

# **Corporate Governance and Controlling Shareholders**

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## **Corporate Governance and Controlling Shareholders**



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Riga, September 2004

*Anete Pajuste*



# Introduction and Summary

The classical corporation, as described by Berle and Means (1932), was characterized by ownership that is dispersed between many small shareholders, yet control was concentrated in the hands of managers. This ownership structure created the conflict of interest between managers and dispersed shareholders. More recent empirical work (see, e.g., La Porta et al. (1999) and Barca and Becht (2001)) has shown that ownership in many countries around the world is typically concentrated in the hands of a small number of large shareholders. As a result, an equally important agency conflict arises between large controlling shareholders and minority shareholders. On the one hand, large shareholders can benefit minority shareholders by monitoring managers (Shleifer and Vishny, 1986, 1997). On the other hand, large shareholders can be harmful if they pursue private goals that differ from profit maximization or if they reduce valuable managerial incentives (Shleifer and Vishny, 1997; and Burkart et al., 1997).

In the presence of several large shareholders, a conflict of interest may arise between these controlling shareholders (see, e.g., Zwiebel (1995), Pagano and Röell (1998), and Bennedsen and Wolfenzon (2000)). They can compete for control, monitor each other, or form controlling coalitions to share private benefits. The question arises as to what determines the role of controlling shareholders in various firm policies and performance. Previous literature has noted that the incentives to expropriate minority shareholders are often exacerbated by the fact that the capital invested by the controlling shareholders is relatively lower than the voting control they achieve through the use of dual class shares (i.e., shares with differential voting rights) or stock pyramids (e.g., Claessens et al., 2002). Moreover, the identity of the shareholder (e.g., family vs. financial institution) is important for understanding the role of controlling shareholders (see, e.g., Holderness and Sheehan (1988), Volpin (2002), Claessens et al. (2002), and Burkart et al. (2003)). Using Swedish data, Cronqvist and Nilsson (2003) show that the agency costs of family owners are larger than the agency costs of other controlling owners.

The role of controlling shareholders in transition countries is exacerbated by the fact that the legal and general institutional environment remains underdeveloped. In such an environment, strong owners may be the second best option to weak legal protection of investors (La Porta et al., 1997, 1998). The transition countries of central and eastern Europe are experiencing increasingly concentrated control structures, typically with the controlling

owner actively involved in the management of the firm (Berglöf and Pajuste, 2003). Moreover, experience from transition countries suggests that foreign direct investment, where investors take controlling positions, have been critical to the successful restructuring of privatized firms.

This thesis consists of four self-contained chapters that empirically examine various corporate governance issues. The common theme throughout the thesis is the focus on large shareholders, their identity, as well as to whether they deviate from the principle of one share-one vote. In particular, I examine the effect of large shareholders on firm value (in the first and third chapters), dividend policies (in the second chapter), and stock returns (in the final chapter). The first two chapters employ the data from Finland, the third looks at companies in seven European countries where deviations from one share-one vote are common, and the final one explores the evidence from transition countries.

The first chapter, “Multiple large shareholders and firm value,” co-authored with Benjamin Maury, investigates the effects of having multiple large shareholders on the valuation of firms. We present a simple model that shows that the link between control structures with multiple blocks and firm value is driven by the relative size, as well as the identity of the blockholders. Using a panel of 136 non-financial Finnish firms during 1993-2000, we show, consistent with our model, that a more equal distribution of votes among large blockholders has a positive effect on firm value. This result is particularly strong in family-controlled firms suggesting that families (which typically have managerial or board representation) are more prone to private benefit extraction if they are not monitored by another strong blockholder. We corroborate previous findings that firm value decreases if the largest shareholder holds more votes than equity rights. Finally, we find that a higher voting stake held by another family reduces firm value in family-controlled firms, whereas a higher voting stake held by another non-family owner improves firm value in family-controlled firms. These results confirm our theoretical arguments that the incentives to collude with or to monitor the controlling shareholder are affected by the type of the individual owners.

In the second chapter, “Controlling shareholders, agency problems, and dividend policy in Finland,” co-authored with Benjamin Maury, we report that the ownership and control structure significantly affects the dividend policy in Finnish listed firms. Using a sample of 133 Finnish firms in 1999, we show, consistent with the agency models of dividends (La Porta et al., 2000), that the dividend payout ratio is negatively affected by the concentration of control. Moreover, the results show that the negative effect of control concentration is not driven solely by the voting power of the largest shareholder, but also by the voting power of

the second largest shareholder. These findings suggest that there is a potential collusion between the largest shareholders in generating private benefits that are not shared with minority shareholders. This chapter argues that various owner types may have different preferences for dividends due to agency problems, or tax reasons. The results show that private controlling shareholders are associated with higher dividends which can be explained by the preferential tax treatment of dividends for private investors. Among the private controlling shareholders, the ones who hold the CEO position, however, tend to pay lower dividends. Therefore, the private owners face a trade-off between tax advantages and private benefit extraction. Finally, we report that the separation of ownership and control through high-voting shares and pyramid control structures does not have a significant impact on dividend policy in Finnish listed firms. The companies that deviate from one share-one vote are predominantly owned by private owners. There are, however, considerable differences within the private owners' category that rests on the trade-off between the tax advantages of dividends and private benefits. In this context, the controlling owner's type seems to be a more important factor than pure separation of ownership and control.

The third chapter, "Determinants and consequences of the unification of dual-class shares," explores the reasons why an increasing number of firms in continental Europe are deciding to unify their shares into a single class, and the consequences of this restructuring. I use a panel data set of 493 publicly traded firms in seven European countries (Denmark, Finland, Germany, Italy, Norway, Sweden, and Switzerland) where dual-class share structures are widely used. Out of this sample, a total of 108 firms unified their dual-class shares in the period 1996-2002, while the remaining 385 firms stayed dual-class. The results show that firms that unify their dual-class shares are more active in issuing new equity, make more acquisitions, and have higher industry growth opportunities. These characteristics are common to firms that particularly care about their market valuation. As a result, it can be concluded that firms carry out the unification with an aim to increase firm value. The ex post analysis of the unification shows that firms indeed reach their goal of increased market valuation. It is interesting to note that the recent changes in corporate governance environment have created a situation when the reasons that once caused the introduction of dual-class shares, i.e. the need to issue new equity and to defend a takeover, are the same that now motivate firms to switch back to one share-one vote. Meanwhile, higher value of control rights (e.g. high separation between control and cash flow rights) significantly reduces the likelihood of unification. The research also presents interesting evidence that a firm that unifies its dual-class shares experiences increased market value and sales growth after the

unification compared to the firm itself before the unification. However, comparing firms with similar growth opportunities, the firms that unify experience higher market values and lower leverage, but no difference in sales growth compared to other dual-class firms. This result suggests that dual-class share structure per se does not preclude firm from growth unless the firm depends on equity capital.

The final chapter, “Do good governance provisions shelter investors from contagion? Evidence from the Russian crisis,” studies how the Russian crisis of 1998 affected listed firms in transition economies. The data cover 417 companies in transition countries that were listed before the Russian crisis, and include financial, industry, ownership, and stock market information. Results show that stock returns were lower for firms competing with imports from Russia, for firms exporting products to Russia, for more levered firms, for firms without a foreign blockholder, and for firms operating in countries with poor legal shareholder protection. The paper presents evidence that both firm- and country-level characteristics are important in overcoming the effects of a crisis. Firm-specific characteristics, however, play a bigger role for companies operating in countries with weaker corporate governance. The data show that, for most of the firm characteristics, more exposed companies in countries with better investor protection perform at least as good as or better than less exposed firms in countries with weaker investor protection.

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# Chapter 1

## Multiple Large Shareholders and Firm Value\*

with Benjamin Maury

### 1. Introduction

Recent empirical work has shown that ownership is typically concentrated in the hands of a small number of large shareholders (e.g., La Porta et al., 1999; and Barca and Becht, 2001). This evidence has shifted the focus from the traditional conflict of interest between managers and dispersed shareholders (Berle and Means, 1932) towards an equally important agency conflict between large controlling shareholders and minority shareholders. On the one hand, large shareholders can benefit minority shareholders by monitoring managers (Shleifer and Vishny, 1986, 1997). On the other hand, large shareholders can be harmful if they pursue private goals that differ from profit maximization or if they reduce valuable managerial incentives (Shleifer and Vishny, 1997; and Burkart et al., 1997). In this paper, we address a different question: In which way do multiple large shareholders, as opposed to just one large shareholder, benefit or harm minority shareholders?

Outside the United States, the presence of several large shareholders<sup>1</sup> with substantial blocks of shares is common (Barca and Becht, 2001). Data on 5232 European companies collected by Faccio and Lang (2002) show that 39% of firms have at least two blockholders that hold at least 10% of the voting rights, and 16% of firms have at least three blockholders. Therefore, it is important to study the allocation of control between multiple large shareholders, as well as its impact on firm performance. The theoretical literature provides models in which multiple blockholders compete for control (Bloch and Hege, 2001), monitor

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<sup>1</sup> In this paper, terms *large shareholder* and *blockholder* are used interchangeably as synonyms.

the controlling shareholder (Winton, 1993; Pagano and Röell, 1998; Bolton and Von Thadden, 1998), and form controlling coalitions to share private benefits (Zwiebel, 1995; Pagano and Röell, 1998; Bennedsen and Wolfenzon, 2000; Gomes and Novaes, 2001).

Empirical evidence on the effect of multiple large shareholders on firm performance has been limited. For Italy, Volpin (2002) provides evidence that valuation is higher when control is to some extent contestable as in the case in which a voting syndicate controls the firm. Lehman and Weigand (2000) report that the presence of a strong second largest shareholder enhances profitability in German listed companies. Faccio et al. (2001) test the effect of multiple large shareholders on dividends. They find that the presence of multiple large shareholders dampens expropriation in Europe (due to monitoring), but exacerbates it in Asia (due to collusion). Most of these empirical studies focus on the simple presence of multiple blockholders, and not on the characteristics of individual blockholders.

We present a simple model in which multiple blockholders can have two different roles in firms. On the one hand, by holding a substantial voting block, a blockholder has the power and the incentives to monitor the largest shareholder and therefore the ability to reduce profit diversion. On the other hand, the blockholder can form a controlling coalition with other blockholders and share the diverted profit. One of the key contributions of this paper is the derivation of conditions under which the diversion of profits can be higher in firms with multiple blockholders than in firms with a single blockholder. Related to the first role, we hypothesize that firm value is positively affected by the ability to challenge the largest block, i.e., by contestability. Related to the second role, we hypothesize that firm value is negatively affected by the presence of blockholders, who, by colluding, can increase the efficiency of private benefit extraction.

Using a sample of 136 non-financial Finnish listed companies that have at least one large shareholder with more than 10% of the votes, we find that the contestability of the largest shareholder's voting power (using different measures) has a positive effect on firm value, as measured by Tobin's Q. The data show that firm value increases when the voting power is distributed more equally. The contestability of control power is particularly important in family-controlled firms. As families typically have managerial or board representation, this result suggests that firm value can decrease if the outsiders' ability to monitor the insiders is low.

Interestingly, we find that a higher voting stake by another family is *negatively* related to firm value in family-controlled firms, whereas a higher voting stake held by another non-family owner, typically a financial institution, is *positively* related to firm value in family-

controlled firms. These results suggest that the incentives to collude with the largest shareholder or to monitor the largest shareholder are significantly affected by the type of the blockholder. Consistent with our model, we explain this result by suggesting that some coalitions (e.g., two families) can make profit diversion easier. Meanwhile in other coalitions, expropriation can be more difficult.

