by asset turnover and by the interest coverage ratio. Generating very high sales per unit of assets could indicate high

[14] As mentioned above, our findings are quite similar if we restrict the sample to firms where the majority stockholder is a family.

investment needs. Similarly, a low coverage ratio may reflect limited reserves available for dividend payout and possibly binding dividend covenants.

It has long been argued that firms pay dividends from what they consider their permanent earnings (Lintner (1956)). Therefore, firms with more risky (volatile) earnings will be less likely to pay high dividends. This is also consistent with the maturity hypothesis of Grullon, Michaely and Swaminathan (2002), which states that dividend increases are associated with reduced 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, Michaely and Swaminathan (2002) argue that risk decreases and operations mature as the firm becomes larger and older. This can lead to higher dividends. Fama and French (2001) find that large firms are more likely to pay dividends. Thus, we expect that dividends relate positively to firm size and firm age. These two variables, *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 dummy variables representing the main industries in our sample.

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., 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 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 about 20 % for the sample as a whole and 70 % for the payers. As in recent samples of listed US companies (Fama and French (2001)), the median firm does not pay dividends. The largest holding in a majority-owned firm is on average 60 % when every owner is a separate unit, 63 % if they are assigned to nuclear families, and 72 % when we use the wide family definition. There is one person in the family holding a majority stake in the firm in three out of four majority cases, and the average minority concentration outside the family is high as reflected by a Herfindahl index of 0.85. The dividend and

ownership variables are all stable over time. The control variables are also quite stable, possibly reflecting the muted impact of the recent global financial crisis on the Norwegian economy.

4. Statistical tests

Section 4.1 reports our findings for the base case, while section 4.2 analyzes the effect of modeling the potential stockholder conflict in alternative ways.

Table 3 shows that, except for some of the alternative ownership concentration proxies, the correlations between the independent variables are 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 around 0.5. Thus, it may be important to check whether the results are sensitive to the way stockholder conflicts are measured.

4.1 The base case

Table 4 shows the base-case estimates. The table reports 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) and on the Fama-MacBeth (FMB) approach. Since the same stability prevails in every subsequent analysis in this paper, we only report the Fama-Mac Beth estimates in the following. The annual estimates are available upon request.

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, financial firm or foreigner). Thus, firms tend to pay lower dividends as the share of the controlling stockholder increases. This result is at odds with the outcome model (opportunistic behavior), but consistent with the substitution model (non-opportunistic behavior). Hence, the data supports the notion that the controlling stockholder uses dividend policy to mitigate rather than amplify potential agency conflicts with fellow stockholders

inherent in the firm's ownership structure. Such behavior may be rationalized economically by the value of a reputation for loyalty and trust among minority stockholders. These qualities may be particularly important when the majority anticipates the need for future equity issues.

The relationship between 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 role of firm age and past sales growth is insignificant.

Hence, the relationship between ownership concentration and dividend payout is negative and statistically significant. In terms of economic significance, the effect is rather 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 5 % of its own standard deviation. The size of the decrease is not critical for our story, however, as even an insignificant relationship is consistent with the substitution model.

Overall, the base-case model shows that the relationship between the share of the dominant stockholder and dividend payout is inverse, statistically significant, and stable. This supports the substitution scenario, which predicts that the relationship between ownership concentration and dividends is negative or flat.

4.2. Stockholder conflicts

The base-case estimates in table 4 measure potential conflicts of interest between the stockholders by the largest equity fraction held by a family, financial institution or foreigner. However, our data allows for a deeper analysis of how ownership and dividends interact. As shown in table 5, our tests use alternative definitions of the controlling entity (models I and II), consider what happens to dividends when the majority faces a diffuse versus a concentrated minority outside the family (III), and analyze the impact of potential conflicts within the family (IV).

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. Model I uses a narrower measure based on nuclear family, which we define as parents and underage children. Table 3 showed that this

proxy is not very strongly related to the base case measure. Nevertheless, model I in table 5 documents that the narrow family definition produces estimates very close to those under the base case. Thus, the strictness of the family definition is not driving our results.

