Journal of Banking & Finance 36 (2012) 2852–2864

Contents lists available at SciVerse ScienceDirect

Journal of Banking & Finance

journal homepage: www.elsevier.com/locate/jbf

Stakeholder conflicts and dividend policy

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ARTICLE INFO

Article history:
Received 18 January 2011
Accepted 25 June 2012
Available online 1 July 2012

JEL classification:
G34
G35

Keywords:
Organizational form
Corporate governance
Stakeholders
Dividends
Banks

ABSTRACT

This paper compares the dividend policy of owner-controlled firms with that of firms where the owners are a minority relative to non-owner employees, customers, and community citizens. We find that regardless of whether owners or non-owners control the firm, the strong stakeholder uses the dividend payout decision to mitigate rather than to intensify the conflict of interest with the weak stakeholder. Hence, the higher the potential agency cost as reflected in the firm's stakeholder structure, the more the actual agency cost is reduced by the strong stakeholder's dividend payout decision. These findings are consistent with a dividend policy in which opportunistic power abuse in stakeholder conflicts is discouraged by costly consequences for the abuser at a later stage. Indirect evidence supports this interpretation.

1. Introduction

Stockholders invest in firms to obtain returns on their money. Conflicts of interest between the stakeholders might reduce these returns. For instance, the stockholders might worry that the employees use the firm's resources to produce private benefits at the stockholders' expense. If this agency problem appears threatening to the stockholders, they might hesitate to put more money at the firm's disposal. This reluctance to finance the firm might adversely affect the real economy by increasing the firm's cost of capital and decreasing its investment in labor and productive assets (Jensen and Meckling, 1976).

Our paper analyzes empirically how dividend policy influences the seriousness of this conflict of interest, focusing on the relationship between the firm's owners (the stockholders) and its non-owners (the employees, customers, and community citizens). In particular, we study whether the dividend payout decision is used to mitigate or to intensify the agency problem inherent in the firm's stakeholder structure. We find that firms controlled by the non-owner stakeholders pay out significantly more of their earnings than firms controlled by the owners do. This result supports the notion that reducing agency costs through lowering free cash flow is an important concern when non-owner stakeholders have the power to determine the firm's dividend policy.

Conflicts of interest in a firm might be framed as tensions between insiders and outsiders. The firm's resources are controlled by the insiders, who might lack the incentives to abstain from making self-serving decisions at the outsiders' expense (Jensen and Meckling, 1976; La Porta et al., 1997). We study an unusual combination of insiders and outsiders. The insiders in one of the two firm types we analyze are neither the owners, the majority owners, nor the CEO, who have received almost all the attention in existing research (Becht et al., 2003). Rather, the majority control rights are held by the employees, customers, and community citizens. In contrast, the second firm type in our sample represents a classic situation where the insiders are owners. Finally, and importantly, regulation ensures that there is no insider–outsider issue between majority and minority owners in either firm type.

This setting allows us to study a clean and unexplored setting where dividend policy can be used to influence only one particular insider–outsider conflict, and one that is not classic in nature. There is no majority–minority issue among the owners, the owners might be both insiders and outsiders, and the non-owner stakeholders constitute a heterogeneous set whose preferences might deviate strongly from those of the stockholders. The key question is how the insiders in these firms use dividend policy to handle the potential conflict of interest with the outsiders. We address this question by testing the two existing theories of how dividends

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http://dx.doi.org/10.1016/j.jbankfin.2012.06.007

interact with stakeholder conflicts. These theories are the outcome model and the substitute model (La Porta et al., 2000; Cheffins, 2006; Ostergaard and Smith, 2011).

The outcome model predicts that when given the chance, non-owner stakeholders will opportunistically use the dividend policy to capture private benefits. Therefore, firms controlled by non-owner insiders will pay lower dividends per unit of earnings and allocate correspondingly more to private benefits for the non-owners than firms controlled by owners will. In contrast, the substitute model argues that non-owners will benefit later if they choose a dividend policy now that reduces potential conflicts with the owners. Our finding that dividend payout increases with decreasing owner control supports the substitute model, which posits that owner control and dividend payout are alternative ways of disciplining the firm's non-owners. That is, close monitoring and low free cash flow are substitutes.

Existing studies of agency problems and dividend policy do not directly test the predictions of the two competing dividend theories. Moreover, they tend to capture a wide variety of insider–outsider conflicts, regressing the firm's dividend payout on its ownership concentration in samples where ownership concentration varies widely in the cross section (Rozeff, 1982; Moh'd et al., 1995; Khan, 2006; Renneboog and Szilagyi, 2006; Renneboog and Trojanowski, 2007).[1] We test the two dividend theories directly, and we study an environment where potential conflicts between large and small owners are negligible because a binding legal constraint makes ownership concentration low in every firm. In contrast, the potential seriousness of the conflict between owners and non-owners varies more than usual. This variation is not driven by cross-sectional differences in ownership concentration, however, but rather by differences in organizational form, which allocate majority control to the owners in one firm type and to non-owners in the other. Thus, ownership concentration is low in every sample firm, and the owners are strong relative to the non-owners in one firm type and weak in the other.

Our sample is the population of listed Norwegian commercial banks and savings banks. Commercial banks are regular stock companies that are controlled by their stockholders. In contrast, the stockholders of a savings bank hold only one fourth of the control rights. The remaining three quarters of the control rights are split equally between the employees, the depositors, and community citizens. The residual cash-flow rights are held by the stockholders in both bank types.

Since non-owners are the insiders in the savings bank, they determine its dividend policy. When making this decision, they know that their interests might be in conflict with those of the owners (the outsiders). For instance, the employees on the board might want less monitoring of their effort and more moderate restructuring than the owners might want. Depositors might vote for higher interest rates and lower risk on their savings than the owners might vote for. The community representatives might be more negative to reduced employment and more positive to cheap lending to local businesses than the owners might be.

Given this lack of interest alignment between owners and non-owners, the governance structure might also make it particularly easy for the CEOs of savings banks to make decisions that are better aligned with their interests than with those of the owners. For instance, the CEO might be less aggressive than owners might in wage negotiations with employees, more lenient than owners might when downsizing operations, and more interested than owners might in financing growth with retained earnings rather than with new debt. Such a tendency to pursue a so-called quiet life has been documented as a CEO response to reduced owner pressure in US firms (Bertrand and Mullainathan, 2003).

Hence, non-owner stakeholders can only informally influence the decisions of the owner-controlled commercial banks. In contrast, they have formal control in the savings banks, where the owners constitute a minority. The potential agency cost in the savings banks is due to conflicts of interest between the owners as outsiders and the non-owner stakeholders (including management) as insiders. In either organizational form, no single owner or alliance of owners can own or vote for more than one tenth of the equity. Both organizational forms face the same product market opportunities and the same regulatory constraints.

We test the predictions of the two competing dividend models for how the potential insider–outsider conflict interacts with the bank's dividend policy. The outcome model predicts that commercial banks will pay higher dividends per unit of earnings than savings banks will. This happens because the owners of commercial banks will use their control to reduce the retained earnings and hence the free cash flow that is under the non-owner stakeholders' discretion. Such a dividend policy will offer fewer opportunities for non-owners to finance perks for managers, to overprotect employees, to underprice output to customers, or to sponsor community projects. Correspondingly, the outcome model predicts that the non-owner stakeholders in savings banks will myopically use their control to ensure financing of their private benefits by paying out low dividends to the owners.

The substitute model assumes more sophisticated stakeholders and makes a prediction opposite to that made by the outcome model: Commercial banks will pay lower dividends than savings banks will. This happens because the owners of commercial banks will use their control rights to influence the firm as directors in the boardroom and as discussion partners with management rather than by bluntly blocking management's access to a high free cash flow. Similarly, the substitute model posits that the non-owners who control the savings banks will benefit later by using their power to pay high dividends now. This happens because a high dividend reduces the owners' fear of subsequent expropriation. Thus, the dividend payout decision is disciplined by potentially adverse effects for the insider at a later stage. For instance, paying out high dividends might be a way for growing firms to build reputation for subsequent equity issues (La Porta et al., 2000; Cheffins, 2006). Paying out high dividends might also reduce information asymmetry costs for small firms in particular by forcing them more often to the issue market (Easterbrook, 1984). Moreover, management's compensation in savings banks might fall and their career opportunities might deteriorate if the stock price drops after a shift towards retaining a higher percentage of earnings. This all suggests that the non-owner-controlled savings bank with high growth and small size will pay particularly high dividends.