The paper proceeds as follows. Section 2 presents a model on the effects of multiple large shareholders on firm value, and derives testable hypotheses. Section 3 describes the data set and variables. Section 4 presents regression results. Section 5 offers robustness checks, and Section 6 concludes.

## 2. Multiple blockholders and firm value: a simple model

Previous research shows that the presence of large shareholders, who can monitor the actions of the manager, can benefit minority shareholders (e.g., Shleifer and Vishny, 1986). Following this reasoning, multiple large shareholders can reduce profit diversion by monitoring the controlling shareholder (Pagano and Röell, 1998). The previous theoretical models, however, emphasize the simple presence of multiple blocks. In our model, we show how the identity and relative size of the blockholders can affect the level of private benefit extraction. In particular, we present the conditions under which the presence of another block can harm minority investors.

We follow the model set-up in La Porta et al. (2002) and assume that the diversion of profits is inefficient – the controlling coalition receives  $sRI - c(s, \bullet)RI$ , where  $RI$  is the firm's profits ( $I$  is the amount of cash invested with the gross rate of return  $R$ ),  $c(s, \bullet)$  is the cost-of-theft function, i.e., the share of profits that is wasted when  $s$  is diverted.<sup>2</sup> We assume that  $c_s > 0$  and  $c_{ss} > 0$ , i.e. that the marginal cost of stealing is positive, and the marginal cost of stealing rises as more is stolen. Firm valuation is measured by  $Q = (I - s)R$ .

We assume that the largest blockholder is the manager, which is always included in the controlling coalition.<sup>3</sup> In firms with professional managers, we still assume that the largest blockholder has the power to influence managerial decision-making, as well as tools to extract private benefits at the expense of minority shareholders.<sup>4</sup> In the data, we observe that

<sup>2</sup> As in La Porta et al. (2002), we assume that the ownership structure has been chosen in the past. Alternatively, the ownership structure can be endogenized, as, for example, in Stulz (1988) or Shleifer and Wolfenzon (2002).

<sup>3</sup> This assumption stems from the fact that the largest block typically has higher voting power than the rest of the blocks combined in our sample.

<sup>4</sup> In this paper, we focus on the agency problem between large shareholders and minority shareholders, disregarding the traditional principal-agent problem between professional managers and shareholders.

when the largest shareholder lacks managerial representation, managers and board members themselves have very low ownership and control stakes. Therefore, the aggregate holdings of top executives are not likely to alter the control power of the blockholders.

Under these assumptions, the controlling coalition maximizes

$$V^C = \alpha_n (1 - (1-k)s)RI + (1-k)sRI - c(s, \bullet)RI, \quad (1)$$

where  $\alpha_n$  is the sum of the cash-flow stakes held by the coalition partners, and  $k$  is the probability to recover the diverted profits, which we call the *contestability* of the controlling coalition's power. The contestability increases with the voting power of the blockholders outside the coalition ( $v_{out}$ ). We assume that there is no additional cost to monitoring, i.e., just by having a large minority stake (more than 10% of the shares), the shareholder can order, for example, an audit, and, in so doing, the diverted profits will be returned to the firm with probability  $k$ . The first term in (1) is the share of after-theft cash flows (or dividends), and the remaining two terms are the benefits from expropriation. The diverted profit is shared among coalition partners through efficient bargaining.<sup>5</sup>

The first order condition is given by

$$V_s^C = - (1-k)\alpha_n + (1-k) - c_s(s, \bullet) = 0, \quad (2)$$

which can be rewritten as

$$c_s(s, \bullet) = (1 - \alpha_n)(1-k). \quad (3)$$

The optimal  $s^*$  is determined from equation (3). We assume that the parameters in the cost-of-theft function are such that all the optimal private benefits ( $s^*$ ) are within the limits  $s^* \in [0, \hat{s}]$ , where  $\hat{s}$  is the maximum fraction of the profits that can be diverted.

We can now derive testable hypotheses for the ownership structures with multiple blockholders. First, assume that the marginal cost of stealing depends only on the number of coalition partners. In particular, assume that the marginal cost of stealing is the same or higher in the multiple blockholder case as compared to the one blockholder case.<sup>6</sup> In this case, the simple presence of multiple blocks reduces the private benefit extraction (see Figure 1A).

<sup>5</sup> The relative distribution of diverted profits has no effect on the hypotheses tested in this paper. Therefore, this discussion, as well as the derivation of feasibility and sustainability conditions for the coalition formation is not reported but is available from the authors upon request.

<sup>6</sup> The marginal cost of stealing can increase with the number of coalition members if it becomes harder to keep the diversion of profits secret with several partners.

### Figure 1. Equilibrium level of private benefit extraction (two blockholder case)

The figure shows the equilibrium level of private benefit extraction ( $s$ ) depending on the presence of one or two controlling shareholders. The equity ownership stakes of the largest and second largest blockholders are  $\alpha_1$  and  $\alpha_2$ , respectively. The contestability of the largest blockholder's control power is  $k$ . The marginal cost-of-theft function with one and two blockholders is  $c_s(s, 1)$  and  $c_s(s, 2)$ , respectively. The equilibrium level of private benefit extraction with one controlling shareholder is  $s_l$ , with two blocks colluding it is  $s_c$ , and with the second block monitoring the first block it is  $s_m$ . In Figure 1A, it is assumed that the marginal cost of theft is higher if the coalition is formed by two blockholders, as compared to just one blockholder. In Figure 1B, it is assumed that the marginal cost of theft is lower if the coalition is formed by two blockholders, as compared to just one blockholder.

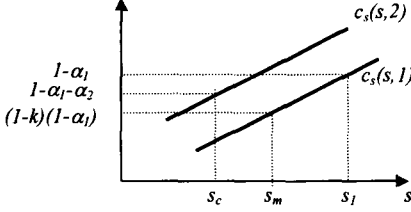


Figure 1A

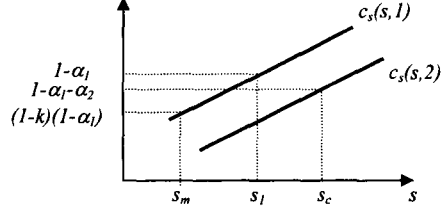


Figure 1B

For example, assume that the cost-of-theft function only depends on the diverted profit,  $s$ , irrespective of the coalition structure. By differentiating the first order condition with respect to  $k$  (equation 4) and  $\alpha_n$  (equation 5), and rearranging terms, we get

$$\frac{ds^*}{dk} = -\frac{1-\alpha_n}{c_{ss}(s, \bullet)} < 0, \quad (4)$$

$$\frac{ds^*}{d\alpha_n} = -\frac{(1-k)}{c_{ss}(s, \bullet)} < 0. \quad (5)$$

Under current assumptions, the private benefits ( $s^*$ ) are strictly lower when there is more than one blockholder. If the controlling coalition consists of only the largest shareholder,  $\alpha_n = \alpha_1$ , then private benefits are lower because the remaining blockholders have some monitoring power,  $k > 0$ . If, in turn, the controlling coalition suppresses the remaining contestability, i.e.,  $k = 0$ , then private benefits are lower because the controlling coalition internalizes a larger fraction of cash-flow rights than in the single blockholder case,  $\alpha_n > \alpha_1$ . The latter result is consistent with the alignment effect described by Bennedsen and Wolfenzon (2000). This gives us the first testable hypothesis:

*Hypothesis 1: An increase in the contestability of the controlling coalition's power should increase firm value.*

The assumption that the marginal cost of stealing increases with the number of coalition partners implies that the simple presence of multiple blockholders should have a positive

effect on firm value. This is inconsistent with several previous studies (e.g., Faccio et al., 2001) that find rather mixed results on the effect of the presence of multiple blockholders. In this paper, we argue that certain coalitions can actually *reduce* the marginal cost of stealing either by (i) increasing the voting power of the coalition, or (ii) adding extra knowledge and resources for hiding the diversion of profits. For these two reasons, from now on, assume that the marginal cost of stealing is *lower* in the multiple blockholder case as compared to the one blockholder case; see Figure 1B.

Higher voting power of the coalition may allow for more unanimous decision making and better hiding of profit diversion. Following this reasoning, we can express the cost-of-theft function as  $c(s, v_{in})$ , where  $v_{in}$  is the total voting power of the coalition. We assume that  $c_{sv} < 0$ , i.e. the marginal cost of stealing decreases with the voting power of the coalition. Recall that  $k$  depends on the voting power of the blockholders outside the controlling coalition. This means that if a blockholder with higher voting power is added to the controlling coalition, the remaining contestability is lower than if a blockholder with lower voting power joins the coalition,  $dk / dv_{in} < 0$ . Differentiating equation (3) with respect to  $v_{in}$ , and rearranging terms, we get

$$\frac{ds^*}{dv_{in}} = \frac{-(1 - \alpha_n) \frac{dk}{dv_{in}} - c_{sv}}{c_{ss}} > 0. \quad (6)$$

The first term in the nominator of equation (6) shows that an increase in  $v_{in}$  has an adverse effect on private benefits extraction because it reduces the remaining contestability ( $k$  decreases). The second term in the nominator shows that private benefits increase, as  $v_{in}$  increases, because the marginal cost of stealing decreases due to higher voting power in the hands of the controlling coalition ( $c_{sv} < 0$ ). This result suggests that the private benefits can be *higher* with multiple blockholders, if the negative effect of the added voting power (equation 6) is higher than the positive effect of the added cash-flow rights (equation 5); see Figure 1B. Results (5) and (6) combined give us the second testable hypothesis:

*Hypothesis 2: Firms with higher voting power and lower cash-flow rights held by the controlling coalition should have lower firm value.*

Hypothesis 2 suggests that high voting power gives discretion in private benefit extraction (low contestability), whereas low cash-flow ownership reduces the incentive effect.<sup>7</sup>

<sup>7</sup> This is consistent with both theoretical papers (Grossman and Hart, 1988; Harris and Raviv, 1988; Bennedsen and Wolfenzon, 2000) and empirical work (La Porta et al., 2002; Claessens et al., 2002; Cronqvist and Nilsson, 2003) showing that the negative effect of large shareholders is magnified if there is a substantial departure from one share - one vote.

The marginal cost of stealing can decrease with multiple blockholders if certain type of blockholders can add extra knowledge and resources for hiding the diversion of profits. We can express the cost-of-theft function as  $c(s,a)$ , where  $a$  is the blockholder's ability to reduce the marginal cost of stealing, and hence,  $c_{sa} < 0$ . What kinds of blockholders are capable of reducing the marginal cost of private benefit extraction? We propose that the marginal cost of private benefit extraction is likely to be higher if the controlling coalition includes a financial institution as compared to, for example, a family. Since the opportunity cost of getting caught for diverting the firm's proceeds presumably is higher for financial institutions that are supervised by regulatory authorities, diversion is less likely to be an attractive alternative. It is easier for two families to form a coalition and extract private benefits within the legal bounds, than for a family and, for example, a fund manager. The latter case is more likely to be a violation of law.