Model II goes further by measuring ownership concentration based on separate holdings rather than family holdings. Thus, whereas a family with five owning members represents one owner in table 4, it is five different owners in model II of table 5. Like for model I, however, the estimates show that the base-case results remain unchanged. Thus, the substitution model is consistent with the data also when large investors are not grouped into families. The family unit per se is not critical to our major result.

The ability of the largest stockholder to extract private benefits may depend not just on the majority's ownership stake, but also on the structure of the minority. If minority stockholders are fragmented, they may find it more difficult to monitor, coordinate, and put pressure on the majority to reduce their consumption of private benefits. Correspondingly, it may be more tempting for the majority to exploit the minority. We use the Herfindahl index to measure fragmentation among minority stockholders. The estimates reported in model III show that the coefficient of the minority concentration measure is negative and significant. Hence, the tendency to mitigate agency conflicts with dividend policy depends not just on the holdings of the largest owner, but also on the minority structure. The more diffuse the minority stockholders as a group, the higher the payout ratio they receive. Again, this supports the substitution model.

So far we have treated the family as one block. However, there may be family members who disagree on how the payout policy should be used to influence agency conflicts. We account for this possibility by a dummy variable which equals unity if an individual within the largest family owns at least 50 % of the firm's shares, and zero otherwise. The family member holding such a majority stake does not need to coordinate with others on the family to ensure a majority vote at the stockholder meeting. At the same time, however, this setting involves a high potential conflict with the remaining owners in the family. Thus, there is possibly a minority problem within the family.

The coefficient on the dummy variable in model IV is positive and significant. That is, for given ownership concentration, firms are more likely to pay out more of the earnings to

minority investors outside as well as inside the family when the largest owner is strong within the family. This is further evidence in support of the substitution model.

Summing up, we find that regardless of how we define the largest stockholder, the base case results from section 4.1 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. Having one person with a majority stake in the firm inside the family or being faced with a diffuse minority block increases the tendency to pay high dividends. Overall, these results are consistent with the hypothesis that dividends play a role in mitigating potential conflicts between stockholders that are created by the firm's ownership structure.

The Fama–MacBeth results are confirmed when we control for non-observable dividend determinants by running balanced panel regressions in table 6.[15] We run regressions with just firm effects as well as both firm and time effects. Not surprisingly, the panel results in the first two columns are almost identical. The next two columns show quite similar results using the alternative measures for ownership.[16]

5. Robustness

The findings in section 4 support the substitution model. However, one may worry that the diversion of cash for private benefits may induce the controlling stockholder to underreport the earnings in order to inflate the classic payout ratio. Such a practice would bias the classic payout ratio of section 4 upwards in firms where the actual stockholder conflict is made larger by the firm's dividend policy. Thus, our test may be biased against the outcome model. Therefore, as in La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000), we alternatively normalize dividends by cash flow, sales, and assets.

According to the three first columns of results in table 7, the negative relationship between ownership concentration and dividends from the base case is reproduced by each alternative payout measure. 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

[15] Since the ownership structure is quite persistent at the firm level, we choose random effects rather than fixed effects to control for firm-specific non-observables.
[16] Using alternative definitions of payout, as will be specified in section 5, again produces similar results.

materially bias our major result in the base case. The only difference occurs with some of the control variables. Whereas the firm's liquidity and profitability always have positive and significant coefficients, the picture is more mixed for the remaining control variables.

The proxy for financial constraints is not statistically significant in the base case. The fourth column of table 7 uses asset turnover (sales to assets) rather than past sales growth as a proxy. Firms that generate 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 4, financial constraints have no material effect on dividend payout.