Our major finding is that savings banks pay significantly higher dividends than commercial banks do. Also, more is paid out when the bank is small and grows fast. These results survive when we control for dividend persistence, financial leverage, stock liquidity, and for unobservable firm and industry effects. The findings are also robust to using alternative data sets and econometric techniques, to peculiarities of the ownership structure, and to alternative dividend payout measures.

[1] Higher ownership concentration reduces the potential conflict between owners and non-owners, while increasing the conflict between large and small owners. The former agency problem is considered the more serious in common law countries, whereas the latter is thought to dominate under civil law, where ownership concentration tends to be higher (Shleifer and Vishny, 1997). The relationship between owners and non-owners has traditionally been analyzed as conflicts of interest between owners and the CEO or between owners and creditors (Becht et al., 2003). There is hardly any study on conflicts between owners and stakeholders such as employees (Fauver and Fuerst (2006) is a rare exception), customers, and society at large. The empirical literature on the conflict between large and small owners has focused on the majority stockholder's expropriation of the minority (Faccio et al., 2001).

This evidence is consistent with the substitute model of how dividend payments and stakeholder conflicts interact. It is inconsistent with the outcome model. The findings support the notion that the strong stakeholder (the insider) uses the dividend policy to reduce the agency conflict with the weak stakeholder (the outsider), as such behavior serves the best interest of the strong stakeholder in the long run. This interpretation holds regardless of whether the strong stakeholder is the owners or the non-owners.

Our findings are in line with those of Faccio et al. (2001) and John and Knyazeva (2006). Using samples that are limited to regular stock companies where the voting rights are held exclusively by the owners, both report evidence that we interpret to be in favor of the substitute model. In particular, Faccio et al. (2001) find that dividends in corporate pyramids are higher the stronger the control chain through the pyramid, and the larger the difference between the controlling blockholder's voting rights and cash-flow rights in firms with strong control chains. Since conflict between majority and minority owners is the dominant agency problem in such firms, their findings support the substitute hypothesis. John and Knyazeva (2006) relate dividends to an index of overall governance quality rather than to just one of its components, such as ownership structure. They find support for the substitute model, because dividends increase with decreasing governance quality.

The rest of the paper is organized as follows: Section 2 makes the basic prediction and presents the institutional setting of our sample firms. Descriptive statistics follow in Section 3, and Section 4 reports the statistical tests. We summarize and conclude in Section 5.

2. Basic hypothesis and institutional setting

Studying how the aggregate dividend payout in a country relates to its legal regime, La Porta et al. (2000) introduce the outcome model and the substitute model as two alternative perspectives on how stakeholder conflicts and dividends interact. The authors do not develop the two models formally, but regard them as tools for intuitively understanding the relationship between dividends and stockholder protection across different legal regimes (La Porta et al., 2000, p. 5). Formal models that reflect different components of the La Porta et al. logic have been developed by Rozeff (1982), Fluck (1999), and Gomes (2000).

We apply the La Porta et al. framework within a given legal regime rather than across different regimes. Unlike Khan (2006), Renneboog and Szilagyi (2006), and Renneboog and Trojanowski (2007), we test the two dividend theories directly. Another difference is that we do not vary relative stakeholder power by varying ownership concentration, but rather by varying the organizational form across firms that all have low ownership concentration. Finally, one of our two firm types has non-owner stakeholders as the legal insiders, whereas the owners are the outsiders. Specifically, the stockholders have the majority in commercial banks (*forretningsbank*). In savings banks (*grunnfondsbank*), however, stockholders hold only a minority stake, because the firm is controlled by its employees, customers, and the community citizens (i.e., non-owner stakeholders). Hence, ownership concentration is low and homogeneous in both organizational forms by an exogenous constraint, there is large heterogeneity in stakeholder control rights, and this heterogeneity is unrelated to ownership concentration. The other dividend determinants are quite homogeneous across the sample, because both firm types are listed, face the same market opportunities, and are subject to the same regulation.

Given the two dividend theories and our empirical setting, the basic hypothesis is straightforward: The outcome model predicts that commercial banks will pay higher dividends than savings banks will. Under the substitute model, commercial banks will pay lower dividends than savings banks will.

Table 1 shows how control rights and stockholders' residual cash-flow rights are distributed in the two organizational forms. We measure control rights as the fraction of the board seats voted for by the stakeholder group in question. Cash-flow rights are the fraction of earnings and equity the stockholder can claim. The commercial bank is controlled and owned by its stockholders, as they hold 73% of the votes and all the residual cash-flow rights. Employees hold the remaining control rights and no cash-flow rights. Thus, commercial banks are like other firms regarding stockholders' ownership rights.[2]

The stockholders of a savings bank have only 25% of its voting rights. The remaining 75% is split equally between employees, depositors, and the community citizens. Similarly, stockholders cannot claim the full residual cash flow, but rather can claim only a fraction that varies between 5% and 74% across the sample. This fraction equals the stockholders' share of the firm's equity. The remaining cash-flow rights are ownerless in the sense that no stakeholder can claim any part of them. Thus, the earnings and the capital that do not belong to the stockholders cannot be distributed to any stakeholder.

This organizational form for savings banks was created in Norway in 1985 by a law that allows for the issue of equity securities by banks that used to be nonprofit. A nonprofit is an entirely ownerless company, since no stakeholder has a right to its residual cash flow (Hansmann, 1996). Thus, a savings bank is a hybrid between an ownerless company and a regular stock company. Except for the restricted voting rights (25% for stockholders as a group) as described in Table 1, the equity securities issued by a savings bank carry the same ownership rights as the equity securities in a commercial bank do.[3]

Like all Norwegian firms above a certain size, banks have a two-tiered board structure. Except for charter amendments, which require a two-thirds supermajority, all decisions in both tiers are made by simple majority. The supervisory board writes the corporate charter, hires and fires the CEO, sets the CEO's salary, and appoints the executive board. [4] The CEO has a vote on the executive board, but cannot be its chairperson.[5]

The dividend is proposed by the executive board in both bank types. The final dividend decision in commercial banks is made by majority vote in the stockholder meeting. In savings banks, the supervisory board makes the decision by majority vote among the four stakeholder groups. The dividend proposed by the executive board can be reduced by these two bodies, but cannot be increased.[6] Dividends are paid once a year. No regulation mandates a minimum payout, and the tax system is neutral regarding dividends and capital gains, at both the firm level and the investor level.

The earnings of a savings bank are generated by both the owned and the ownerless equity. Hence, the earnings that belong to the

[2] Limited liability firms in Norway with more than 200 employees are required by constitutional law to have one third of their directors elected by and among the employees. Industry-specific regulation reduces this fraction to 27% for commercial banks. All commercial banks in our sample have more than 200 employees.

[3] Stockholder-owned equity is senior to ownerless equity by construction. Hence, the stockholders' equity claim is less risky in a savings bank than in a commercial bank.

[4] The supervisory board of commercial banks must have either 15, 30, or 45 members. There is no such rule for savings banks. The executive board of commercial banks must have between 5 and 9 members. The minimum in savings banks is 4 members, but there is no maximum.

[5] The stockholder meeting of commercial banks elects 73% of the supervisory board members, while the remaining 23% is elected by the employees. The supervisory board of savings banks is elected by the employees, stockholders, customers, and local politicians, who each choose 25% of the members. See table 1.

[6] The supervisory board in either bank type normally states its dividend policy rather vaguely in the annual report, a common term being "competitive dividend payout." Nevertheless, some banks are quite specific, making statements like "we generally pay the earnings out as dividends rather than retain them."

Table 1
Firm types, control rights, and cash-flow rights.

Firm type	Stakeholders' control rights, %				Stockholders' cash-flow rights, %
	Stockholders	Employees	Depositors	Community	
Commercial banks	73	27	0	0	100
Savings banks	25	25	25	25	5–74

Notes: This table shows the distribution of the stakeholders' control rights and the stockholders' residual cash-flow rights in the two firm types (commercial banks and savings banks) in our sample. The cash-flow rights in a savings bank that do not belong to the stockholders are ownerless.

stockholders are the total earnings multiplied by the stockholders' share of the total equity (i.e., their fractional cash-flow rights). To illustrate, suppose total earnings are 300 units, that stockholders own 40% of the firm's equity, and that dividends are 100 units. This example implies that stockholders own 120 units of the earnings, and that 100 units of this claim are paid out to them. Thus, the payout ratio is 83%. The remaining 20 units of stockholders' earnings are retained, along with the 180 units (300–120) that are ownerless. This latter amount can never be paid out, as regulation prevents the stockholders from expropriating the ownerless equity. Thus, stockholders can be paid all the earnings they own, but not more (120 units plus any retained stockholder earnings from earlier years in the example). The remainder must be retained, since nobody can claim it (180 units plus the ownerless earnings from earlier years). Hence, the non-owner stakeholders who control a savings bank can use dividend policy to reduce the potential agency conflict with the bank's owners. The larger the fraction of stockholders' earnings they pay out, the less room there is for agency costs. Conversely, the non-owners might intensify the potential conflict by paying low dividends. Observing the former dividend policy (high payout in savings banks) would support the substitute model, whereas observing the latter (low payout) would support the outcome model.