Differentiating equation (3) with respect to  $a$ , and rearranging terms, we get

$$\frac{ds^*}{da} = -\frac{c_{sa}}{c_{ss}} > 0. \quad (7)$$

This result suggests that the private benefits can be higher with multiple blockholders if the negative effect of the added ability to hide profits (equation 7) is higher than the positive incentive effect from higher cash-flow stake (equation 5). We can now state the final testable hypothesis:

*Hypothesis 3: Firm value should be lower if the controlling coalition is formed by blockholders that can jointly reduce the marginal cost of stealing.*

Related to Hypothesis 3, the model could also be tested in a cross-country setting. If a certain institutional environment can reduce the marginal cost of stealing by coalitions consisting of multiple blockholders, the model can explain differences in profit diversion among countries. For example, the model can explain the results in Faccio et al. (2001) suggesting that other large shareholders in Asian companies typically are long-standing allies of the largest shareholder (i.e., they could reduce the marginal cost of stealing), while other large shareholders in Europe tend to monitor the largest shareholder.

### 3. Data

#### 3.1. Sample

We collect data on ownership structures in Finnish listed companies during 1993-2000. The total number of firm-year observations with ownership data is 804. From the initial sample, we exclude banks and insurance companies. Since the focus of the paper is on the role of blockholders, we also exclude firm-years that do not have any blockholder with at least 10% of the votes. As a result, our unbalanced panel used in the analyses consists of 136 firms and a total of 612 observations over the eight-year period.

The main source for ownership data is the yearbook *Pörssitieto*. The book reports the cash-flow ownership and votes of the 20 largest shareholders ranked by ownership. Where the data are inadequate in the book, we use firms' annual reports. We collect data on equity, votes, and the identity (type) of the three largest owners in each firm. We classify the shareholders into the following types: family, corporation, financial institution, state, and other. Ownership by families is aggregated to include family members with the same surname. Families are assumed to own and vote collectively. *Pörssitieto* sums up the ownership of financial firms belonging to various banking and insurance groups, although these do not legally form a group. We use the same group classification.

We have tried to identify the ultimate owners in Finnish listed companies. We include indirect holdings through private firms by private persons when they are reported among the 20 largest shareholders. If a corporation or financial institution owns a company in our sample, we check further to see if it has a majority owner and report the ultimate owner's type, if there is one. If the owner is a private corporation and none of the insiders (board members and managers) have a controlling stake in it, we report this owner type as a corporation. The ownership data are at the end of the financial year. The fact that all ownership data are not from exactly the same date does not cause a problem, because the ownership structures tend to be stable in the vast majority of firms over the studied period.

#### 3.2. Variable descriptions

The main proxy for firm valuation (the  $Q$  of the model) is Tobin's  $Q$ , which is defined as the market value of assets divided by the replacement cost of assets. To calculate the market value of assets, we take the sum of the market value of outstanding shares and the book value of debt. If a firm has more than one share class listed, we sum the market values of the different share classes. To estimate the market value of an unlisted share class, we use the price of the listed share class times the number of unlisted shares to get an implied value of



the unlisted share class.<sup>8</sup> Our estimate of the denominator of Tobin's Q, the replacement value of the firm's assets, is the book value of total assets. To reduce the impact of extreme values, we censor the Tobin's Q variable at the 5th and 95th percentiles, setting extreme values to the 5th and 95th percentile values, respectively. The market value of equity, the book value of assets, and all other accounting data for the control variables come from *Datastream*. If the firm is not covered by *Datastream*, we add the accounting data from available annual reports.

Hypothesis 1 suggested that firm valuation increases with the contestability of the largest shareholder's power. We use several proxies for the contestability of power, the  $k$  from the model. The first is the Herfindahl index (HI\_differences) measured by the sum of squares of the differences between the first and the second largest voting stakes, and the second and the third largest voting stakes,  $(\text{Votes } 1 - \text{Votes } 2)^2 + (\text{Votes } 2 - \text{Votes } 3)^2$ . The second measure, called HI\_concentration, is a proxy for the total concentration of the blockholders' voting power. HI\_concentration is calculated as the sum of squares of the three largest voting stakes,  $(\text{Votes } 1)^2 + (\text{Votes } 2)^2 + (\text{Votes } 3)^2$ . Both Herfindahl measures are transformed into logarithms to control for skewness,<sup>9</sup> and they are expected to have a negative relation to firm value.<sup>10</sup>

Another measure of contestability used in our study is the Shapley value, which is the probability that a particular shareholder is pivotal in forming a majority coalition (more than 50% of the votes). To calculate the Shapley value, the three largest blockholders are treated as individual players, while the rest are treated as an "ocean", for which the Shapley value is the continuous version for oceanic games (Milnor and Shapley, 1978). If the largest block holds more than 50% of the votes, the Shapley value is equal to one. If the largest block does not hold a majority, the contestability of the largest shareholder's power increases with lower Shapley values. Hence, the relation between the Shapley value of the largest shareholder and firm value is expected to be negative.

Although the Herfindahl indices and the Shapley value have more empirical appeal because they are continuous measures, we also introduce a dummy variable, called *High contestability dummy*, which takes into account the important legal minority shareholder rights assigned to shareholders with at least 10% of shares, such as, for example, the right to

<sup>8</sup> One can argue that this estimation method could bias our measure of Tobin's Q if there is a large difference in the prices of high and low voting shares (the voting premium). This is unlikely to be a problem in our data, because the voting premiums during the sample period generally have been low (see also Nenova, 2003).

<sup>9</sup> If HI\_differences is zero, the  $\log(\text{HI\_differences})$  is set equal to the lowest value of  $\log(\text{HI\_differences})$  among all other observations. There is only one such case.

request an extraordinary general meeting or appoint an additional auditor. The *High contestability dummy* takes a value of one if the two largest shareholders cannot form a majority, and there is at least one more blockholder (with 10% of the votes). This variable captures situations in which even with two blockholders forming a coalition, there is a blockholder who can contest the power of the controlling coalition. The relation between the *High contestability dummy* and firm value is expected to be positive.

Hypothesis 2 suggested that firm valuation decreases with a higher wedge between the voting power and the equity ownership. In particular, we want to disentangle the incentive effect associated with cash flow rights from the entrenchment effect associated with having control rights in excess of cash-flow ownership. We use the equity stake of the largest shareholder, to measure the incentive effect, and control-to-ownership ratio, to measure the entrenchment effect that can arise when the largest shareholder has less equity participation than control.

Four additional variables are introduced to control for factors that have been shown to have an impact on Tobin's Q. The control variables include firm size, financial leverage, sales growth, and asset tangibility. Firm size is measured by the logarithm of total assets, and is expected to have a negative effect on firm value as larger firms are, presumably, in a more mature stage of their life cycle. Leverage is measured by the book value of all long-term liabilities divided by total assets. Leverage can play a disciplinary role by limiting the free cash flow at hand, and hence reduce profit diversion. However, leverage can also have a negative effect if it increases the risk of financial distress and bankruptcy. Hence, we do not have a clear prediction on the relation between leverage and firm value. Sales growth is measured by the percentage change in sales year-on-year. Since faster growing companies tend to have higher valuations, we expect a positive relation between sales growth and firm value. Asset tangibility is the ratio of tangible assets divided by total assets. Firms with lower asset tangibility presumably have a higher proportion of intangible assets (e.g., human capital) generating the cash-flows. Therefore, we expect a negative relation between asset tangibility and Tobin's Q. We cap the leverage and sales growth variables at the 5th and 95th percentiles to reduce the weight of outliers.

The regressions also include year dummies to account for time effects, and industry dummies to account for effects due to the nature of firm's industry. We follow the Helsinki

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<sup>10</sup> The results are qualitatively the same if we do not make the logarithmic transformations of the Herfindahl indices before including them in the regressions.

Stock exchange classification of industry groups, and construct seven industry dummies: Food, Industry, Investment, Media, Telecommunications, Trade, and Other.

### *3.3. Descriptive statistics*

Panel A of Table 1 presents summary statistics for variables used in this study. The average Tobin's Q across all firm-years is 1.39. The largest shareholder has on average 42.3% of the voting rights and 33.5% of the cash-flow rights. The average voting stakes of the second and third largest shareholders are 11.6% and 5.9%, respectively. The control-to-ownership ratio is the highest for the largest shareholder (1.36). The second largest shareholder has the average control-to-ownership ratio of 1.24, and the third largest shareholder 1.09. The ownership and control variables tend to be highly correlated, therefore, to avoid problems with multicollinearity, the control contestability variables have to be estimated in separate regressions.

The distribution of votes and cash-flow rights held by the largest shareholder in Finnish listed companies is displayed in Panel B of Table 1. Family is the most common ownership type among the largest shareholders (36.3% of total). Further classification shows that if a family is the largest shareholder, it almost always has a representative among managers or board members. The second largest ownership category is corporations, controlling 26.3% of the firms. Financial institutions control 12.6% of the firms but with smaller average stakes. The (unreported) distribution of ownership types among the second and third largest shareholders reveals that financial institutions dominate here, 40.2% of the second largest shareholders and 50.3% of the third largest shareholders are financial institutions.

To evaluate the stability of the ownership structures, we examine (though do not report in a table) the frequency distribution of changes in the voting power by the largest owners. Although the annual absolute change in control rights by the largest shareholder is within 5% in 79% of the firm-years, the absolute change is greater than 10% in almost 10% of the firm-years. The percent of firm-years in which the absolute change in the second and third largest shareholder's voting power is within 5% amounts to 91% and 96%, respectively. Thus, the variation in blockholders' stakes over time typically is low, but some changes do occur, particularly with the largest block.

**Table 1. Summary statistics and the distribution of ownership and control**

The table presents summary statistics for 136 Finnish listed non-financial firms with at least one blockholder over the period 1993-2000. The variables are: Tobin's Q, the market value of equity plus book value of total assets minus book value of equity all divided by book value of total assets; Return on assets, operating profit divided by total assets; Votes 1 (2, 3), the fraction of the votes held by the first (second, third) largest shareholder; Equity 1 (2, 3), the fraction of cash-flow rights held by the first (second, third) largest shareholder; CO1, CO2, and CO3, voting rights divided by equity rights of the first, second, and third largest shareholder, respectively; HI\_concentration, the logarithm of the sum of squares of the three largest owners' voting stakes; HI\_differences, the logarithm of the sum of squares of the differences between the largest and second largest, and the second and third largest voting stakes; Shapley value 1, the Shapley value solution for the largest shareholder in a three shareholder voting game; High contestability dummy, equals 1 if the sum of the voting power held by two largest shareholders does not exceed 50% and there are three (or more) owners with at least 10% of the votes each, and 0 otherwise; Leverage, total long-term liabilities (book value) divided by total assets; Growth in sales, percentage change in sales year-on-year; Asset tangibility, tangible assets divided by total assets; and Size, the logarithm of total assets. In Panel B, owners' types are: family, including private persons with the same surname; corporation, including private companies in which major shareholder is not one of the direct owners in the sample company; financial, including financial institutions and insurance companies; state, including state, cities and municipalities; and other, including mainly associations, non-profit organizations and academic institutions.