We also use the interest coverage ratio as a measure of financial constraints. The results are shown in the fifth column of table 7. Firms whose earnings are low relative to their interest payments could be prevented from paying high dividends. This may be due to a bank covenant or simply the lack of cash. Our results indicate that higher interest coverage ratios are indeed associated with higher dividend payments. Nevertheless, the effect of the ownership concentration measure and that of the other controls does not change when we add the coverage ratio.

DeAngelo, DeAngelo and Stulz (2006) show that dividend payments are related to the proportion between total retained earnings and total equity. This is because more mature firms that are profitable and have lower growth opportunities should make higher cash distributions. We add their measure to our set of controls in model VI and find that while it has the anticipated positive sign, it does not alter results for the other variables.

Not paying dividends is as relevant as paying dividends 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 for payers and non-payers. Moreover, as we showed in table 2, most firms in our sample do not pay dividends in a given year. 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 fraction paid as the dependent variable.

Stock repurchases have become an important form of payout for large US firms (Grullon and Michaely (2002)), but were not allowed in Norway until 1999. Repurchases 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 stock repurchase activity. This restriction reduces our sample size only slightly. The estimates confirm the secondary role of repurchases for our firms. Results for the non-repurchasing subsample in model IX are basically identical to those using the full sample.

Overall, these robustness tests 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, and whether we predict the propensity to pay dividends or the amount paid.

6. Reputation effects

The results in the previous sections reflect a robust, statistically significant, and economically modest relationship between the potential for agency problems and firm payout. One possible explanation is that the institutional framework discourages opportunistic behavior. This is consistent with existing findings about stockholder protection in Nordic countries. For instance, rigorous media scrutiny can be an effective deterrent. Good tax enforcement may prevent the misreporting of accounting numbers and reduce the extraction of private benefits. Explicit legal protection of minority investors, combined with good enforcement, can have a similar effect.

Even with good institutions, however, the potential for agency problems may not be eliminated. There may still be some room for reputation concerns in payout policy. We may still observe that controlling stockholders who anticipate the need for sustained equity investment in their firm try to establish a record of fair treatment of minority investors. 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 test the relevance of the reputation channel. In particular, we first regress dividend payout ratios on the usual controls, which are liquidity, profitability, financial constraints, risk, firm size, age and industry:

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

We run cross-sectional regressions of (2) for the first three years (2006-2008) in our sample. Next, we collect residuals. i.e., the unexplained part of dividend payout, and take the average residual for each firm over the three years. This residual payout is then regressed on variables that include reputation concerns measured in the final sample year (2009):

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

where Rep_{it} is a measure of reputation incentives. We use the following proxies:

- The issuance of new equity, measured by a dummy variable equal to 1 if the relative increase in paid-in capital is above 20 % and zero otherwise.
- The change in the identity of minority stockholders. New minority investors might need to see a satisfactory dividend track record before they are willing to invest in the firm. We use a dummy variable that is equal to 1 if a new minority investor enters the firm in 2009 and zero otherwise.
- The decrease in the stake of the largest stockholder. We use a dummy variable equal to 1 if the stake of the largest stockholder is lower in 2009 than in 2008 and zero otherwise.

The results are presented in table 8.[17] We find that the coefficient on ownership concentration taken separately is not significantly different from zero. However, the interaction term with reputation concerns is always negative and is significant when we use the indicator for increases in equity and the one for decreased stake for the largest stockholder.

[17] The results in table 8 are based on a sample where the identity of the largest stockholder (measured as a nuclear family) is the same in 2009 as in 2008. This gives us a cleaner sample, since we avoid some the possible overlap with signaling concerns in dividend policy. It is also closer to the idea of long-run reputation. Using the larger sample without this particular restriction does not change our results.

The findings imply that the strong substitution-type relationship between dividend payout and the share of the controlling owner is more likely in firms with reputation incentives. Because these firms plan to get additional minority investment, they follow a dividend policy which is minority-friendly rather than opportunistic.