Overall, this institutional environment implies that the controlling stakeholder group in either organizational form has wide discretion in dividend policy. In particular, any firm can choose to pay no dividend whatsoever. The maximum ratio of dividends to stockholders' earnings is 100% if the dividend is paid only out of earnings for that year. The ratio is negative if current earnings are negative and the dividend is funded by retained past earnings. Finally, the payout ratio exceeds 100% if the stakeholders in control choose to pay out to stockholders all stockholders' earnings for the year plus part of their retained past earnings.

3. Descriptive statistics

According to Table 2, roughly 40% of the 287 firm years in the sample come from commercial banks, which are more numerous than savings banks in the first half of the period and less numerous in the second. The commercial bank sector is in the aggregate about twice as large as the savings bank sector. The average commercial bank is four times the size of the average savings bank.

Table 3 shows descriptive statistics for risk, return, stock liquidity, and growth. Savings banks are less risky than are commercial banks according to balance sheet proxies for total risk, but the difference as measured by the systematic risk of the stock return is not statistically different from zero.[7] The two bank types have similar book return on assets and market return on equity. This similarity in risk and return might suggest that the two organizational forms have comparable economic efficiency. Savings banks have higher dividend yield, lower stock liquidity, and higher growth. The higher dividend yield in savings banks is a first sign of support for the substitute model. It reflects that although the stock return of the two firm types does not differ, the dividend component of the stock return is higher in the firm type with the weakest owner control and the highest growth.

Ownership characteristics are reported in Table 4. The median equity holding of the largest owner is 10% in commercial banks and 6% in savings banks. This concentration, which is one-third the typical level for firms listed on the Oslo Stock Exchange, reflects a binding regulatory constraint.[8] Aggregate personal (i.e., direct) ownership is typically 20% in commercial banks and 52% in savings bank. The latter figure is about three times higher than for other listed firms on the Oslo Stock Exchange as a whole (Bøhren and Ødegaard, 2006).

The two organizational forms we described in Table 1 reflect that the division of power between owners and non-owners is driven by bank type: Owners control the commercial bank, while non-owners control the savings bank. For given organizational form, however, there is also a second determinant of power sharing which stems from the difference between stockholders' cash-flow rights and control rights. We measure this wedge by the separation ratio, which we define as $sep \equiv (c - v)/c$. Here, c is the owners' fraction of cash-flow rights in the firm and v is their fraction of voting rights.[9] A *sep* of 0 means there is no separation, a positive *sep* means stockholders have fewer voting rights than cash-flow rights, and a negative *sep* reflects the opposite. The separation ratio is 0.27 in all commercial banks, because stockholders as a group always control 73% of the votes for directors ($v = 0.73$) and hold all the cash-flow rights ($c = 1$). In contrast, *sep* varies considerably across savings banks. Although their stockholders always hold 25% of the voting rights, Table 1 showed that their fraction of cash-flow rights varies between 5% and 74% in the cross section. This heterogeneity produces a mean *sep* for savings banks of 0.18, varying between −0.15 and +0.49.

Table 5 describes dividend policy by the payout propensity in panel A, by the payout ratio in panel B, and by the retention ratio in panel C. Panel A shows that most banks pay dividends, and that savings banks do so more often than commercial banks do (89% vs. 68% of the time, respectively). Unlike commercial banks, most savings banks also paid dividends during the banking crisis in 1988–1992, when all banks experienced a series of negative earnings shocks.[10]

[7] This pattern of risk based on the balance sheet is consistent with findings from the United States that a bank's total risk increases when stockholders have greater control rights than depositors do (Esty, 1997a,b).

[8] The typical ownership concentration is 30% in Norway (Bøhren and Ødegaard, 2006) and 40% in Continental Europe (Barca and Becht, 2001). The mean exceeds the median for commercial banks in Table 4 because the state held very large stakes in a few banks around the banking crisis in 1988–1992.

[9] No bank in the sample has dual-class shares. Since no stockholder can own more than 10% of the equity, we disregard ownership through pyramids when constructing the ownership structure characteristics.

[10] Thirteen small and medium sized banks failed in 1988–1990, and large commercial banks started failing towards the end of 1990. As government support of distressed banks sometimes required the write-off of existing equity, the three largest commercial banks came under full state ownership in 1992. The industry regained profitability in 1993, and the state holdings were gradually reduced (Moe et al., 2004). By the end of our sample period, the state held a 48% minority stake in the largest commercial bank and had sold their shares in the two others.

Table 2
Sample size, aggregate size per firm type, and size per firm.

Year	All	Number of firms		Aggregate size		Size per firm			
		Commercial banks	Savings banks	Commercial banks	Savings banks	Commercial banks		Savings banks	
						Mean	Median	Mean	Median
1989	16	13	3	403.29	12.42	31.02	7.76	4.14	2.13
1990	13	10	3	430.83	12.54	43.08	9.35	4.18	2.18
1991	12	8	4	258.55	83.08	32.32	9.26	20.77	5.39
1992	14	10	4	265.61	83.73	26.56	7.33	20.93	5.18
1993	14	10	4	352.46	88.34	35.25	8.62	22.08	5.90
1994	17	9	8	350.29	148.27	38.92	11.29	18.53	12.54
1995	21	9	12	386.27	184.13	42.92	22.01	15.34	7.86
1996	21	8	13	444.44	212.46	55.55	19.13	16.34	5.88
1997	23	9	14	516.93	244.87	57.44	16.95	17.49	5.42
1998	28	9	19	546.59	285.69	60.73	18.32	15.04	3.74
1999	26	6	20	577.18	356.22	96.20	24.53	17.81	4.30
2000	28	6	22	638.83	413.74	106.47	26.80	18.81	4.86
2001	27	5	22	425.68	460.03	85.14	28.23	20.91	5.19
2002	27	6	21	709.10	263.52	118.18	32.47	12.55	5.52
Sum	287	118	169	6,306.06	2,849.05	829.78	242.03	224.93	76.09
Mean	21	8	12	450.43	203.50	59.27	17.29	16.07	5.44
Median	21	9	13	428.25	198.29	49.32	12.77	17.65	5.03
St. dev.	6	2	8	133.04	142.50	31.72	8.54	86.29	2.53

Notes: This table shows the total number of firms in the sample (All), the number of firms per type (commercial banks and savings banks), the aggregate size per firm type, and the mean and median size per individual firm of each type. We measure size as total assets in billion NOK as of year 2002. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end.

Table 3
Descriptive statistics for risk, return, liquidity, and growth.

Characteristic	Commercial banks			Savings banks			Difference			
	Mean	Std.	Median	Mean	Std.	Median	Mean	(t)	Median	(z)
Risk										
Asset risk, %	14.39	5.83	13.45	8.40	2.88	7.81	6.00	(12.12)	5.63	(11.81)
Liability risk, %	54.75	24.07	48.96	33.77	12.48	33.74	20.98	(10.99)	15.22	(9.17)
Leverage, %	94.29	2.92	94.40	91.79	3.15	92.85	2.50	(6.92)	1.55	(6.78)
Earnings risk, %	1.69	1.91	1.34	0.48	0.40	0.42	1.21	(2.64)	0.92	(1.96)
Systematic risk	0.78	0.39	0.74	0.89	0.46	0.89	−0.11	(−0.92)	−0.15	(−0.83)
Return										
ROA, %	0.42	0.85	0.78	0.45	0.76	0.75	0.02	(−0.09)	−0.30	(0.37)
Stock return, %	20.44	73.76	9.04	14.83	38.47	9.67	5.61	(0.72)	−0.63	(−0.04)
Capital gain, %	15.74	73.57	5.51	6.66	39.27	−0.40	9.07	(1.19)	5.92	(0.87)
Dividend yield, %	4.70	4.69	5.03	8.18	2.63	8.46	−3.48	(−7.52)	−3.43	(−8.43)
Liquidity										
Turnover, %	60.18	66.32	40.01	27.01	25.13	17.28	33.17	(6.16)	22.73	(5.10)
Growth										
Asset growth, %	9.92	21.73	7.91	13.71	9.45	12.39	−3.79	(−1.94)	−4.48	(−3.52)
Tobin's Q	1.01	0.43	1.00	1.21	0.29	1.17	−0.20	(−4.77)	−0.18	(−5.94)

Notes: The table shows the mean value, the standard deviation (Std.), and the median value for proxies of risk, return, liquidity, and growth. We measure Asset risk as the percentage of assets that is not cash, claims on the central bank, amortizable loans, or fixed assets. Liability risk is the percentage of liabilities that is not deposits. Leverage is total debt as a percentage of total assets, while Earnings risk is the standard deviation of ROA (net income over total assets). Systematic risk is the stock's beta estimated over the sample period from monthly stock returns. Stock return is capital gains plus dividend yield, and Turnover is the value of the trade in the stock during the year in percent of its market value at year end. Asset growth is the relative increase in total assets over the year, and Tobin's Q is measured as the market value of stock divided by its book value. The means and medians are equally weighted across firms and years. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once over the period 1989–2002.