Panel A. Summary statistics						
Variable	Mean	Median	Min	Max	Standard deviation	
Tobin's Q	1.39	1.12	0.76	3.48	0.70	
Return on assets	0.08	0.07	-0.02	0.21	0.06	
Votes 1	42.34	40.00	10.00	96.20	23.08	
Votes 2	11.58	9.79	0.20	43.60	8.68	
Votes 3	5.91	4.76	0.00	24.20	4.82	
Equity 1	33.54	30.25	1.40	96.10	20.40	
Equity 2	9.77	8.30	0.40	43.60	6.88	
Equity 3	6.09	4.80	0.00	41.10	5.21	
CO1 (= Votes 1 / Equity 1)	1.36	1.00	0.66	2.76	0.54	
CO2 (= Votes 2 / Equity 2)	1.24	1.00	0.03	2.87	0.61	
CO3 (= Votes 3 / Equity 3)	1.09	1.00	0.11	2.43	0.54	
HI_concentration	7.41	7.54	4.96	9.13	1.05	
HI_differences	6.19	6.71	3.22	9.12	2.13	
Shapley value 1	0.60	0.51	0.11	1.00	0.35	
High contestability dummy	0.09	0.00	0.00	1.00	0.29	
Leverage	0.63	0.45	0.00	2.51	0.64	
Growth in sales	0.15	0.10	-0.22	0.90	0.26	
Asset tangibility	0.39	0.36	0.00	0.96	0.23	
Size (log of assets)	12.24	12.24	8.76	16.87	1.66	
Panel B. Ownership and control by the largest shareholder						
Largest shareholder's type	N	% of total	Votes (%)		Equity (%)	
			Mean	Median	Mean	Median
Family	222	36.3	51.1	55.9	36.9	33.3
Of which						
families have:						
(1) Managerial representation	93	15.2	55.3	63.7	37.9	38.3
(2) Board representation	111	18.1	49.8	55.8	37.2	32.0
(3) No direct representation	18	0.03	37.6	23.9	29.6	17.1
Corporation	161	26.3	36.2	31.4	32.5	30.2
Financial	77	12.6	25.8	19.5	23.1	18.1
State	82	13.4	48.2	50.0	47.1	50.0
Other	70	11.4	39.9	40.3	21.1	15.6
Total	612	100.0	42.3	40.0	33.5	30.3

**Table 2. Descriptive statistics: blockholders and median Tobin's Qs**

The table shows the number of firm-year observations in each category of controlling blocks and median Tobin's Q values. The sample consists of 136 Finnish non-financial listed firms with at least one blockholder for the period 1993-2000. A block is defined as a shareholder (or a group of related shareholders) with at least 10% of the votes. Tobin's Q is measured by market value of equity plus book value of total assets minus book value of equity, all divided by book value of total assets. Votes1 and Votes2 are the fraction of the votes held by the first and second largest shareholders, respectively. Wilcoxon z-statistics test for differences in median Tobin's Qs between different block ownership categories. \*, \*\*, \*\*\* denote significance at the 10%, 5% and 1% levels, respectively.

		One block		Two blocks		Three blocks		Total
		N	Median Tobin's Q	N	Median Tobin's Q	N	Median Tobin's Q	N
Panel A: Block owners and Tobin's Q values								
Votes1 + Votes2 ≤ 50	[1]			74	1.20	57	1.26	131
Votes1 + Votes2 > 50	[2]			120	1.07	43	1.14	163
Votes1 ≤ 50	[3]	160	1.20					160
Votes1 > 50	[4]	158	1.06					158
Total		318	1.11	194	1.11	100	1.15	612
Panel B: Z-statistic for differences in medians								
Test: [3] vs. [4]		3.65***						
Test: [1] vs. [2]				2.27**		1.87*		

Table 2 provides a more detailed description of block ownership. In 52% of firm-year observations (318 out of 612) there is only one blockholder. Two blockholders are present in 31.7% of the cases, while in 16.3% of the cases there are three blockholders.<sup>11</sup> Table 2 suggests that the valuation consequences of control differ depending on the number of blocks and on the aggregate voting power of the largest shareholders. If we simply compare the median Tobin's Q under one, two or three blocks, there is not very much of a variation (1.11 – 1.15). However, a very different picture arises when we differentiate between the aggregate voting power of more than 50% and less than 50%. Panel B of Table 2 shows that the median Tobin's Qs are significantly higher if the largest block or two largest blocks do not have a majority. This result gives some preliminary evidence suggesting that a majority stake can increase the efficiency of private benefit extraction and hence decrease firm value.

<sup>11</sup> More than three blocks are rare (e.g., in 1999 only 4 out of 116 Finnish firms with a controlling shareholder had four or more blockholders (Faccio and Lang, 2002)). Karhu et al. (1998) find that usually no more than three largest blockholders exercise their power at the general meetings of Finnish companies.

## 4. Regression results

In this section, we present the empirical results of the value effects in firms with one or more blockholders. In particular, we try to estimate the effects of contestability (H1), separation between ownership and control (H2), and different potential coalitions formed by the blockholders of different types and with different voting power (H3).

The main model is a *pooled ordinary least squares* (OLS) with industry and year dummies, and it includes data on 612 firm-years. Table 3 reports the OLS estimates, as well as the *t*-statistics that are calculated using the fully robust variance-matrix estimator, which allows for within-cluster (firm) correlation and heteroskedasticity. The robust estimator assumes no particular kind of within-cluster correlation nor a particular form of heteroskedasticity. This specification relaxes the independence assumption required by the OLS estimator to being just independence between the clusters (firms). This specification yields broadly similar results compared to a random-effects model (not reported), which controls for possible unobserved firm-specific effects. Robustness of the results and alternative model specifications are discussed in the next section. On the basis of the discussion in the previous sections, the following model is estimated:

$$Tobin's\ Q_{it} = \alpha_{it} + \beta_1 Contestability_{it} + \sum_{k=2}^5 \beta_k CONTROL_{itk} + \beta_6 Year_t + \beta_7 Industry_i, \quad (8)$$

where “*CONTROL*” variables include leverage, sales growth, asset tangibility, and firm size.

### 4.1. Testing Hypotheses 1 and 2

Regressions (1) to (3) of Table 3 report the results of the effect of control contestability on firm valuation. All the three continuous proxies for contestability exhibit the predicted negative sign, and are statistically significant. The Herfindahl index measuring the differences in the voting stakes among the three largest shareholders (HI\_differences) has the highest explanatory power. A negative relation means that a more equal distribution of the voting power among the largest blockholders (lower HI\_differences) has a positive effect on firm value. The other measures, HI\_concentration and the Shapley value of the largest shareholder, are also significantly negatively related to firm value (at the 10% level). All these measures take into account the voting power of the largest shareholder, as well as the asymmetry between individual blockholders' fractions of votes, hence confirming Hypothesis 1, which stated that an increase in control contestability should increase firm value.

**Table 3. Regressions on the relation between firm value and control contestability**

The table presents regressions of Tobin's Q on ownership and control variables for 136 Finnish listed non-financial firms with at least one blockholder over the period 1993-2000. The dependent variable is Tobin's Q, measured as market value of equity plus book value of total assets minus book value of equity, all divided by book value of total assets. The independent variables are: Equity 1, the fraction of cash-flow rights held by the largest shareholder; CO1, voting rights divided by equity rights of the largest shareholder; HI\_concentration, the logarithm of the sum of squares of the three largest owners' voting stakes; HI\_differences, the logarithm of the sum of squares of the differences between the largest and second largest, and the second and third largest voting stakes; Shapley value 1, the Shapley value solution for the largest shareholder in a three shareholder voting game; High contestability dummy, equals 1 if the sum of the voting power held by two largest shareholders does not exceed 50% and there are three (or more) owners with at least 10% of the votes each, and 0 otherwise; Multiple blocks dummy, equals 1 if there is more than one shareholder with at least 10% of the votes; Leverage, total long-term liabilities (book value) divided by total assets; Growth in sales, percentage change in sales year-on-year; Asset tangibility, tangible assets divided by total assets; and Size, the logarithm of total assets. The regressions include year dummies and industry dummies (not reported). The t-statistics (in parentheses) are based on robust standard errors that are corrected for clustering at the firm level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
HI_differences	-0.05*** (-2.81)					
HI_concentration		-0.07* (-1.94)				
Shapley value 1			-0.19* (-1.81)			
Multiple blocks dummy				0.06 (0.95)		
High contestability dummy					0.32*** (2.63)	
CO1 (= Votes1 / Equity 1)						-0.27*** (-3.55)
Equity 1						-0.002 (-1.17)
Leverage	-0.06 (-1.04)	-0.04 (-0.80)	-0.04 (-0.87)	-0.05 (-0.95)	-0.07 (-1.31)	-0.06 (-1.26)
Growth	0.44*** (3.83)	0.45*** (3.81)	0.45*** (3.77)	0.44*** (3.68)	0.45*** (3.84)	0.40*** (3.68)
Asset tangibility	-0.18 (-1.17)	-0.20 (-1.33)	-0.22 (-1.45)	-0.25 (-1.64)	-0.17 (-1.12)	-0.22 (-1.39)
Size	-0.05** (-2.07)	-0.05** (-2.18)	-0.04* (-1.95)	-0.03 (-1.60)	-0.04* (-1.67)	-0.05** (-2.33)
Constant	2.05*** (6.46)	2.29*** (5.45)	1.85*** (5.96)	1.62*** (5.61)	1.62*** (5.75)	2.29*** (6.34)
R <sup>2</sup>	0.50	0.48	0.48	0.48	0.51	0.51
Number of obs.	612	612	612	612	612	612

In Section 2, we argued that if the number and the type of blockholders included in the controlling coalition do not change the marginal cost of stealing, the simple presence of multiple blocks should have a positive effect on firm value. Regression (4) of Table 3 shows that the presence of multiple blocks has a positive effect on firm value, although it is statistically insignificant. In contrast, the significance of the Herfindahl indices suggests that the relative distribution of voting power is more important than the presence of multiple blocks.

In Regression (5) of Table 3, we show that the *High contestability dummy* has a significantly positive effect on firm value. This result suggests that a control structure with three blockholders, in which any two blockholders, by colluding, cannot form a simple majority, is value enhancing. Consistent with our model in Section 2, the three blockholder case implies that in any coalition with less than three blockholders, the remaining contestability is high (value increases). If, instead, a coalition is formed by all the three blockholders, the value effect again is positive because this coalition internalizes more cash flow benefits, making private benefit extraction less appealing.

The last model of Table 3 attempts to disentangle the effect of cash flow rights (incentive effect) and the effect of control rights (entrenchment effect) on firm value (our Hypothesis 2). The equity stake of the largest shareholder is not significant, while the control-to-ownership ratio of the largest shareholder has a significant negative effect on firm value. Consistent with Hypothesis 2 and earlier studies, this result suggests that the separation between votes and equity increases the extraction of private benefits compared to otherwise similar one share - one vote firms.

#### 4.2. Testing Hypothesis 3

In Section 2, we argued that the level of private benefits may actually depend on the type of blockholders forming the controlling coalition. Previous literature (e.g., Holderness and Sheehan, 1988; Volpin, 2002; Claessens et al., 2002; and Burkart et al., 2003) also note that the identity of the shareholders is important for understanding corporate governance. These studies, however, typically look only at the *largest* shareholder's identity. In Table 4, we try to take into consideration also the identity of other large shareholders. In Regressions (1) and (2), we sub-divide the total sample into two groups: family firms in which the largest shareholder is a family, and all the other firms that we call non-family firms.

The results indicate that the contestability of control (measured by the Herfindahl index of the differences between blockholder votes<sup>12</sup>) is more important in family firms. From Panel B of Table 1, we see that family-controlled firms almost always have managerial or board representation. This result suggests that the private benefits could substantially increase (firm value decrease) if the ability to monitor the *insiders* is low. Presumably, the marginal cost of stealing can be reduced if the largest blockholder is also an insider. Taken together, large outside shareholders, who have the incentives and capabilities to monitor the insiders,

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<sup>12</sup> The results are similar (but less significant), if we use HI\_concentration or the Shapley value of the largest shareholder. To save space, we do not report these regressions.



appear to be beneficial to outside investors. In particular, the results in Table 4 suggest that the benefits of control contestability are most pronounced in firms with little separation between ownership and control, i.e. in family-controlled firms.