Of course, a high dividend paid by firms which are active in equity markets could signal intrinsic firm quality as well as a reputation for good treatment of minority investors.[18] The two are not mutually exclusive. We examine how they influence payout in model IV of Table 8. We regress the same residual dividends on ex post profitability (a proxy for signaling), the indicator for the decreased stake of the majority stockholder (a proxy for the need for reputation), the interaction between the two, and the lagged ownership concentration. Both ex post profitability and the decreased stake of the majority stockholder associate positively with payout. The lagged ownership concentration is insignificantly different from zero. This indicates that even when we control for the need for signaling and the need for reputation in light of high future minority participation, there is still no evidence of opportunistic behavior.

Summing up the results in this section, we find evidence of majority stockholder reputation effects on dividend policy even in a country with strong minority protection. Thus, legal rules and reputation concerns are not necessarily substitutes. This conclusion, which is consistent with the substitution model, is interesting, given the well-known cross-country results in favor of the outcome model. Our findings also point to the need for future research in order to better understand the role of formal versus informal protection of minority investors.

7. Conclusions

The relationship between stockholder conflicts and dividend policy within a given legal regime has barely been addressed in the empirical literature. Our paper analyzes a large sample of private firms with majority owners and finds that the higher the potential for stockholder conflicts as reflected in the ownership structure, the more of the firm's earnings is paid out as dividends. This holds regardless of how we measure conflict potential and

[18] Signaling models (for instance Bhattacharya (1979)) suggest that dividends could be costly signals of firm quality. Moreover, many models link higher share turnover with higher signaling incentives. The mechanism based on the different tax treatment of dividends and capital gains (John and Williams (1985), Bernheim and Wantz (1995), Allen et al. (2000)) is not likely to be at work in our sample. Still, there may well be room for dividend signaling.

dividend payout. Thus, majority stockholders use dividends to reduce agency costs rather than to increase them by opportunistic behavior.

These findings contrast with evidence from a comparative analysis of dividend policy across different legal regimes (La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000)). That study supports the prediction that majority owners behave opportunistically when the law allows for it. In contrast, our findings suggest that within a legal regime where minority stockholders are well protected by the regulator, the majority finds it in their own interest to voluntarily abstain from opportunistic behavior and instead use dividend policy to reduce the potential for agency conflicts.

The incentive for such behavior may be the need to issue new equity to minority investors in the future. Our analysis does indeed find that a less opportunistic dividend policy is associated with higher minority equity investment in the future. Reputation incentives may therefore complement a minority-friendly institutional framework. Our findings point to the need for future research on the role of formal and informal protection of minority investors.

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Table 1: Population, filters, and sample

Year	Sample, payers	Sample, all	Small size	Single owner	Government owned	No majority owner	Inconsistent data	No activity	Subsidiary	Financial firm	Population
2006	3.734	13.140	13.140	17.375	50.067	50.551	72.300	73.869	123 836	157 890	180.543
2007	3.387	10.086	10.086	12.608	49.382	49.842	68.680	70.131	130 373	167.539	191.827
2008	2.611	10.121	10.121	12.644	50.419	50.897	69.844	71.387	134 171	172.030	197.813
2009	2.317	10.272	10.272	12.809	51.773	51.773	72.055	73.583	136.473	173.574	200.038