Table 4
Ownership structure.

Characteristic	Commercial banks		Savings banks		Difference			
	Mean	Median	Mean	Median	Mean	(t)	Median	(z)
Largest owner, %	15.99	10.00	6.98	6.00	9.01	(7.46)	4.00	(8.94)
Five largest owners, %	37.61	32.00	18.06	17.00	19.55	(12.84)	15.00	(10.53)
Personal owners, %	21.66	20.00	50.56	52.00	−28.89	(−11.62)	−32.00	(−9.34)
Separation	0.27	0.27	0.18	0.38	0.09	(1.75)	−0.11	(−2.57)

Notes: The table shows ownership characteristics across the two firm types (Commercial banks and Savings banks). We report the percentage equity holding of the firm's largest owner, the aggregate percentage holding of the five largest owners, and the aggregate percentage holding in the firm by personal owners (individuals). Separation reflects the wedge between the stockholders' cash-flow rights and control rights. We operationalize Separation as the difference between the stockholders' contractual fraction of cash-flow rights and their contractual fraction of board seats, divided by the stockholders' fraction of cash-flow rights. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once during the period 1989–2002. Data source: Verdipapirsentralen ASA.

Table 5
Dividend characteristics.

Year	All	Commercial banks	Savings banks
A. Payout propensity			
1989	56.25	46.15	100.00
1990	38.46	20.00	100.00
1991	16.67	0.00	50.00
1992	14.29	10.00	25.00
1993	57.14	40.00	100.00
1994	88.24	88.89	87.50
1995	95.24	100.00	91.67
1996	95.24	87.50	100.00
1997	95.65	88.89	100.00
1998	100.00	100.00	100.00
1999	100.00	100.00	100.00
2000	100.00	100.00	100.00
2001	96.30	100.00	95.45
2002	88.89	66.67	95.24
Mean	74.45	67.72	88.92
Median	92.06	88.19	100.00
St. dev.	31.66	37.13	22.66

	All	Commercial banks		Savings banks		Difference			
	Mean	Mean	Median	Mean	Median	Mean	(*t*)	Median	(*z*)
B. Payout ratio for dividend payers									
1989	83.53	60.04	51.47	130.50	125.70	−70.46	(−4.89)	−74.23	(−2.32)
1990	121.39	89.68	89.68	142.53	138.45	−52.85	(−2.66)	−48.77	(−1.73)
1991	147.25	n.a.	n.a.	147.25	147.25	n.a.	(n.a.)	n.a.	(n.a.)
1992	27.97	6.82	0.07	49.12	49.12	−42.31	(n.a.)	−49.05	(−1.00)
1993	53.41	25.66	0.27	81.17	69.83	−55.51	(−2.80)	−69.56	(−2.31)
1994	62.33	50.32	42.99	76.05	80.74	−25.73	(−1.60)	−37.74	(−2.08)
1995	62.68	53.94	45.81	69.04	57.99	−15.11	(−1.13)	−12.17	(−1.25)
1996	75.11	44.71	41.49	91.49	99.15	−46.78	(−4.95)	−57.67	(−3.13)
1997	75.92	45.63	44.35	93.23	103.13	−47.60	(−4.91)	−58.77	(−3.41)
1998	106.14	47.78	47.76	133.78	96.36	−86.00	(−1.46)	−48.60	(−3.57)
1999	79.69	46.87	51.14	89.41	96.66	−42.54	(−4.38)	−45.52	(−2.85)
2000	78.56	36.37	35.16	89.32	98.90	−52.95	(−5.74)	−63.74	(−3.06)
2001	89.49	38.46	40.58	101.32	102.97	−62.87	(−6.11)	−62.39	(−3.11)
2002	129.90	45.94	50.00	145.02	104.76	−99.09	(−0.66)	−54.76	(−2.47)
All	84.71	47.38	44.72	103.73	102.18	−56.35	(−4.40)	−57.46	(−9.98)
St. dev.	98.72	25.65		114.73					
C. Retention ratio for dividend payers									
1989	40.84	39.96	48.53	42.60	49.65	−2.64	(−0.18)	−1.12	(−0.05)
1990	25.36	10.32	10.32	35.38	44.20	−25.07	(−1.37)	−33.88	(−0.58)
1991	20.25	n.a.	n.a.	20.25	20.25	n.a.	(n.a.)	n.a.	(n.a.)
1992	86.62	93.18	93.18	80.06	80.06	13.12	(n.a.)	13.12	(1.00)
1993	65.92	74.34	73.30	57.51	71.30	16.83	(1.04)	1.99	(0.58)
1994	55.78	49.68	57.01	62.75	64.27	−13.07	(−0.90)	−7.26	(−0.81)
1995	58.05	46.06	54.19	67.85	66.77	−21.79	(−2.12)	−12.59	(−1.79)
1996	60.51	55.29	58.51	63.31	58.98	−8.02	(−1.14)	−0.46	(−0.59)
1997	59.04	54.37	55.65	61.71	58.27	−7.34	(−0.98)	−2.62	(−0.55)
1998	48.68	52.22	52.24	47.00	59.73	5.21	0.20	−7.49	(−1.4)
1999	64.77	53.13	48.86	67.68	68.04	−14.54	(−2.12)	−19.19	(−1.56)
2000	69.28	63.63	64.84	70.30	68.70	−6.67	(−1.02)	−3.86	(−0.92)
2001	67.12	61.54	59.42	68.18	65.40	−6.63	(−0.92)	−5.98	(−0.96)
2002	35.69	54.06	50.00	32.79	66.27	21.27	(0.27)	−16.27	(−0.82)
All	56.62	52.41	54.64	58.52	65.38	−6.11	(−0.89)	−3.18	(−3.18)

Notes: This table shows the percentage of firms in the sample that pay cash dividends (panel A), the payout ratio for dividend payers (panel B), and the retention ratio for dividend payers (panel C). The payout ratio is cash dividends divided by the earnings that belong to the stockholders. The retention ratio is the fraction of total earnings not paid out as dividends to the stockholders. All ratios are percentages. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end.

The payout ratio in panel B is measured as cash dividends divided by stockholders' earnings. The earnings component (i.e., the denominator) of the payout ratio in commercial banks is total earnings, since all the earnings belong to the stockholders. In savings banks, however, the denominator of the payout ratio is only the part of earnings that is owned by the stockholders. This amount, which is the part of total earnings that the non-owners can potentially expropriate from the owners, is always less than total earnings. The maximum ratio of stockholders' earnings to total earnings is 74% according to Table 1.

Panel B includes only the subsample of dividend payers from panel A. It shows that banks in general distribute a high portion of earnings to their stockholders. In fact, both the payout propensity and the payout ratio are unusually large by national standards.[11] Although there is considerable variation from bank to bank, and particularly among the savings banks, the average payout ratio is significantly higher in savings banks than in commercial banks. This is true for the period as a whole, during the earnings shocks of the banking crisis, and in eight of the fourteen sample years. In fact, most savings banks pay out all the stockholders' earn-

[11] The median payout propensity at the Oslo Stock Exchange is 47% in the sample period, and the median payout ratio is 38% for firms that pay dividends (Source: Oslo Stock Exchange).

Table 6
Equity issue activity.