To examine the role of other blockholders in family-controlled firms, we split the sample according to the type of the second largest shareholder in Regressions (3) and (4). The voting stake of a second family owner is significantly negatively related to firm value (at the 5% level), whereas the size of the stake of a non-family second owner is significantly positively related to firm value. The same pattern arises when we look at the identity of the third largest shareholder (Regressions (5) and (6)). The voting stake of the third largest shareholder has a

**Table 4. Regressions on the relation between firm value and control contestability, by shareholder type**

The table presents regressions of Tobin's Q on ownership and control variables for 136 Finnish listed non-financial firms with a blockholder over the period 1993-2000. The dependent variable is Tobin's Q, measured as market value of equity plus book value of total assets minus book value of equity, all divided by book value of total assets. The independent variables are: Votes 2 and Votes 3, the fraction of the votes held by the second and third largest shareholder, respectively; HI\_differences, the logarithm of the sum of squares of the differences between the largest and second largest, and the second and third largest voting stakes; Leverage, total long-term liabilities (book value) divided by total assets; Growth in sales, percentage change in sales year-on-year; Asset tangibility, tangible assets divided by total assets; and Size, the logarithm of total assets. The regressions include year dummies and industry dummies (not reported). The t-statistics (in parentheses) are based on robust standard errors that are corrected for clustering at the firm level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
	Family firms	Non-family firms	Family firms with family as second owner	Family firms with non-family as second owner	Family firms with family as third owner	Family firms with non-family as third owner
HI_differences	-0.08*** (-2.70)	-0.03 (-1.58)				
Votes 2			-0.02** (-2.65)	0.04** (2.71)	0.04* (1.86)	-0.01 (-1.06)
Votes 3			0.01 (0.72)	0.001 (0.03)	-0.02 (-1.07)	0.06** (2.44)
Leverage	-0.18** (-2.01)	0.01 (0.21)	-0.18 (-0.96)	0.02 (0.11)	-0.30** (-2.15)	-0.21 (-1.04)
Growth	0.57*** (2.75)	0.35** (2.59)	0.77** (2.70)	0.41 (1.32)	0.50* (1.87)	0.78*** (3.32)
Asset tangibility	0.02 (0.05)	-0.38** (-2.26)	-0.22 (-0.35)	-0.17 (-0.59)	-0.57 (-0.97)	0.37 (1.06)
Size	-0.05 (-1.01)	-0.06** (-2.06)	-0.12 (-1.22)	-0.05 (-0.75)	-0.09 (-1.34)	-0.04 (-0.64)
Constant	2.13*** (3.30)	2.30*** (5.68)	2.83** (2.11)	1.31* (1.86)	2.49** (2.39)	1.08 (1.38)
R <sup>2</sup>	0.60	0.48	0.65	0.66	0.59	0.69
Firms	55	94	36	32	35	40
Number of obs.	222	390	122	100	107	115

negative (though not significant) effect on firm value if it is held by a family, and a positive and significant effect on firm value, if it is held by non-family. We find this result rather striking. Recall that the most common type of the second and third non-family shareholders is financial institutions. These results strongly confirm our third hypothesis conditional on our assumption that a coalition formed by two families is more likely to reduce the marginal cost of private benefit extraction than a coalition formed by a family and, say, a financial institution.<sup>13</sup> This assumption seems plausible taking into account that financial institutions have a higher opportunity cost of engaging in profit diversion activities since they are subject to more scrutiny from regulatory authorities. It is also presumably harder to form coalitions, within legal boundaries, between the private owners and, e.g., fund managers, as compared to two private owners.

## 5. Robustness

In this section, we address four issues of robustness. First, *what can we do about the endogeneity of ownership?* We re-estimate some of the models in Table 3 treating the ownership variables as endogenous. Following the analysis of Hermalin and Weisbach (1991), we use the lagged values of the ownership variables as their instruments because some changes in ownership occur within firms over time (see Section 3.3.). Regression (2) from Table 3 that uses the instrumented HI\_differences variable yields:

$$\begin{aligned} \text{Tobin's } Q = & 1.94 \text{ Constant} - 0.05 \text{ Predicted HI\_differences} + \text{Control variables,} \\ & (5.19) \quad (-2.19) \\ R^2 = & 0.46, \text{ obs.} = 492. \end{aligned}$$

The contestability measure HI\_differences is significantly negatively related to firm valuation (at the 5% level) using instrumental-variable regressions. The instrumental-variable results for the HI\_concentration, Shapley value, and control-to-ownership ratio are available but not displayed, to conserve space. HI\_concentration and Shapley value keep the negative signs but lose significance. The control-to-ownership ratio remains significantly negative when we treat it as an endogenous variable. Results using instrumental-variable regressions largely confirm our previous findings that contestability of power has a positive effect on firm value, while the separation between ownership and control has a negative effect on firm value.

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<sup>13</sup> Boehmer (2000) finds related evidence that multiple controlling shareholders improve bidder performance in German takeovers when bank stakes are dominated by the voting power of another blockholder. McConnell and Servaes (1990) show that institutional ownership improves firm value in US firms.

Second, *is the chosen model specification appropriate?* In all our regressions, we control for clustering at the firm level (which generally reduces the  $t$ -values), i.e., we do not assume that the within firm variation of variables is independent. We also performed panel data random effects regressions (not reported), which yielded very similar results, thus suggesting that some unobserved firm effects do not bias our results. Although we include year dummies in our regression, we re-estimate the regressions for each year separately. Repeating the analysis on a year-by-year basis lead to similar inferences. Some years lose significance due to low number of observations, but the signs of the main parameters remain intact.

Third, *do firms with unlisted share classes affect the results?* There is a relatively high presence of firms with an unlisted share class (195 firm-years); therefore it is important to discuss the potential bias in calculating Tobin's Q by extrapolating market value of the listed shares onto the unlisted ones. As a robustness check, we re-run the regressions on a sub-sample of 417 firm-years that do not include the firms with unlisted share class. The results do not change.

Finally, *how robust are the results to an alternative performance measure?* We have used Tobin's Q as the main performance measure. As an alternative dependent variable, we use return on assets (ROA), which is calculated as the operating profit divided by total assets, to re-estimate the main results. The results using ROA are displayed in Table 5. The findings generally support those using Tobin's Q, although some parameter estimates are less significant. For instance, HI\_differences is negatively related to ROA but only at the 10% significance level (compared to the significance level of 1% in Table 3). HI\_concentration (and Shapley value (not reported)) is negative but insignificant. Control-to-ownership variable is negatively, although insignificantly, related to ROA. The effect of the type of the second and the third owner is qualitatively the same using ROA and Tobin's Q, again suggesting that family and non-family blockholders play different roles in firms in which the largest shareholder is a family.

**Table 5. Regressions on the relation between return on assets and measures of control contestability**

The table presents regressions of return on assets on ownership and control variables for 136 Finnish listed non-financial firms with a blockholder over the period 1993-2000. The dependent variable is return on assets, measured as operating profits divided by total assets. The independent variables are : HI\_differences, the logarithm of the sum of squares of the differences between the largest and second largest, and the second and third largest voting stakes; HI\_concentration, the logarithm of the sum of squares of the three largest owners' voting stakes; COI, voting rights divided by ownership rights by the largest shareholder; Votes2, the fraction of voting rights held by the second largest shareholder; Votes3, the fraction of voting rights held by the third largest shareholder; Leverage, total long-term liabilities (book value) divided by total assets; Growth, percentage change in sales year-on-year; Asset tangibility, tangible assets divided by total assets; and Size, the logarithm of total assets. The regressions include year dummies and industry dummies (not reported). The t-statistics (in parentheses) are based on robust standard errors that are corrected for clustering at the firm level. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Full sample		Family firms			Family firms with family as second owner	Family firms with non-family as second owner	Family firms with family as third owner	Family firms with non-family as third owner
HI_differences	-0.003* (-1.65)			-0.01** (-2.44)					
HI_concentration		-0.004 (-1.16)			-0.01 (-1.27)				
COI (= Votes 1 / Equity 1)			-0.01 (-0.82)						
Votes 2						-0.001* (-1.88)	0.01*** (5.15)	0.01** (2.49)	0.0001 (0.20)
Votes 3						0.001 (1.26)	0.00 (-0.88)	-0.003 (-1.60)	0.005* (1.80)
Leverage	-0.02*** (-3.31)	-0.02*** (-3.17)	-0.02*** (-3.18)	-0.03** (-2.07)	-0.02* (-1.80)	-0.01 (-0.57)	-0.02 (-1.20)	-0.04*** (-2.77)	-0.03 (-1.08)
Growth	0.01 (1.18)	0.01 (1.22)	0.01 (1.10)	0.02 (1.03)	0.03 (1.19)	0.04* (1.92)	0.01 (0.91)	0.03 (1.12)	0.03 (1.50)
Asset tangibility	0.02 (0.75)	0.01 (0.70)	0.01 (0.56)	0.06* (1.76)	0.07* (1.79)	0.01 (0.20)	0.07* (1.96)	0.04 (0.55)	0.06 (1.30)
Size	-0.004* (-1.64)	-0.004* (-1.71)	-0.002 (-1.43)	-0.01* (-1.78)	-0.01* (-1.89)	-0.02* (-2.29)	-0.005 (-0.68)	-0.01* (-1.75)	-0.01 (-1.24)
Constant	0.14*** (4.57)	0.16*** (3.71)	0.13*** (3.72)	0.19*** (3.86)	0.21*** (2.84)	0.26*** (3.12)	0.09 (1.15)	0.20** (2.28)	0.09 (1.42)
R <sup>2</sup>	0.16	0.16	0.15	0.19	0.17	0.26	0.57	0.32	0.26
Firms	136	136	136	94	94	36	32	35	40
Number of obs.	612	612	612	390	390	122	100	107	115

## 6. Conclusions

This paper examines the role of multiple large shareholders on firm performance using a panel of 136 non-financial Finnish firms during 1993-2000. We propose that even though the simple presence of multiple blocks can have a positive effect on firm value, it is not always the case. The link between control structures with multiple blocks and the valuation of firms is driven by the relative size, as well as the identity of the blockholders.

First, using different measures of control contestability, we confirm the predictions of our simple theory that a more equal distribution of voting rights enhances firm value. The effect is much stronger in family (insider) controlled firms. Insiders are expected to be better in hiding profit diversion, and extracting more private benefits, if their actions and power cannot be challenged. Second, we corroborate previous findings that firm value decreases if the largest shareholder holds more votes than equity rights. Finally, we find that a higher voting stake held by another family reduces firm value in family-controlled firms, whereas a higher voting stake held by another non-family owner improves firm value in family-controlled firms. These results suggest that the incentives to collude with or to monitor the controlling shareholder are affected by the type of the individual owner. These results fit with our theoretical argument that certain blockholders jointly can reduce the cost of extracting private benefits.

The evidence presented in this paper expands our understanding of the link between firm's control structure and its performance, by showing that multiple blockholders can play an important role in corporate governance. Taken as a whole, our results suggest that the contestability of the leading shareholder's power can limit the expropriation of minority shareholders. Comparisons of the relation between control contestability and firm performance in countries with different degrees of investor protection seem an interesting topic for further research.