This table shows the effect of applying successive sampling filters. We start from the large group of limited liability private companies 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 only include firms with a majority stockholder (No majority owner). The owner can also be a family consisting of several owning members, but we exclude firms where the government holds the majority (Government owned) and firms with just one stockholder (Single owner). We filter out the smallest 5% of firms in terms of assets, sales or employees (Small size) to arrive at the 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		All		Payers	
Dividend propensity	0.253	(0.000)	0.310	(0.000)	0.251	(0.000)	0.243	(0.000)	0.262	(0.000)	1.000	(1.000)
Dividends to earnings	0.188	(0.000)	0.223	(0.000)	0.171	(0.000)	0.181	(0.000)	0.189	(0.000)	0.729	(0.747)
Dividends to sales	0.018	(0.000)	0.021	(0.000)	0.016	(0.000)	0.015	(0.000)	0.018	(0.000)	0.067	(0.049)
Dividends to cash flow	0.278	(0.000)	0.343	(0.000)	0.245	(0.000)	0.215	(0.000)	0.268	(0.000)	1.220	(0.876)
Dividends to assets	0.036	(0.000)	0.044	(0.000)	0.034	(0.000)	0.031	(0.000)	0.036	(0.000)	0.137	(0.110)
Holding of largest owner	0.632	(0.640)	0.603	(0.600)	0.606	(0.600)	0.606	(0.600)	0.613	(0.600)	0.605	(0.600)
Holding of largest extended family	0.703	(0.670)	0.724	(0.700)	0.728	(0.700)	0.725	(0.700)	0.719	(0.692)	0.711	(0.680)
Holding of largest nuclear family	0.643	(0.650)	0.623	(0.619)	0.627	(0.620)	0.626	(0.618)	0.630	(0.625)	0.621	(0.607)
Majority owner in largest family	0.828	(1.000)	0.739	(1.000)	0.739	(1.000)	0.739	(1.000)	0.765	(1.000)	0.764	(1.000)
Minority concentration	0.876	(1.000)	0.851	(1.000)	0.842	(1.000)	0.836	(1.000)	0.853	(1.000)	0.839	(1.000)
Liquidity	0.239	(0.174)	0.245	(0.186)	0.243	(0.174)	0.250	(0.187)	0.244	(0.181)	0.329	(0.303)
Profitability	0.092	(0.086)	0.101	(0.099)	0.075	(0.079)	0.061	(0.064)	0.083	(0.082)	0.193	(0.174)
Financial constraints	0.121	(0.085)	0.136	(0.099)	0.140	(0.096)	0.095	(0.063)	0.125	(0.086)	0.146	(0.109)
Risk	0.301	(0.205)	0.302	(0.210)	0.300	(0.209)	0.300	(0.211)	0.305	(0.212)	0.260	(0.184)
Size	9.031	(8.938)	9.207	(9.096)	9.246	(9.114)	9.150	(9.022)	9.152	(8.382)	9.542	(9.469)
Age	2.652	(2.639)	2.661	(2.639)	2.679	(2.639)	2.699	(2.708)	2.671	(2.639)	2.730	(2.773)
Average sample size	10.902		8.982		8.917		8.473		37.064		9.836	

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). Largest extended family is the aggregate equity fraction of the largest family based on blood or marriage. Largest nuclear family is a unit where kinship is limited to spouses and underage children. Majority owner is 1 if the largest extended family has an owner with share above 50% and zero otherwise. Minority concentration is the Herfindahl index for all but the largest owner, where an extended family counts as one owner. Liquidity is cash holdings to 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 log of the number of years since the firm was founded. 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, the smallest 5% firms by assets, sales or employees, and firms where the government holds a majority stake. The payout ratios are winsorized at 0% and 98%. Liquidity, Profitability, Financial constraints, and Risk are winsorized at 0.5% and 99.5%.

Table 3: Correlations

	Dividends to earnings	Holding of largest owner	Holding of largest family	Holding of largest nuclear family	Majority owner in largest family	Minority concentration	Liquidity	Profitability	Financial constraints	Risk	Size
Holding of largest owner	-0.02										
Holding of largest family	-0.05	0.49									
Holding of largest nuclear family	-0.02	0.93	0.54								
Majority owner in largest family	0.02	0.73	-0.01	0.63							
Minority concentration	-0.01	0.13	0.27	0.14	-0.01						
Liquidity	0.23	-0.01	-0.05	0.01	0.03	0.05					
Profitability	0.34	-0.01	-0.02	-0.01	0.00	0.02	0.28				
Financial constraints	0.04	-0.03	-0.03	-0.04	-0.01	-0.06	-0.01	0.14			
Risk	-0.08	0.02	-0.04	0.02	0.03	-0.04	-0.03	-0.10	0.31		
Size	0.10	-0.05	0.02	-0.07	-0.05	-0.15	-0.20	0.14	0.02	0.00	
Age	0.03	-0.01	0.12	-0.01	-0.07	0.02	-0.04	0.03	-0.19	-0.29	0.13

This table shows the Pearson bivariate coefficients of correlation for key variables used in the empirical analysis. All variables and the sample are defined in table 2.