Year	Commercial Banks	Savings Banks
A. Issue propensity		
1989	46.15	66.67
1990	50.00	33.33
1991	37.50	50.00
1992	30.00	25.00
1993	40.00	50.00
1994	22.22	37.50
1995	11.11	8.33
1996	12.50	15.38
1997	11.11	21.43
1998	55.56	10.53
1999	33.33	10.00
2000	33.33	13.64
2001	40.00	13.64
2002	33.33	14.29
Mean	31.30	17.75
Median	33.33	18.41
St. dev.	14.12	18.34

	Commercial banks		Savings banks		Difference			
	Mean	Median	Mean	Median	Mean	(*t*)	Median	(*z*)
B. Issue volume								
1989	55.87	26.41	33.61	33.61	22.26	(0.37)	−7.20	(−0.33)
1990	5.75	3.18	2.07	2.07	3.68	(n.a.)	1.11	(0.88)
1991	38.82	40.93	17.72	17.72	21.10	(0.82)	23.22	(1.16)
1992	332.34	64.02	17.49	17.49	314.85	(n.a.)	46.52	(0.45)
1993	35.91	31.47	19.41	19.41	16.49	(0.94)	12.05	(0.93)
1994	12.84	12.84	36.49	24.78	−23.65	(−1.16)	−11.95	(−1.73)
1995	10.43	10.43	42.28	42.28	−31.85	(n.a.)	−31.85	(−1.00)
1996	0.68	0.68	7.35	7.35	−6.67	(n.a.)	−6.67	(n.a.)
1997	0.54	0.54	21.45	20.40	−20.91	(n.a.)	−19.86	(−1.34)
1998	18.14	13.84	19.57	19.57	−1.42	(−0.12)	−5.73	(−0.39)
1999	10.18	10.18	6.27	6.27	3.90	(n.a.)	3.90	(n.a.)
2000	16.97	16.97	0.59	0.52	16.38	(1.33)	16.45	(n.a.)
2001	4.58	4.58	5.72	0.31	−1.14	(−0.15)	4.27	(0.58)
2002	9.15	9.15	5.36	0.44	3.79	(0.42)	8.71	(1.16)
Mean	45.81	13.67	15.95	15.95	29.86	(1.15)	−2.28	(−0.68)

Notes: This table describes the firms' equity issuing behavior. Panel A shows the percentage of banks issuing new equity, and panel B shows new share capital as a percentage of existing share capital (owned plus ownerless share capital in savings banks) for issuing firms. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end.

ings as dividends. This means that practically the only stockholder asset withheld by savings banks is the cash that stockholders paid in at the equity offering. In contrast, a typical commercial bank withholds these proceeds plus roughly 55% of the earnings.[12]

This aggregate dividend pattern supports the substitute model: The non-owner-controlled savings banks pay out more of stockholders' earnings than the owner-controlled commercial banks do. Notice, however, that because savings banks are also financed by ownerless equity, to which no dividend can be paid, the high payout does not imply that only a small part of a savings bank's total earnings is retained. Panel C documents that the average fraction of total earnings retained is 59% in savings banks, which is not statistically different from the 52% in commercial banks. According to the medians, the savings banks retain significantly more. Thus, the differential payout policy in the two organizational forms is not necessarily crucial for how retained equity can finance regulatory capital requirements and future growth. However, the difference does reflect how dividends might be used to influence the seriousness of the conflict between owners and non-owners. This conflict is independent of the ownerless equity.

[12] The mean and median payout ratios in savings banks sometimes exceed 100%. This happens because dividends in year *t* can be paid both from year *t* earnings and from undistributed earnings generated before *t*. Since earnings vary over time, a policy of stable, high dividends per share might easily produce a payout ratio above 100% in a given year. This is more likely to happen in years when earnings are unusually low.

We argued in Section 1 that the dividend policy of firms controlled by non-owners might be disciplined by several mechanisms, such as the need to raise new equity in the future. Moreover, Table 3 showed that the growth rate is higher in savings banks than in commercial banks, which does suggest a higher financing need in savings banks. Evidence based on the firms' equity issues is provided in Table 6. The table shows that although commercial banks go more often to the issue market than savings banks do, both bank types expand their share capital by roughly the same proportion when issues are made. A typical savings bank sells new equity about every 6 years and increases its share capital (owned plus ownerless) by about 15% on these occasions.

Summarizing, the descriptive statistics have shown that the savings banks in our sample, which are controlled by non-owner stakeholders, have similar asset returns, stock returns, and systematic risk as do commercial banks, which are owned and controlled by their stockholders. Savings banks are smaller, have higher growth, more of their equity is held by personal owners, and are as dependent on the equity issue market as commercial banks are. Savings banks pay dividends more often and distribute more of stockholders' earnings when they pay.

4. Statistical tests

We report the estimates of the base-case model in Section 4.1, followed by a series of robustness tests in Section 4.2.

4.1. The base-case model

We specify the base-case relationship between dividends and its potential determinants for firm i at time t as follows:

$$Dividend_{it} = \alpha + \beta_1 Savings_i + \beta_2 Dividend_{it-1} + \beta_3 Leverage_{it} + \beta_4 Liquidity_{it} + \beta_5 Growth_{it} + \beta_6 Size_{it} + \varepsilon_{it} \quad (1)$$

Dividend is cash dividends divided by stockholders' earnings. *Savings* is a dummy variable, which is 1 for a savings bank and 0 for a commercial bank, and *Leverage* is the book value of debt divided by the book value of assets.[13] *Liquidity* is the value of traded equity divided by its market value. *Growth* is the relative increase in the book value of assets during the year, and *Size* is the log of the book value of assets. Flow variables are measured over the full year, while the other variables are measured at year end.

The key determinant in (1) is the savings bank dummy, and its coefficient β_1 is predicted to be negative in the outcome model (savings banks pay lower dividends) and positive in the substitute model (savings banks pay higher dividends). The remaining determinants, which are well known from the literature (Allen and Michaely, 2003; Kalay and Lemmon, 2008), do not relate specifically to the stakeholder conflict we are studying. Moreover, their relationship with dividends might at least initially be considered independent of bank type. Thus, we leave potential interactions between organizational form and the other dividend determinants to the robustness tests.

Lintner (1956) was first to document that most firms have much more stable dividends than earnings. We account for such dividend persistence by the lagged payout ratio and predict a positive β_2. The expected sign of β_3 for financial leverage is indeterminate from a corporate governance viewpoint, because both dividends and debt might be used to reduce the free cash flow. This logic means dividends and debt might be both substitutes (negative β_3) and complements (positive β_3). Increased debt might also induce stronger conflicts between owners and creditors. Since lower dividends might reduce this debt problem by leaving more equity in the firm to pay off creditors, a negative β_3 is implied. Finally, we expect a negative β_3 from a regulatory perspective, as increased debt brings the firm closer to the minimum capital coverage constraint. The closer the firm is to the mandatory equity floor, the lower the dividends that can be paid.[14] Given all the above, we leave the sign of β_3 unspecified.

We predict a negative β_4 for stock liquidity, as an illiquid security makes it more costly for the investors to undo the firm's dividend policy by trading in the stock. The expected sign of the growth coefficient β_5 is indeterminate. The pecking order logic suggests that higher growth induces lower dividends, as retained earnings are the cheapest source of financing under conditions of asymmetric information. On the other hand, growing firms are more dependent on new equity than other firms are. Therefore, they have stronger incentives to establish a good reputation in the stock market in order to reduce the cost of new equity. This motivation might be particularly true when the owners as a group are weak, such as the stockholders in savings banks are. As we argued under the substitute model, paying consistently high dividends is a way to build reputation for not wasting free cash flow. Paying high dividends is also a vehicle for exposing the firm to scrutiny in the market for new equity issues. In this context, growth might induce higher dividends rather than lower ones. Lacking a formal model of the equilibrium relationship between these two opposing forces, we leave β_5 unspecified. Finally, since small firms in particular might use dividends to reduce information asymmetry, we predict a negative β_6.

The base-case model (1) is estimated with ordinary least squares (OLS), pooled data, year dummies, and standard errors adjusted for clustering at the firm level. The year dummies control for unobservable, time-varying effects for the banking industry, which we assume have the same impact on dividend policy in both firm types. We cannot account for unobservable, firm-specific dividend determinants by fixed-effects estimation, since we need a time-invariant dummy to control for firm type. Random-effects estimation would solve this problem, but cannot handle lagged dependent variables, which we use to capture dividend persistence (Hsiao, 2003). We eliminate the effect of extreme outliers by winsorizing the 5% and 95% tails of each variable except those of the dummy variables. Section 4.2 examines the robustness of the base-case estimates to these assumptions and considers what happens when we use the Generalized Method of Moments (GMM) rather than the base-case approach to account for possible lack of independence in the error terms of the regression.

We standardize every variable except the bank-type dummy by deducting the mean value of the variable from each observation and dividing the difference by the variable's standard deviation.

Table 7
Estimates of the base-case model.