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## Chapter 2

# Controlling Shareholders, Agency Problems, and Dividend Policy in Finland\*

with Benjamin Maury

### 1. Introduction

One of the basic financial policy choices facing a firm is what percent of earnings to pay out as dividends. The seminal work by Modigliani and Miller (1958, 1961) established that, under restrictive set of conditions, when investment policy is held constant, a firm's dividend policy does not affect shareholder wealth because higher dividend payouts lead to lower retained earnings and capital gains, leaving the wealth of shareholders unchanged. Motivated by Lintner's (1956) finding that firms follow well-considered payout strategies, financial theory has offered a range of explanations for dividend policies based on agency conflicts between corporate insiders and outside shareholders, signaling theories, and taxes. In this paper, we present evidence consistent with one of the agency conflict explanations of dividends, particularly, showing that the ownership and control structure of the firm affects its dividend payout strategies.

The basic motivation for the agency models of dividends is that unless a firm's profits are paid out as dividends, corporate managers may divert the cash flow for personal use or pursue unprofitable investment projects. Dividend payouts can be seen as means to reduce the free cash flow that managers can use at their own discretion (Jensen, 1986; Lang and Litzenberger, 1989). As a consequence, outside shareholders may have a preference for dividends over retained earnings.

The agency models on dividends can be divided into at least two distinct groups. The first range of theories considers dividend payouts as an outcome of the agency conflict

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between managers and shareholders, as well as between controlling shareholders and outside shareholders (La Porta et al. 2000; Faccio et al. 2001). According to La Porta et al. (2000), dividend payouts are an outcome of the legal shareholder protection. Particularly, they find that firms in civil-law countries pay lower dividends than in common-law countries. La Porta et al. (2000) claim that under an effective legal system, minority shareholders use their legal power to force firms to pay out dividends. Contrary to this view, the second set of agency models argues that dividend payout policies are substitutes for governance problems in a firm (Easterbrook, 1984; Gomes, 2000).

Recent empirical research shows that many publicly traded firms in Western Europe, South and East Asia, Middle East, Latin America, and Africa have large shareholders in control – most often families (La Porta et al. 1999; Claessens et al. 2000; Barca and Becht, 2001; Faccio and Lang, 2002). These findings suggest that the relevant agency problem is not the one between corporate managers and shareholders but rather between controlling shareholders and minority shareholders. The controlling shareholders often have managerial ties, which make the collusion between managers and controlling shareholders likely. The type of the controlling shareholder is also likely to affect a firm's governance. When controlling shareholders are private persons, such as managers, board of directors and families, they are often unambiguously in control of the firm. As a consequence, we try to distinguish not only the impact that controlling shareholders have on dividend policies, but also the difference between various types of private owners, corporate and institutional shareholders. We would expect that some types of controlling shareholders have more power to expropriate minority shareholders, which could come in form of lower dividends.

In this paper, we attempt to explore how different ownership structures and owner types affect the dividend payout decisions in Finnish listed companies. The sample consists of 133 firms in 1999. We start our analysis by describing the ownership and control structures of Finnish firms. We find that the median voting power of the largest shareholder is 33.2% which is much higher than in common law countries such as England (9.9%) and the US (5.4%), but slightly lower than in eight continental European countries (44%).<sup>1</sup> We also find that the most common controlling owner category is private persons. In many cases these private owners have managerial and/or board representation, which suggests that they have a strong say in deciding what proportion of earnings to pay out as dividends. As a result, the

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<sup>1</sup> Comparative figures are from Barca and Becht (2001).

minority shareholders are the victims of controlling shareholders' potential interest in diverting the firm's profits into private benefits instead of paying them out on pro-rata basis.

We find empirical evidence in favor of the outcome agency model of dividends. Specifically, we find that the concentration of voting rights is associated with lower levels of dividends as a proportion of earnings. The result holds for different measures of control concentration. The negative impact of the concentration of voting rights could be interpreted as an evidence for the existence of private benefits of control by strong blockholders. Moreover, we observe that the negative effect is not driven solely by the largest shareholder's voting power, but also by the second largest owner's stake. We find a significantly negative impact of the presence of another strong shareholder. Our findings suggest that a large controlling shareholder or a coalition of large shareholders have the preference and the ability not to pay out profits as pro-rata distributions to all shareholders, but rather to pay themselves only in form of private benefits of control. According to Shleifer and Vishny (1997), controlling shareholders can extract private benefits for instance by exploiting business relationships with the companies they control.

We are also interested in knowing if there is any systematic difference in how different types of controlling shareholders influence dividend decisions. We find that if the CEO is among the three largest shareholders in the firm – which is the case in about 15% of the firms in the sample – the firm's median dividend payout level is significantly lower. Our results also indicate that private investors in general tend to be associated with higher dividend payouts rather than with lower dividends. This finding is inconsistent with some results on Swedish firms by Angeldorff and Novikov (1999) who claim that privately controlled firms behave differently by paying lower dividends. One important difference between Finland and Sweden is the preferential tax treatment of dividends for domestic private investors and firms, which is not the case in Sweden. Our results suggest that, due to imputation tax credit in Finland, private owners, generally, prefer dividends to capital gains. However, when the private owner also is the firm's CEO private benefits of control could outweigh the benefits of dividend payouts.

We find some support for the hypothesis that the dividend payout rate is lower if the corporation is affiliated to a group structure. It is possible that group-affiliated corporations prefer to retain cash for projects within the group (e.g. cross-subsidizing group companies or empire building), and therefore have, on average, lower dividend payout ratios.

This paper also analyzes the impact of using voting rights in excess of cash-flow rights on dividend payouts. It has been proposed that the separation of ownership and control by

using dual-class shares, stock pyramids and cross-holdings creates additional agency problems in firms when large shareholders can exercise significant power while holding only a small fraction of the cash flow rights (Bebchuk et al., 2000). The main idea here is to see whether controlling shareholders that use high voting shares to enhance their control are associated with lower dividend levels due to private benefits of control. We do not find a significant relationship between the level of separation of ownership and control and dividend-to-earnings ratio. One countervailing effect to the hypothesis proposed is the reputation of the controlling shareholder that can reduce the expropriation of minority shareholders (Gomes, 2000). Another explanation is that the deviation from the one share one vote scheme is driven by another factor – namely, the preference for dividends by the type of the controlling owner. Maury and Pajuste (2003) report that private owners are the most common users of high voting shares to maintain control in Finnish listed firms.

The paper is organized as follows. Section 2 presents the data, the institutional setting, and reviews prior research on the relationship between ownership structure and dividend payout policy. Section 3 displays descriptive statistics on ownership and control structures in Finnish listed firms. Section 4 reports our empirical results. Section 5 concludes.

## **2. Economic framework**

### *2.1. Sample*

To construct the sample, we start by identifying all companies listed on the Helsinki Stock Exchange; there were 164 firms listed at the end of 1999 or who entered the market before July 2000. Table 1 summarizes the sample construction.

The main reason for some loss of observations is the unavailability of alternative sources for ownership data that we need to ensure the reliability of the data. The ownership data is primarily collected from the annual reports. The yearbook *Pörssitieto* is particularly helpful in identifying ultimate ownership because the book often reports important indirect owners of unlisted firms who are the largest shareholders. Panel A of Table 1 shows that the selection criteria yield a total of 133 firms with ownership. In Panel B, we report the omissions of observations due to negative earnings for 1999 and outliers (dividends more than five times the earnings). The final sample using 1999 dividend payout ratios includes 127 firms, and the sample for average dividend payout ratios for years 1995–1999 amounts to 131 firms.

**Table 1. Construction of the sample**

Panel A: Construction of the basic sample with ownership data	
164	Listed firms (December 1999 – June 2000)
-24	Unable to cross-check ownership data (of which from main list – 7, I-list – 11, and NM-list – 6)
-7	Merger, reorganization, liquidation, foreign firm or redemption duty by the largest shareholder
133	Basic sample with ownership data used in empirical analyzes
Panel B: Construction of sample for empirical analysis	
Sample 1: Dividend-to-earnings for 1999	
133	Basic sample with ownership data
-3	Negative earnings 1999
-3	Outliers (dividend-to-earnings ratio)
127	Sample for dividend-earnings ratios 1999
Sample 2: Average dividend-to-earnings ratio 1995-1999	
133	Basic sample with ownership data
-2	Outlier (average dividend-to-earnings ratio)
131	Sample for average dividend-to-earnings ratios

All data on dividends and earnings come from Delphi Economics published in the publication Listatut Yhtiöt. Earnings are measured after taxes and minority interests but before extraordinary items. We collect dividend-to-earnings ratios for the period 1995–1999. The actual dividend-to-earnings ratios are given in Appendix 1. The other accounting data used in the analyses come from the Nordic Accounting Network and the annual reports. To get a measure of foreign ownership, we add nominee registered foreign investors to direct foreign shareholdings using data from the *Finnish Central Securities Depository*.<sup>2</sup>

### 2.1.1. Measuring immediate and ultimate control stakes

This study uses two different measures of ownership and control of firms: immediate cash flow and control rights by the largest shareholders, and the control and cash flow stake of the largest ultimate controlling shareholder. In both measures, our definition of control relies on voting rights whereas the definition of ownership rights relies on cash-flow rights.

Immediate control and cash flow ownership stakes are measured at the first layer of control. For each firm, we collect data on votes and cash-flow rights of three largest

<sup>2</sup> Foreign investors were the largest investor category with a 69.9% share of the market capitalization of Finnish listed firms as of June 1, 2000 (Karhunen and Keloharju, 2001).

shareholders ranked by their voting power. Ownership data are collected from the annual reports at the end of year 1999. Moreover, we use the yearbook *Pörssitieto* to identify owner groups and indirect holdings by private persons. We distinguish between private shareholders, financial institutions, corporations, state or city, and miscellaneous<sup>3</sup> ownership types. We define a controlling family as the sum of votes held by individuals with the same surname. We assume that every family owns and votes collectively. We calculate the ownership of financial groups, which are identified in *Pörssitieto*, by adding together the holdings of firms belonging to the same financial group.<sup>4</sup> Our measure of immediate control captures one effect of separating ownership from control, i.e. when firms have different classes of shares that provide different voting rights for given cash-flow rights.

The measure of the largest *ultimate* control and cash flow ownership stakes requires some more work. We start by identifying all immediate controlling shareholders – treating family members and financial groups in the same way as for immediate ownership and control stakes – with at least 10% of the votes in a firm. If the largest immediate controlling shareholder is a family or state, we already have the largest ultimate controlling shareholder. However, when other type of owners, mostly other corporations and financial institutions, control the sample firm, we search for the largest shareholder(s) of that owner with at least 10% of the votes along the control path. We follow this procedure for the third and forth layer of control and so on until we find the ultimate owner. To get a measure of the control stake of the ultimate controlling shareholder, we use the minimum share of voting rights along the controlling path exceeding the 10% threshold. By using the weakest voting stake in the control path, we take into account the possible loss of control by using several layers of control. If there are several shareholders with the same amount of control, we use the one with the highest minimum control stake along the control path. When shareholders control a firm both directly and through other firms, we sum the direct and indirect control stakes of that shareholder.

The cash-flow ownership stake can differ from the control stake of the controlling shareholder in two principal ways. Firstly, the ownership can differ from the voting rights if the firm has different classes of shares that provide different amount of votes. Secondly, the

<sup>3</sup> “Miscellaneous” includes, for example, associations and foundations. We realize that some of these types might have particular interest in one or the other dividend policy. But we did not classify these groups separately, because of limited number of observations. This limitation does not allow us to draw any significant conclusions about the impact of these ownership types on dividend policy.