Table 4: The base-case regression

Independent variable	2006		2007		2008		2009		All		FMB	
Ownership concentration	-0.154	(0.000)	-0.156	(0.000)	-0.135	(0.000)	-0.140	(0.000)	-0.145	(0.000)	-0.146	(0.000)
Liquidity	0.194	(0.000)	0.233	(0.000)	0.277	(0.000)	0.321	(0.000)	0.256	(0.000)	0.258	(0.003)
Profitability	0.612	(0.000)	0.704	(0.000)	0.500	(0.000)	0.605	(0.000)	0.600	(0.000)	0.605	(0.001)
Financial constraints	-0.022	(0.198)	-0.008	(0.669)	-0.021	(0.207)	-0.022	(0.260)	-0.017	(0.057)	-0.018	(0.012)
Risk	-0.087	(0.000)	-0.095	(0.000)	-0.055	(0.000)	-0.046	(0.002)	-0.074	(0.000)	-0.071	(0.009)
Size	0.030	(0.000)	0.031	(0.000)	0.019	(0.000)	0.015	(0.000)	0.025	(0.000)	0.024	(0.009)
Age	-0.019	(0.001)	-0.016	(0.010)	-0.001	(0.847)	0.013	(0.040)	-0.008	(0.011)	-0.006	(0.489)
R^2	0.309		0.379		0.336		0.323		0.334		0.334	
Sample size	10.837		8.904		8.780		8.331		36.852		38.152	

This table reports the estimates for the base-case OLS regressions as specified in 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 an extended family with owning members related by blood or marriage. 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 limited liability 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. The payout ratio is winsorized at 0% and 98%. Liquidity, Profitability, Financial constraints, and Risk are winsorized at 0.5% and 99.5%. The table reports the estimates of the year-by-year regressions, the pooled sample regression (All), and the Fama MacBeth (FMB) regressions with the adjusted R^2 and the sample size from the pooled regression.

Table 5: Accounting for multiple owner characteristics

	Model							
Independent variable	I		II		III		IV	
Ownership concentration					-0.118	(0.002)	-0.156	(0.000)
Ownership concentration nuclear	-0.131	(0.002)						
Ownership concentration individual			-0.135	(0.001)				
Liquidity	0.262	(0.002)	0.267	(0.002)	0.263	(0.002)	0.247	(0.006)
Profitability	0.600	(0.001)	0.597	(0.001)	0.626	(0.001)	0.610	(0.001)
Financial constraints	-0.022	(0.023)	-0.022	(0.035)	-0.021	(0.053)	-0.027	(0.024)
Risk	-0.072	(0.003)	-0.069	(0.004)	-0.072	(0.010)	-0.080	(0.014)
Size	0.024	(0.010)	0.024	(0.007)	0.025	(0.010)	0.026	(0.007)
Age	-0.010	(0.196)	-0.011	(0.161)	-0.008	(0.368)	-0.009	(0.356)
Minority concentration					-0.025	(0.000)		
Majority owner in largest family							0.006	(0.015)
R^2	0.334		0.335		0.343		0.342	
Sample size	29.884		28.281		32.511		33.530	