Characteristic	Hypothesis	Coefficient
Savings bank dummy	O: −; S: +	0.793***
		(3.34)
Lagged payout	+	0.302*
		(1.72)
Leverage	?	−0.040
		(−0.69)
Liquidity	–	0.090
		(1.47)
Growth	?	0.124**
		(2.08)
Size	–	−0.142*
		(−1.73)
Constant		−1.623***
		(−2.82)
Sample size		211
R^2 adjusted		0.62
F-ratio		19.06***

Notes: This table relates a bank's dividend payment to potential determinants. The dependent variable is cash dividends divided by stockholders' earnings. Savings bank dummy equals one if the bank is a savings bank and zero otherwise. Lagged payout is the dependent variable one period earlier. Leverage is total debt over total assets, and Liquidity is the market value of the trade in the stock over the year divided by its market value at year end. We measure Growth as the relative increase in assets over the year, while Size is the log of total assets in NOK1000. In the Hypothesis column, O refers to the Outcome model, S to the Substitution model, and the signs reflect the predicted relationship between dividends and the independent variable in question. The model is estimated on the pooled sample with year dummies (not reported), and we use standard errors adjusted for clustering at the firm level. Non-dummy data are winsorized at the 5% and 95% tails. We standardize every non-dummy variable by deducting the mean value of the variable from each observation and dividing the difference by the variable's standard deviation. The *t*-values are shown in parentheses. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once during the period 1989–2002.

* Statistically significant relationships at the 10% level.
** Statistically significant relationships at the 5% level.
*** Statistically significant relationships at the 1% level.

[13] We measure debt as the book value of assets minus the book value of equity. Equity in commercial banks is measured as paid-in equity (face value and excess of paid-in over face value) plus retained earnings. Equity in savings banks is ownerless equity (face value and retained earnings for the ownerless capital) plus owned equity (paid-in and retained equity for the stockholders). A savings bank in our sample is fundamentally different from an S&L, which is mutually owned by its depositors. Therefore, we do not distinguish between deposits and other fixed claims when measuring leverage in a savings bank. Deposits are treated as regular debt both in commercial banks and savings banks.

[14] The minimum capital coverage as specified by regulation uses a weighting system for the asset classes. As we lack balance-sheet data to implement this approach, we use unweighted assets by setting the capital coverage ratio equal to the leverage ratio.

Table 8
Outliers, random-effects estimation, and GMM estimation.

Characteristic	Pooled		Random effects		GMM	
	I	II	III	IV	V	VI
Savings bank dummy	0.793***	0.694***	1.163***	0.669***	0.677***	0.325
	(3.34)	(3.79)	(9.00)	(4.31)	(2.82)	(0.39)
Lagged payout	0.302*	0.053			0.031	−0.059
	(1.72)	(0.68)			(0.11)	(−0.08)
Leverage	−0.04	−0.019	0.039	−0.01	3.326	−1.587
	(−0.69)	(−0.62)	(0.57)	(−0.12)	(1.43)	(−0.29)
Liquidity	0.09	0.071	0.098*	0.076	0.03	0.017
	(1.47)	(1.48)	(1.85)	(1.02)	(0.05)	(0.03)
Growth	0.124**	−0.26	0.145**	−0.102	0.18	0.166
	(2.08)	(−0.70)	(2.43)	(−0.37)	(0.23)	(0.32)
Size	−0.142*	−0.045	−0.236***	−0.057	0.042	−0.106
	(−1.73)	(−0.42)	(−3.40)	(−0.71)	(0.29)	(−0.22)
Constant	−1.623***	−0.829**	−0.951***	−0.415	−3.634**	2.890
	(−2.82)	(−2.62)	(−3.20)	(−0.85)	(−1.96)	(0.32)
Sample size	211	211	259	259	211	211
Winsorized	Yes	No	Yes	No	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	No	Yes
R^2 adjusted	0.62	0.09	0.65	0.20		
Autocorr 1st order (z)					−1.086	−0.566
Autocorr 2nd order (z)					0.920	0.555
Sargan (Chi^2)					24.97	17.61
F-ratio (Chi^2)	19.06***	2.13***	297.18***	59.32***	23.63***	330.14***

Notes: This table compares the use of non-winsorized data, random-effects estimation, and GMM-in-systems estimation to the base-case approach from Table 7 (model I). Models II–VI are explained in the main text. The dependent variable is cash dividends over stockholders' earnings. Savings bank dummy equals one if the bank is a savings bank and zero otherwise. Lagged payout is the dependent variable one period earlier. Leverage is total debt over total assets, and Liquidity is the market value of the trade in the stock over the year divided by its market value at year end. We measure Growth as the relative increase in assets over the year, while Size is the log of total assets in NOK1000. For GMM we report the z-values for the Arellano-Bond test for first- and second-order autocorrelation and the Sargan test of overindentifying restrictions. Non-dummy data are winsorized at the 5% and 95% tails where indicated. The t-values are shown in parentheses. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once during the period 1989–2002.

* Statistically significant relationships at the 10% level.

** Statistically significant relationships at the 5% level.

*** Statistically significant relationships at the 1% level.

The coefficient estimate for the standardized variable has the same t-value as for the unstandardized variable, but expresses economic significance more directly. By having an expected value of zero and a standard deviation of one, its regression coefficient shows the number of standard deviations the payout ratio is expected to change if the dividend determinant changes by one standard deviation. Thus, the higher the absolute value of the standardized coefficient, the stronger the economic significance of the determinant.

Table 7 shows that the estimates of the base-case model explain 62% of the variation in dividend payout.[15] The key result is that the coefficient for the savings bank dummy (β_1) is positive and statistically significant. This finding is consistent with the substitute model and refutes the outcome model. The relationship is also considerably stronger economically than for any other determinant.

As expected, dividends are persistent ($\beta_2 > 0$). Dividends do not respond systematically to changes in debt financing (β_3), suggesting that closeness to capital coverage constraints is not an important concern when dividend decisions are made.[16] Neither is stock liquidity (β_4), which means firms with a less liquid stock do not pay higher dividends to offset their owners' higher costs of transforming capital gains into cash. Higher growth makes the firm pay higher dividends ($\beta_5 > 0$), which supports the reputation logic of the substitute model. Finally, small firms pay higher dividends than large firms do ($\beta_6 < 0$). To the extent that larger size reflects greater information transparency, this result supports the idea that paying dividends reduces the future cost of new equity.[17]

4.2. Robustness

We first analyze whether the base-case results from model (1) are sensitive to using non-winsorized data and alternative econometric techniques. Second, we replace the classic dividend ratio used so far by three alternative measures proposed in the literature. Third, (1) is estimated without lagged dividends to check whether controlling for dividend persistence makes the bank-type dummy act as a proxy for dividend growth rather than for stakeholder control. Fourth, we analyze whether stakeholder control interacts with the relationship between dividends, size, and growth. Finally, we include more ownership characteristics in (1) than just organizational form.[18]

Model I in Table 8 repeats the base-case results from Table 7. According to model II, including observations outside the 5% and 95% bounds does not change our major result that firms pay higher dividends when non-owner stakeholders are in control. No other determinant is statistically significant, however, and the model

[15] The correlation matrix does not suggest serious multicollinearity problems. The only variables which correlate considerably are size and leverage, where the correlation coefficient is 0.57.

[16] As a robustness check, we alternatively classify subordinated debt as equity in the leverage ratio. We also test a version of (1) with a 0/1 dummy variable which is 1 if and only if leverage is close to the legal minimum, using alternative definitions of closeness. The results, which are available upon request, show that the estimated relationships in (1) are robust to such alternative specifications of leverage.

[17] The estimates of the time-dummy coefficients (not reported in Table 7) show that the industry-wide dividends to earnings ratio is significantly lower in 1991–1993, which is towards the end of the banking crisis. We return to such fixed industry effects in Section 4.2.

[18] We have also augmented the base-case model by ROA to check whether the relationship between the payout ratio and stakeholder conflicts depends on the firm's overall return on capital invested. The estimates, which are available upon request, show that the base-case relationship between dividends and bank type remains unchanged.

explains just 9% of variations in the payout ratio, compared to 62% for the model that uses winsorized data. Thus, as expected, including the outliers in the data set reduces the precision of the estimates.

Models III and IV account for unobservable firm effects by random-effects estimation. Since that approach cannot handle lagged dependent variables, the lagged payout ratio from (1) is dropped. As is evident by comparing model IV with model II, replacing OLS by random-effects estimation has no material effect in the non-winsorized data set beyond increasing the coefficient of determination from 9% to 20%. Model III shows that the combination of winsorized data and random-effects estimation reproduces the base-case results from model I, except that liquidity becomes significant at the 10% level and size becomes even more significant both statistically and economically.