<sup>4</sup> The insurance groups are Fennia-Ryhmä, Merita Oyj (with Merita henkivakuutus Oy), Osuuspankkikeskus, Pohjola-Yhtymä Vakuutus Oyj, Sampo-Varma –ryhmä and Tapiola-yhtiöt (see *Pörssitieto* 1999 for further information).

voting rights can differ from the ownership rights because the controlling shareholder controls the sample firm through a chain of firms. When the ultimate controlling shareholder controls the firm indirectly, through at least one other firm, we define the cash-flow ownership stake by the *product* of the cash-flow stakes along the control path. Thus, controlling a firm through a pyramid can create a significant wedge between ownership and control even without using high voting shares to increase control. A direct ownership stake in the sample firm is added to the indirect stakes.

An ultimate controlling shareholder can be a family (or unlisted firm)<sup>5</sup>, the state, a widely held corporation, a widely financial institution or of a miscellaneous type. If no one controls at least 10% of the votes, the firm is regarded as being widely held.

## 2.2. *Some features of control in Finnish listed firms*

In Table 2, we present descriptive statistics on the concentration of voting rights and the separation of ownership and control by the largest immediate shareholders in Finnish listed firms.

Interestingly, we find that in about 70% of firms there is a controlling shareholder with at least 20% of votes. In about 46% (15%) of the sample firms, there is also a second controlling shareholder holding at least 10% (20%) of votes. On average (median), the largest shareholder holds 33% (28%) of ownership rights and 38% (33%) of control rights. In comparison to the largest shareholder's median stake of votes in firms operating in common-law countries, such as England (10%) and the US (5%), the concentration of votes is quite high. However, compared to an average of eight continental European countries, where the median control stake is 44%, the Finnish median control concentration is slightly lower. An interesting difference between Finland and continental Europe concerns the median size of the second largest shareholder measured by voting rights. The median size of the second largest shareholder is as high as 9% in Finland while it is 6% in the continental Europe.<sup>6</sup>

Table 2 also displays the use of dual-class shares by the largest shareholders. We document that particularly the two largest shareholders hold voting rights in excess of cash-flow rights. Interestingly, as shown in Panel B of Table 3, there is a significant difference (at

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<sup>5</sup> If we could not identify the owners of an unlisted firm, we follow the methodology used in Faccio and Lang (2002) and classify them as a family in the ultimate owner classification. The low likelihood that the owner of an unlisted firm is a widely held firm or financial institution, or the state leaves families as the likely owner in control.

<sup>6</sup> Comparative figures are from Barca and Becht (2001).

**Table 2. Descriptive statistics on ownership in Finland**

This table shows the percentage of firms with controlling shareholders (1st, 2nd and 3rd largest), the average percentage of votes and cash flow rights by the largest owner, and the ownership/ control ratio measured by amount of cash flow ownership/ votes by the three largest owners, respectively. The sample consists of 133 Finnish listed firms. Variables are defined in Appendix 2.

Panel A: Control concentration		
Percentage of firms with >20% votes held by the largest owner		69.92
Percentage of firms with >20% votes held by the 2 <sup>nd</sup> largest owner		15.04
Percentage of firms with >10% votes held by the 2 <sup>nd</sup> largest owner		45.86
Percentage of firms with >10% votes held by the 3 <sup>rd</sup> largest owner		16.54
Panel B: Largest and second largest owner's control and cash-flow stakes		
	Mean (%)	Median (%)
Ownership by the largest owner	32.56	28.30
Control by the largest shareholder	38.13	33.22
Ownership by the largest <i>ultimate</i> owner	30.41	26.17
Control by the largest <i>ultimate</i> shareholder	38.13	33.22
2 <sup>nd</sup> largest owner's ownership rights	9.72	8.10
2 <sup>nd</sup> largest owner's control rights	11.06	9.31
Panel C: Ownership-to-control ratios		
	Mean	
Controlling shareholder's ownership/control ratio	0.95	
Ultimate controlling shareholder's ownership/control ratio	0.88	
2 <sup>nd</sup> largest shareholder's ownership/control ratio	1.04	
3 <sup>rd</sup> largest shareholder's ownership/control ratio	1.21	

1% significance level) in the ownership-to-control ratios between the largest and the third largest shareholder, as well as between the second largest and the third largest shareholder. The difference in the ownership-to-control ratio between the largest and the second largest shareholder is only weakly significant.

To summarize, we have shown that in the vast majority of Finnish listed firms, controlling shareholders hold large control stakes in their firms. The controlling shareholder often chooses to use high-voting shares to strengthen his control. These findings motivate us to focus our analysis on conflicts of interest between controlling shareholders and minority shareholders in setting the dividend policy.

### *2.3. Controlling shareholders and dividend policy: theoretical issues*

The main issue addressed in this paper is the influence of firm's ownership and control structure on dividend policy. In Section 2.2, we documented that a large shareholder with at least 20% of the votes is present in approximately 70% of Finnish listed firms. In this institutional setting, it is likely that large shareholders, when they gain nearly full control, start generating private benefits of control that are not shared with minority shareholders, as

**Table 3. Ownership-to-control ratios**

This table shows the number (and percent) of firms where the 1st, 2<sup>nd</sup> and 3<sup>rd</sup> largest shareholder has ownership-to-control (O/C) ratios equal to one, less than one (i.e. more votes than cash flow rights), and firms with O/C ratios more than one (Panel A). The ownership/control ratio is defined in Appendix 2. Tests of difference in means in the use of dual-class shares to enhance control by the largest, second largest and third largest shareholders are displayed in Panel B. In the tests of difference in means, we cap the O/C ratio for the largest shareholder at the 95<sup>th</sup> percentile to reduce the impact of one outlier. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	Largest owner	2 <sup>nd</sup> owner	3 <sup>rd</sup> owner
<b>Panel A: Largest shareholders' use of dual-class shares</b>			
Number (%) of O/C=1 firms	80 (60%)	80 (60%)	79 (60%)
Number (%) of O/C<1 firms	44 (33%)	41 (31%)	31 (23%)
Number (%) of O/C>1 firms	9 (7%)	12 (9%)	23 (17%)
Total sample (N)	133 (100%)	133 (100%)	133 (100%)
<b>Panel B: Tests of difference in means (t-statistics)</b>			
	Ownership-to-control ratio		
Largest owner vs. 2 <sup>nd</sup> owner	-1.69*		
Largest owner vs. 3 <sup>rd</sup> owner	-3.37***		
2 <sup>nd</sup> owner vs. 3 <sup>rd</sup> owner	-2.82***		

proposed by Shleifer and Vishny (1997). The discrepancy between voting rights and cash flow rights – created by using dual-class shares, pyramid ownership structures or cross-holdings – may add another layer of agency problems that could affect the dividend payouts. According to La Porta et al. (2000), unless the profits are paid out to shareholders, the insiders may divert profits for personal use or invest in unprofitable projects that provide benefits for themselves. La Porta et al. (2000) classify agency models of dividends into two distinct groups: those considering dividends as an outcome of the legal shareholder protection on the one hand, and models taking the view that dividend policy is a substitute for the legal shareholder protection on the other hand. They further point out that the key issue in the agency approach to dividends is that “...failure to disgorge cash leads to its diversion or waste, which is detrimental to outside shareholders' interest” (La Porta et al, 2000, p. 2).

La Porta et al. (2000) present empirical evidence in favor of the outcome agency model of dividends. They claim that firms operating in countries with low shareholder protection pay lower dividends due to more agency problems between controlling shareholders and outside shareholders than in countries, such as the US and the UK, where investors are generally more protected. Faccio et al. (2001) address the effect of agency conflicts on dividend behavior, and present some evidence of dividend policies in European and East Asian firms stemming from the firm's ownership and control structure. In particular, Faccio et al. (2001) claim that another large shareholder mitigates agency conflicts in European



firms, whereas multiple controlling shareholders intensify the conflicts of interest in East Asian firms, because they tend to collude in expropriating outside shareholders by paying lower dividends. Gugler and Yurtoglu (2001) claim that dividend payouts decrease with an increase in the control stake of the largest shareholder, whereas the size of the second largest shareholder is positively related to dividend payouts.

In another set of agency models, the dividend policy can be seen as a substitute for the conflict of interests between insiders and outsiders. In Zwiebel (1996), managers voluntarily pay dividends in order to avert challenges for control. Myers (2000) proposes that managers can continue in their current positions only if outside equity investors believe that corporate insiders will pay future dividends. Gomes (2000) focuses on the conflict of interests between controlling shareholders and minority shareholders, and argues that controlling shareholders can implicitly commit not to expropriate outside shareholders. More specifically, Gomes (2000) claims that managers can develop a reputation for treating outside shareholders well. He proposes that it is the multi-period nature of the realization of cash flows and the trading of shares that allows managers to commit implicitly not to expropriate outside shareholders.

In contrast to the view of Bebchuk et al. (2000) and Faccio et al. (2001), Gomes (2000) also argues that the costs associated with the separation of ownership and control are not so severe in markets with low protection of shareholders due to the reputation-building mechanism of controlling shareholders. Easterbrook (1984) proposes that dividends may keep firms in the capital market where the monitoring of managers is available at lower cost. In sum, the substitute models of dividends rely on the need for firms to come to the external capital markets to raise funds. To be able to raise funds on attractive terms, the controlling shareholder or manager must establish a reputation for not expropriating outside investors.

The relationship between the identity of the controlling shareholder and the dividend payout level is less well understood. Angeldorff and Novikov (1999) claim that firms controlled by private owners have lower dividend levels in Swedish firms.<sup>7</sup> Moreover, Cronqvist and Nilsson (2003) argue that the agency problems of controlling shareholders with votes in excess of cash-flow rights are more severe with family owners as compared to corporate or financial owners. We will explore whether there exists any systematic

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<sup>7</sup> It should be noted that Finland and Sweden have different dividend tax schedules. Finland still has the imputation tax credit (*avoir fiscal*) system whereas Sweden does not. The *avoir fiscal* system makes dividends more favourable for Finnish private individuals than for Swedish ones, which could affect the preferences for dividends by controlling private individuals.

relationship between the type of the controlling shareholder and dividend payouts in Finnish listed firms.

Other explanations for why firms pay dividends include taxation and signaling.<sup>8</sup> While it is easy to see that investors in different tax positions will have different tax preferences, it is harder to explain explicitly firms' dividend policies based on tax clienteles. In Finland, taxation of dividends is based on the imputation system (*avoir fiscal*), which entitles Finnish shareholders to an imputation tax credit.<sup>9</sup> This tax credit creates a preference for dividends over capital gains. The tax credit system does not, however, apply to non-taxed shareholders (including mutual funds) and foreign shareholders. Foreign shareholders are further subject to a withholding tax at the rate of 29%.<sup>10</sup> Consequently, shareholders could be divided into three different groups: (i) shareholders who prefer dividends over capital gains, (ii) shareholders who are indifferent between dividends and capital gains, and (iii) shareholders that prefer capital gains. Private investors and corporations would be in the first group, non-taxed investors, including mutual funds, in the second, and foreigners in the third group.<sup>11</sup>

### 3. Ownership and control in Finnish companies: descriptive statistics

This section presents descriptive statistics on controlling shareholders' types in Finnish listed firms. Moreover, we explore how the owner type and the control stake differ with firm size, how common dual-class share structures are and how they are used.