This table reports the OLS regression estimates for extended versions 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 an extended family with owning members related by blood or marriage. Ownership concentration nuclear (model I) uses the equity fraction of the largest family unit where kinship is limited to spouses and underage children. Ownership concentration individual (II) is the equity fraction held by the largest individual stockholder (financial firm, foreigner, or native person). Minority concentration (III) is the Herfindahl index for all but the largest owner, where an extended family counts as one owner. Majority owner in largest family (IV) is 1 if the largest extended family has an owner with a share above 50% and zero otherwise. 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 sales in million NOK, and Age is the log of the number of years since the firm was founded. 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, the smallest 5% firms by assets, sales or employees, and firms where the government holds a majority stake. The payout ratio is winsorized at 0% and 98%. Liquidity, Profitability, Financial constraints, and Risk are winsorized at 0.5% and 99.5%. The table reports Fama MacBeth regressions for 2006 to 2009 with the adjusted R^2 and sample size from the pooled regression.

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

	Model			
Independent variable	I	II	III	IV
Intercept	-0.111	-0.162	-0.144	-0.148
	(0.001)	(0.000)	(0.003)	(0.003)
Ownership concentration	-0.155	-0.116	-0.085	-0.081
	(0.000)	(0.000)	(0.005)	(0.010)
Liquidity	0.306	0.308	0.297	0.301
	(0.000)	(0.000)	(0.000)	(0.000)
Profitability	0.454	0.439	0.463	0.452
	(0.000)	(0.000)	(0.000)	(0.000)
Financial constraints	0.019	0.017	0.019	0.018
	(0.343)	(0.378)	(0.393)	(0.429)
Risk	-0.040	-0.043	-0.036	-0.035
	(0.023)	(0.016)	(0.063)	(0.080)
Size	0.038	0.038	0.035	0.035
	(0.000)	(0.000)	(0.000)	(0.000)
Age	-0.002	-0.001	-0.004	-0.005
	(0.766)	(0.861)	(0.636)	(0.590)
R^2	0.086	0.083	0.085	0.083
Sample size	3.735	3.735	3.064	2.902

This table reports the random effects regression estimates for the basic model (1) in the main text. The p-values are shown in parentheses. The dependent variable in Model I and Model II is cash dividends divided by earnings. Model I uses firm random effects, while Model II uses both firm and year random effects. Model III uses the nuclear family definition for ownership concentration, while model IV uses individual shareholdings. Ownership concentration is the largest equity stake in the firm held by a financial firm, a foreigner, or an extended family with owning members related by blood or marriage. Liquidity is cash holdings to assets, Profitability is operating profit after taxes to assets (ROA), and Financial constraints is measured as average sales growth over the past three years. Risk is the standard deviation of growth of sales 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 limited liability 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. The payout ratio is winsorized at 0% and 98%. Liquidity, Profitability, Financial constraints, and Risk are winsorized at 0.5% and 99.5%.

Table 7: Robustness tests

	Model								
Independent variable	I	II	III	IV	V	VI	VII	VIII	IX
Intercept							1.654	-5.781	
							(0.002)	(0.000)	
Ownership concentration	-0.198	-0.007	-0.026	-0.144	-0.174	-0.145	-0.236	-1.665	-0.148
	(0.006)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.052)	(0.005)	(0.000)
Liquidity	0.394	0.028	0.065	0.258	0.216	0.258	0.097	1.512	0.257
	(0.003)	(0.001)	(0.001)	(0.002)	(0.009)	(0.003)	(0.037)	(0.003)	(0.003)
Profitability	1.151	0.087	0.183	0.599	0.835	0.604	-0.164	7.531	0.608
	(0.004)	(0.003)	(0.002)	(0.001)	(0.000)	(0.001)	(0.248)	(0.000)	(0.001)
Financial constraints	0.032	0.004	-0.004			-0.019	-0.421	0.215	-0.018
	(0.013)	(0.076)	(0.002)			(0.091)	(0.000)	(0.026)	(0.033)
Risk	-0.103	0.000	-0.004	-0.073	-0.108	-0.070	0.253	-0.858	-0.072
	(0.011)	(0.992)	(0.079)	(0.009)	(0.004)	(0.010)	(0.047)	(0.000)	(0.009)
Size	0.032	0.000	0.004	0.023	0.023	0.024	0.032	0.348	0.024
	(0.024)	(0.133)	(0.009)	(0.015)	(0.018)	(0.010)	(0.005)	(0.008)	(0.010)
Age	-0.020	0.002	0.003	-0.004	-0.002	-0.006	0.042	0.248	-0.005
	(0.276)	(0.016)	(0.122)	(0.635)	(0.878)	(0.489)	(0.277)	(0.007)	(0.521)
Financial constraints (S/A)				-0.001					
				(0.570)					
Financial constraints (ICR)					0.001				
					(0.029)				
Retained earnings to total equity						0.005			
						(0.001)			
R^2	0.235	0.323	0.366	0.333	0.34	0.33	0.072		0.334
Sample size	35,039	37,049	37,054	37,064	25,188	36,843	7,733	37,273	36,119