The random-effects approach is problematic in our setting because it must ignore the lagged dependent variable, which is a highly significant determinant in our tests so far and in the existing literature. On the other hand, ignoring unobservable firm effects in order to include the lagged dividend as a determinant might create new problems if the lagged dividend correlates with the unobservable firm effect in the error term. Therefore, we have estimated (1) using the less restrictive GMM-in-systems technique (Andres et al., 2009) as developed by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). As applied to our setting, this approach estimates a system of two types of equations where the variables are specified in levels and first differences. Lagged first differences of the variables are used as instruments for equations in levels, while lagged levels are used as instruments for equations in first differences. Hence, earlier realizations of the variables and of the differenced variables enter the estimation as instruments.

The findings are reported in models V and VI of Table 8. The savings bank dummy in model V is positive and statistically significant, as in all columns to the left. When we also account for time effects by model VI, however, the statistical significance of bank type disappears. This loss of significance is due to the challenge of applying the GMM-in-systems approach to our setting. The problem is caused by a combination of the following factors: there are few observations in the cross section, there are many instruments to be estimated, and there is considerable loss of observations because of the lagging. Specifically, there are on average 21 observations per year in the cross section, we use 111 instruments, and 48 observations are lost by the lagging. Moreover, the data set includes a highly autocorrelated variable (the payout ratio) and a relatively high ratio of time periods (14) to cross-sectional observations (21). The time-persistent payout ratio produces lower variation in the panel than in the cross section. As noted by Roodman (2009), this setting easily generates the overfitted endogenous variables as reflected in the high Sargan test statistic for models V and VI in the table. The resulting loss of power is less evident in model V, where (1) is estimated without time dummies.

Table 8 shows that the base-case findings from Table 7 are independent of whether we winsorize or whether we use random ef-

Table 9
Alternative measures of dividend payout.

Characteristic	Payout measure			
	Div/E	(Div + Rep)/E	Div/CF	(Div + Rep)/CF
Savings bank dummy	0.793***	0.784***	0.501***	0.507***
	(3.34)	(3.34)	(3.90)	(4.00)
Lagged payout	0.302*	0.310*	0.458***	0.458***
	(1.72)	(1.75)	(4.82)	(4.83)
Leverage	−0.04	−0.066	−0.156***	−0.165***
	(−0.69)	(−1.10)	(−3.47)	(−3.69)
Liquidity	0.09	0.09	0.109*	0.110*
	(1.47)	(1.49)	(1.83)	(1.85)
Growth	0.124**	0.125**	0.173**	0.171**
	(2.08)	(2.13)	(2.68)	(2.63)
Size	−0.142*	−0.123	−0.095*	−0.088
	(−1.73)	(−1.49)	(−1.77)	(−1.64)
Constant	0.796	1.08	3.185***	3.327***
	(0.99)	(1.29)	(3.48)	(3.63)
Sample size	211	211	211	211
R^2 adjusted	0.62	0.63	0.72	0.72
F-ratio	19.06***	19.55***	29.75***	29.87***

Notes: This table reports the effect of estimating the base-case model with alternative dividend-payout measures, which are (i) cash dividends (Div) over earnings (E), (ii) cash dividends and repurchases (Rep) over earnings, (iii) cash dividends over cash flow from operations (CF), and (iv) cash dividends and repurchases over cash flow from operations. The denominator in the payout ratio reflects only the earnings or cash flow that belongs to the stockholders. Savings bank dummy equals one if the bank is a savings bank and zero otherwise. Lagged payout is the dependent variable one period earlier, Leverage is total debt over total assets, and Liquidity is the market value of the trade over the year divided by the market value of the stock at year end. We measure Growth as the relative increase in assets over the year, while Size is the log of total assets in NOK1000. We standardize every non-dummy variable by deducting its mean value from each observation and dividing the difference by the variable's standard deviation. Non-dummy data are winsorized at 5% and 95%. The models are estimated on the pooled sample with year dummies (not reported), and we use standard errors adjusted for clustering at the firm level. The *t*-values are shown in parentheses. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once during the period 1989–2002.

* Statistically significant relationships at the 10% level.
** Statistically significant relationships at the 5% level.
*** Statistically significant relationships at the 1% level.

Table 10
Interacting stakeholder control with the firm's growth and size.

Characteristic	Coefficient
Savings bank dummy	0.989***
	(4.38)
Lagged payout	0.199
	(1.12)
Leverage	−0.011
	(−0.17)
Liquidity	0.098*
	(1.85)
Growth	0.158*
	(1.72)
Size	0.014
	(0.22)
Growth · Savings bank dummy	−0.142
	(−1.46)
Size · Savings bank dummy	−0.342**
	(−2.72)
Constant	−1.842***
	(−2.82)
Sample size	211
R^2 adjusted	0.65
F-ratio	19.96

Notes: This table expands the base-case model from Table 7 by interacting stakeholder control with the firm's growth and size. The dependent variable is cash dividends divided by stockholders' earnings. Savings bank dummy equals one if the bank is a savings bank and zero otherwise. Lagged payout is the dependent variable one period earlier. Leverage is total debt over total assets, and Liquidity is the market value of the trade in the stock during the year divided by its market value at year end. We measure Growth as the relative increase in assets during the year, while Size is the log of total assets in NOK1000. We include two interaction terms where we multiply the savings bank dummy by the growth variable and by the size variable, respectively. We standardize every non-dummy variable by deducting the mean value of the variable from each observation and dividing the difference by the variable's standard deviation. Non-dummy data are winsorized at 5% and 95%. The models are estimated on the pooled sample with year dummies (not reported), and we use standard errors adjusted for clustering at the firm level. The *t*-values are shown in parentheses. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once during the period 1989–2002.

* Statistically significant relationships at the 10% level.
** Statistically significant relationships at the 5% level.
*** Statistically significant relationships at the 1% level.

fects or GMM without time effects to account for a possible correlation between independent variables and the error term. Given the problems of using random effects and GMM in our setting, the estimates in the following are based on pooled, winsorized data, fixed-time effects, and cluster-adjusted standard errors.

The second robustness test analyzes the effect of using alternative payout measures. Table 9 summarizes the results. The first model is the base case from Table 7, the second adds stock repurchases to the regular cash dividend, whereas models three and four normalize these two alternative numerators by cash flow from operations rather than by earnings. The table documents that the main result is insensitive to whether we include stock repurchases in the payout or normalize payout by cash flow. The control variables tend to be more significant when we normalize by cash flow, and these two models explain more of the variation in dividend policy.

We have found that dividends are persistent, and that savings banks tend to pay higher dividends than commercial banks do. This pattern might imply, however, that the savings bank dummy in (1) does not reflect differences in dividend levels across the two bank types. Rather, it might reflect differences in dividend growth, since the rather constant dividend-level effect might already be picked up by the lagged, persistent dividend term. In unreported regressions, which are available upon request, we delete lagged dividends from the base-case model. We still find that the role of the bank dummy remains unchanged. As expected, the other determinants become more significant than they are in the base case. Referring to the discussion of the pooled approach, the random-effects approach, and the GMM approach in Table 8, the observed robustness to lagged dividends in Table 9 is a further indication that the lack of independence between lagged dividends and the error term is not what drives our results in the base case.

The analysis so far suggests that, in addition to organizational form and the previous year's dividend, the firm's growth and size matter for the payout decision. In particular, dividends are higher in firms with high growth and low size, which supports the substitute model. Our fourth robustness test explores whether this relationship differs across the two bank types. We analyze this question in Table 10 by interacting firm type with growth and size, respectively. According to the table, higher growth induces higher dividends, and this effect does not differ between the two bank types. For firm size, however, the tendency for smaller firms to pay higher dividends is pronounced only in the savings banks. Thus, firms controlled by non-owners seem to reduce size-related information asymmetry costs by means of their dividend policy.

Corporate governance research argues theoretically and shows empirically that performance might improve when some owners have sufficiently strong incentives and power to monitor management (Becht et al., 2003). This relationship suggests that certain properties of the ownership structure matter for key decisions in the firm, such as the dividend policy. The final robustness test considers how dividends relate to the firm's ownership structure and to the separation between cash-flow rights and voting rights. We also control for dividend-clientele effects by adding a dummy

Table 11
Accounting for ownership structure characteristics.