This table reports the regression estimates for modified versions of model (1) in the main text. The p-values are shown in parentheses. The dependent variable is dividends to cash flow in model I, Dividends to sales in model II, and Dividends to assets in model III. Models IV-VII and model IX use dividends to earnings as the dependent variable. Sales to assets (S/A) and the interest coverage ratio (ICR) are alternative proxies for financial constraints in models IV and V, respectively. Model XI adds the ratio between retained earnings and total equity to the base-case model (1). Model VII is the base case model for the subsample of firms with positive dividends, whereas model VIII is a logit regression for the propensity to pay. Model IX shows the results for firms that are not repurchasing shares during the sample period.Ownership concentration is the largest equity stake in the firm held by a financial firm, a foreigner, or an extended family with owning members related by blood or marriage. Liquidity is cash holdings to assets, Profitability is operating profit after taxes to assets (ROA), and Financial constraints is measured as average sales growth over the past three years. Risk is the standard deviation of growth of sales 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 limited liability 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. The payout ratio is winsorized at 0% and 98%. Liquidity, Profitability, Financial constraints, and Risk are winsorized at 0.5% and 99.5%. The table reports Fama-MacBeth regressions for 2006 to 2009 with the adjusted R^2 and sample size from the pooled regression.

Table 8: Reputation

	Model			
Independent variable	I	II	III	IV
Intercept	-0.015	0.092	0.073	0.036
	(0.821)	(0.172)	(0.279)	(0.610)
Ownership concentration (OC)	0.001	0.001	0.001	
	(0.379)	(0.334)	(0.606)	
OC * Equity issue	-0.002			
	(0.068)			
OC * Minority change		-0.001		
		(0.956)		
OC * Lower majority			-0.002	
			(0.002)	
Lower majority				0.181
				(0.001)
Return on equity (ROE)				0.015
				(0.000)
Lower majority * ROE				0.014
				(0.076)
Lagged ownership concentration				0.000
				(0.978)
R^2	0.01	0.01	0.01	0.01
N	3.805	3.805	3.805	3.805

The table reports the OLS regression estimates for model (3) in the main text. The p-values are shown in parentheses. The dependent variable in all models is the average residual from regressing dividend payout on the measures of liquidity, profitability, financial constraints, risk, size and age of the firm for the years 2006 to 2008. Ownership concentration is the largest equity stake in the firm held by a financial firm, a foreigner, or a nuclear family where individual owners are related by blood or marriage. Equity issue is a dummy variable equal to 1 if the change in equity is above 20% and zero otherwise, where change in equity is paid-in capital in 2009 compared to 2008, normalized by total equity in 2009. Minority change is a dummy variable equal to 1 if there has been a change in the identity of minority shareholders in 2009 compared to 2008 and zero otherwise. Lower majority is a dummy variable equal to 1 if the share of the largest stockholder is lower in 2009 than in 2008. ROE is return on equity in 2009, and lagged ownership concentration is the largest stockholder's entity fraction in 2008. 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, the smallest 5% firms by assets, sales or employees, and firms where the government holds a majority stake.

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