Characteristic	Hypothesis	Payout measure			
		Div/E	(Div + Rep)/E	Div/CF	(Div + Rep)/CF
Savings bank dummy	O: −; S: +	0.902***	0.893***	0.818***	0.819***
		(3.34)	(3.33)	(3.84)	(3.88)
Largest holding	O: −; S: +	0.017	0.022	−0.09	−0.087
		(0.21)	(0.28)	(−1.30)	(−1.25)
Separation	O: −; S: ?	−0.345***	−0.376***	−0.346***	−0.354***
		(−2.78)	(−3.05)	(−3.20)	(−3.30)
Largest is person	O: −; S: +	0.097**	0.098**	0.023	0.023
		(2.26)	(2.25)	(0.64)	(0.64)
Lagged payout	+	0.224	0.224	0.382***	0.380***
		(1.20)	(1.21)	(3.51)	(3.48)
Leverage	?	−0.013	−0.039	−0.088	−0.099
		(−0.18)	(−0.55)	(−1.40)	(−1.63)
Liquidity	−	0.087	0.087	0.097	0.098
		(1.37)	(1.37)	(1.42)	(1.43)
Growth	?	0.033	0.032	0.075	0.073
		(0.54)	(0.52)	(1.42)	(1.36)
Size	−	−0.115	−0.094	−0.087	−0.079
		(−1.34)	(−1.12)	(−1.62)	(−1.50)
Constant		−0.29	−1.785***	−0.656	−0.657
		(−0.42)	(3.23)	(−0.97)	(−0.98)
Sample size		202	202	202	202
R^2 adjusted		0.63	0.64	0.72	0.72
F-ratio		133.87***	133.51***	228.08***	275.05***

Notes: This table expands the models from Table 9 by variables that account for ownership concentration, direct (personal) ownership, and for the separation between ownership and control, respectively. The alternative dependent variables are (i) dividends (Div) over earnings (E), (ii) dividends and repurchases (Rep) over earnings, (iii) dividends over cash flow from operations (CF), and (iv) dividends and repurchases over cash flow from operations. The denominators of these payout ratios reflect only the earnings or cash flow that belongs to the stockholders. Savings bank dummy is a variable that equals one if the bank is a savings bank and zero otherwise. Largest holding is the ownership fraction of the largest owner, and Separation is aggregate cash-flow rights in the firm minus aggregate voting rights divided by aggregate cash-flow rights. Largest is person is a dummy variable which is 1 if the largest owner is a person and zero otherwise. Leverage is total debt over total assets; Liquidity is the market value of the trade in the stock during the year divided by its market value at year end. We measure Growth as the relative increase in assets during the year, while Size is the log of total assets in NOK1000. In the Hypothesis column, O refers to the Outcome model, S is the Substitution model, and the signs reflect the predicted relationship between dividends and the independent variable in question. We standardize every non-dummy variable by deducting the mean value of the variable from each observation and dividing the difference by the variable's standard deviation. Non-dummy data are winsorized at 5% and 95%. The models are estimated on the pooled sample with year dummies (not reported), and we use standard errors adjusted for clustering at the firm level. The *t*-values are shown in parentheses. The sample is all commercial banks and savings banks listed on the Oslo Stock Exchange by year end at least once during the period 1989–2002.

** Statistically significant relationships at the 5% level.

*** Statistically significant relationships at the 1% level.

variable, which is one if the largest stockholder is a person and zero otherwise.

According to the outcome model, higher ownership concentration induces higher dividend payout. The substitute model predicts the payout will be lower. We use the stake of the firm's largest stockholder to measure ownership concentration. However, since ownership concentration is consistently low across the sample because of a regulatory constraint, it would be disturbing if this variable were significant in the regression. Indeed, such a result would question our rationale for ignoring conflicts between stockholders in the first place, and hence would question our argument for having made a particularly clean test.

As in Table 3, we measure separation by the ratio $sep \equiv (c - v)/c$, where c is the owners' aggregate fraction of cash-flow rights in the firm and v is their aggregate fraction of voting rights. A higher *sep* means more separation and hence weaker stockholder control. Hence, the predicted relationship between *sep* and dividends is negative under the outcome model and positive under the substitute model. These two alternative relationships are the agency effect of separation on dividend payout.

Because of peculiarities in our sample, however, *sep* also reflects a financial-drain effect of dividends, which cannot be ignored. Because v is a constant 25% in all savings banks, differences in *sep* across savings banks are exclusively due to differences in the stockholders' fraction of residual cash-flow rights, c. In particular, *sep* increases monotonically with c in the savings bank sample. This relationship implies that the stronger the separation, as measured by a high *sep*, the higher the dividend that is required to achieve a given payout ratio. To illustrate, suppose total earnings are 100 units and that the firm chooses a payout ratio of 80%. This means that the required dividend is 8 units if stockholders own 10% of the equity. If they own 70%, however, the required dividend for the 80% payout is 56 units rather than just 8. Thus, for a fixed payout ratio, the drain on retained earnings increases proportionally as *sep* grows. Because of the cost of raising new equity (Myers and Majluf, 1984), the drainage effect on retained earnings dictates a negative relationship between *sep* and dividends.

Overall, these results mean that under the outcome model, both the agency effect and the financing effect imply a negative relationship between *sep* and dividends. Under the substitute model, the relationship is positive if the agency effect dominates, and is negative if the financing effect dominates.

Table 11 reports the results across the four alternative payout measures. Four features emerge. First, the role of the savings bank dummy is unchanged. Second, and reassuringly, ownership concentration is not a significant determinant of payout. Third, the relationship between separation and dividends is negative and significant. Considering the consistent findings in favor of the substitute model so far, we interpret such consistency as evidence that the negative financial-drain effect of separation dominates the positive agency effect. Finally, the significant, positive relationship between dividends and personal ownership under two of the payout measures supports the clientele argument that the composition of stockholder types in the firm influences its dividend decision. Moreover, the positive sign is consistent with the substitute model.

Summarizing, we have shown that after having accounted for differences in past dividends, financial leverage, stock liquidity, firm growth, firm size, and unobservable industry effects, dividends are significantly higher both statistically and economically in non-owner-controlled firms than in owner-controlled firms. The robustness tests document that this result survives under alternative data sets, dividend payout measures, and when we account for ownership structure differences, interaction effects, the separation between ownership and control, and for unobservable firm and industry characteristics. Moreover, a higher share of stockholders' earnings is paid out when the firm is small and when it grows fast. Overall, this evidence, which is based on the population rather than a sample, is consistent with the substitute model and inconsistent with the outcome model.

5. Summary and conclusions

Conflicts of interest between the stakeholders might reduce the firm's ability to create value. This paper uses a novel approach in order to analyze whether dividend policy plays a role in this context by influencing the actual as opposed to the potential conflict of interest between the firm's stakeholders. In particular, we study whether the fraction of earnings paid out as dividends depends on the potential seriousness of the agency problem as reflected in the distribution of control rights among the firm's owners and non-owners. We find that it does, because larger potential agency conflict between these two stakeholder groups tends to make the strong stakeholder choose a dividend policy that reduces the actual agency conflict.

We use an empirical approach that focuses on firms where the agency conflict between large and small owners can be ignored because regulation mandates relatively low ownership concentration in all firms. In contrast, potential conflicts between owners and non-owners vary more than usual across the sample. This cross-sectional variation does not happen because ownership concentration varies from firm to firm, but rather because firm control belongs to the owners in one organizational form and to non-owners in the other. Because of the potential conflict of interest, these two parties might have opposing views on the firm's optimal dividend policy. This sample property is our key to a clean test of how the seriousness of stakeholder conflicts can be influenced by the dividend policy.

Our major finding is that firms controlled by non-owner stakeholders pay out significantly higher dividends than do comparable firms controlled by owners. This evidence, which is robust to alternative model specifications and econometric techniques, is consistent with the substitute model and inconsistent with the outcome model. The finding suggests that dividends are used to mitigate inherent agency conflicts in the firm's stakeholder structure. That is, when the potential agency conflict in the firm increases, the actual conflict is made smaller by a higher dividend payout. This inference is supported by indirect evidence that strong non-owner stakeholders use the current dividend policy to build valuable reputation with weak owners in the future.

Acknowledgements

We acknowledge valuable feedback from an anonymous referee, seminar participants at BI, the 2009 European Finance Association Meetings, Instituto de Empresa, Universitat Autònoma de Barcelona, Universitat de les Illes Balears, and from Rolf E. Bygdnes, Miguel Garcia-Cestona, Esteban Lafuente, Kasper Meisner Nielsen, Øyvind Norli, Charlotte Ostergaard, Richard Priestley, Trond Randøy, David C. Smith, Bogdan Stacescu, and R. Øystein Strøm. This research was partly conducted while Bøhren was visiting Instituto de Empresa and Humboldt-Universität zu Berlin. We are grateful for financial support from the Norwegian Association of Researchers and the Banking Research Fund at BI.

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