Table 3 reports the number of firms in which the controlling shareholder uses votes in excess of, equal to, and below their cash-flow rights. In 40% (33% + 7%) of firms in 1999, the votes of the largest shareholder depart from her cash-flow rights. In 33% of these firms, high voting shares are used to increase control, and in 7% of firms the largest shareholder holds more cash-flow rights than votes. We observe that ownership and control separation is higher for the largest and the second largest shareholder. In contrast, the third largest

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<sup>8</sup> Important papers on dividends and taxation include Miller and Scholes (1978) and Poterba and Summers (1984). Two influential papers explaining the information content of dividends include Battacharya (1979), and Miller and Rock (1985).

<sup>9</sup> First, firms' profits are taxed at a flat corporate tax rate, which was 28% for 1999. Shareholders' dividends and capital gains are then taxed at the capital gains tax rate, which was 29% in 2000. Finnish taxed shareholders are further entitled to the imputation tax credit, which was 7/18 in 1999 of the dividends received from the firm. The tax credit means that the investor pays an effective dividend tax rate of 1.4%  $((0.29/0.72)-(0.28/0.72))$  for the period. In year 2000 the corporate tax was raised to 29 and the tax credit to 29/71, which made the whole cash dividend untaxed for the domestic taxed investor.

<sup>10</sup> Finland has entered into double taxation treaties with approximately 60 countries in which case the withholding tax is reduced.

<sup>11</sup> See Liljeblom, Löflund and Hedvall (2001) for a further discussion on shareholders' preferences for dividends versus capital gains due to different tax positions in Finland.

shareholder uses votes in excess of cash-flow rights (23%) less frequently, and instead more often has cash-flow rights in excess of control rights (17%). This pattern suggests that the two largest shareholders appreciate control rights, whereas the third owner has a more passive role.

In Table 4 (Panel A and B), the identity of the controlling shareholder is displayed using the 10% and 20% control cut-off levels. We consider firms with no controlling shareholder, at the 10% or 20% level, as widely held. Panel A shows that in about 30% of all firms the controlling shareholder, at the 20% cut-off level, is an individual or a family. Another frequent controlling owner category is ownership by other corporations, which is the type in control in about 19% of firms. The other ownership categories are state (10%), financial institutions (6%), and miscellaneous (5%). In 30% of firms, no one controls 20% or more of

**Table 4. Control (10% and 20%) of Finnish listed firms by size**

This table displays the type of the largest controlling shareholder when control is defined as either more than 20% (Panel A) or more than 10% (Panel B) of the votes based on the firm's size (smallest 20%, middle 60%, and largest 20%) measured by sales, as well as for all firms (last column). A firm is defined as having a dispersed ownership structure if no shareholder has 20% (in Panel A) and 10% (in Panel B) of the votes. In Panel C, the proportion of different ultimate owner types is displayed. The ultimate owner type is shown for the largest shareholder of each firm. The sample consists of 133 Finnish listed firms.

	Smallest 20%	Middle 60%	Largest 20%	All sample
<b>Panel A: Type of the largest shareholder at 20% cut-off</b>				
Private shareholders	26.92%	41.98%	11.54%	30.08%
Corporations	19.23%	20.99%	15.38%	18.80%
Financial institutions	3.85%	6.17%	3.85%	6.02%
State or city	11.54%	3.70%	26.92%	9.77%
Miscellaneous	3.85%	1.23%	3.85%	5.26%
Widely held	34.62%	25.93%	38.46%	30.08%
<b>Panel B: Type of the largest shareholder at 10% cut-off</b>				
Private shareholders	38.46%	40.74%	11.54%	36.09%
Corporations	34.62%	25.93%	26.92%	27.82%
Financial institutions	3.85%	13.58%	11.54%	11.28%
State or city	11.54%	4.94%	26.92%	10.53%
Miscellaneous	7.69%	6.17%	7.69%	6.77%
Widely held	3.85%	8.64%	15.38%	7.52%
<b>Panel C: Largest ultimate owner type (10% control along the control chain)</b>				
Family (or unlisted firm)	65.39%	75.31%	34.62%	65.41%
Widely held (dispersed)	3.85%	8.64%	19.23%	9.77%
State or city	11.54%	7.41%	30.77%	12.78%
Widely held corporation	11.54%	3.70%	3.85%	5.26%
Widely held financial	3.85%	1.23%	3.85%	2.26%
Miscellaneous	3.85%	3.70%	7.69%	4.51%

the votes. Panel B in Table 4 shows the distribution of control using the 10% control cut-off. By this definition, financial institutions control roughly 11% of firms. Panel A and B also show how the type of the controlling shareholder varies with firm size (measured by sales). In Panel C of Table 4, we report the largest ultimate shareholder's type. By this control definition, the largest ultimate controlling shareholder category is a family or an unlisted firm in about 65% of the sample firms.

## **4. Ownership and dividends**

This study uses the dividends-to-earnings ratio as the main measure for firms' dividend policy. We use three different specifications: the dividend-to-earnings ratio for the current year, an industry adjusted dividend-to-earnings ratio for the current year, as well as a 5-year average dividend-to-earnings ratio (for 1995-1999). We follow La Porta et al (2000), who control for industry effects, and Faccio et al (2001) who use average payout ratios for five years.

The independent variables used in the analysis can be grouped into four main categories: ownership concentration variables, ownership and control separation variables, ownership type variables, and variables that control for firm specific effects such as size and growth. The construction of all variables used in the analysis is presented in Appendix 2.

### *4.1. Simple statistics on ownership structure and dividend payout ratio*

In Table 5, we present some preliminary results by showing median and mean values of the dividend-to-earnings ratios for the whole sample, as well as for firms with different control structures. We also present z-statistics for differences in median values of dividend-to-earnings ratios for control structures that are of particular importance for this study.

In Panel A of Table 5, we report the dividend payout ratios for different sub-samples – firms that separate ownership and control, firms with concentrated control, group-affiliated firms, and mature vs. growth firms. Panel A shows that a firm controlled by a majority shareholder (above 50% of votes) has lower median and mean payout ratios compared to the whole sample. When the controlling shareholder uses votes in excess of equity, the payout ratio is higher than the average value for all firms.

In Panel B of Table 5, we report z-statistics for differences in medians between different control structures. The z-statistic (2.224) for the difference between dividend payout ratios in

**Table 5. Dividends-to-earnings by control category and growth opportunities**

The table classifies firms based on their control structure (Panel A) and the controlling shareholder's type at the 10% cut-off level (Panel C). For the different control classifications, the table reports median and mean values of the dividends-to-earnings ratio. Panel B and Panel D reports the Wilcoxon-Mann-Whitney z-statistic for differences in median dividend-to-earnings ratios between firms in different ownership and control categories and firms with different growth opportunities. The sample includes 127 Finnish listed firms. The dividends are reported as a percentage of the earnings in fiscal year 1999. Variables are defined in Appendix 2. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

Variable	Median Div/Earn (%)	Mean Div/Earn (%)
<b>Panel A: Control structures</b>		
Controlling shareholder's ownership/control ratio $\geq 1$ (a)	42.19	44.95
Controlling shareholder's ownership/control ratio $< 1$ (b)	51.06	70.28
Control by the largest shareholder $\geq 20\%$ of votes	43.75	48.25
Control by the largest shareholder $< 20\%$ of votes	47.48	65.88
50% voting majority by the largest shareholder (N=45)	38.18	39.74
Another large shareholder present (N=19)	34.94	32.54
Group affiliated firm (N=44)	41.84	43.84
Mature firm (N=63)	46.51	63.66
Growth firm (N=64)	41.08	43.55
All firms (N=127)	44.64	53.52
<b>Panel B: Z-Statistics for differences in medians</b>		
Non-separation vs. separation of ownership & control [(a) vs. (b)]	-2.224**	
Non-majority vs. majority owned firm	2.438**	
Control below 20% vs. control above 20%	1.356	
No large second shareholder vs. another large shareholder present	2.131**	
Mature vs. growth firm	1.667*	
<b>Panel C: Control (10%) by owner type</b>		
Controlling owner-manager (N=22)	33.86	51.97
Controlling family owner (N=20)	53.23	54.61
Controlling owner-manager or Controlling family owner	43.75	64.98
CEO a large shareholder (N=20)	17.14	43.95
Controlling corporate shareholder (N=33)	41.88	42.55
Controlling financial institution (N=16)	38.75	43.82
State (or city) controls the firm (N=13)	42.86	51.10
<b>Panel D: Z-Statistic for differences in medians</b>		
Controlling family owner vs. Controlling owner-manager	1.583	
CEO is <i>not</i> a large shareholder vs. CEO is a large shareholder	2.720***	

non-majority (N = 82) and majority (N = 45) held firms is positive and statistically significant at 5% level. This preliminary result suggests that when the controlling owner is unambiguously in control firms pay lower dividends. In particular, the result suggests that a large owner in control may enjoy private benefits that are not shared with outside shareholders. We also show that the difference in median dividend payouts between owners using high-voting shares and one share-one vote schemes is statistically significant at the 5% level. This preliminary finding, which does not consider the level of separation, is contradicting the argument that the separation of ownership and control would be associated with higher agency costs that are reflected in lower dividend payout ratios.

Panel B also shows that dividend-to-earnings ratios are lower in firms with another large shareholder holding at least 20% of the vote. The difference in median payout levels between firms with no large second shareholder and firms with another dominant shareholder is statistically significant at the 5% level. This result indicates that multiple large blockholders may prefer not to share the cash flows of the firm with minority shareholders.

The difference in medians between mature and growth firms is found to be weakly statistically significant, and indicates that mature firms have higher dividend-to-earnings ratios. This finding is partly consistent with La Porta et al. (2000) who find that the dividend payouts are higher in mature firms than in rapidly growing firms, though their result holds only for common-law countries.

In Panel C and D of Table 5, we show dividend payout ratios for different controlling owners depending on their type. Since this study focuses on the agency problems between inside and outside shareholders, we are particularly interested in private owners that directly control the firm. Therefore, we construct three different variables for private owners. The first variable, labeled "controlling owner-manager", indicates that the largest controlling shareholder is also a manager. The second variable, called "controlling family owner", includes all other private owners with or without board representation. At first sight, the dividend-to-earnings ratios for different private owners indicate that the owner-managers pay lower dividends as a percentage of earnings. The test of differences in median values between family owners and owner-managers is positive but not significant at conventional levels (Panel D). The third variable separates between firms in which the CEO is personally one of the three largest shareholders measured by votes and firms where he is not. The test of differences in median dividend-to-earnings suggests dividend payouts are significantly lower when the CEO is also a large shareholder in the firm.

In Table 6, we show how median dividend-to-earnings ratios vary by industry. Some industries, particularly firms in the telecommunications sector, have lower dividend payout levels. As a consequence, we control for industry-specific effects in the regressions by using an industry adjusted dividend-to-earnings variable.

The preliminary finding about the lower dividend payout levels in majority held firms is generally consistent with the outcome agency model of dividends proposed by La Porta et al (2000). In the next section, we present the results from the regression analyses that control for different effects including firm size, growth, and industry. Moreover, we test the robustness of the results.

**Table 6. Dividends-to-earnings by industry**

The table shows the median dividend-to-earnings ratios of firms classified by industry. The industry classification is based on the Helsinki Stock Exchange industry classification for Main list firms, and on the industry reported in the annual reports for New markets and I listed firms. The sample includes 127 Finnish listed firms. The dividends are reported as a percentage of the earnings in fiscal year 1999.

Industry	N	Median Div/earn (%)	Industry	N	Median Div/earn (%)
Banking and Finance	8	52.19	Metal and Engineering	11	45.83
Chemicals	4	67.09	Multibusiness	5	62.95
Construction	4	46.88	Other Industries	15	34.71
Energy	2	45.78	Other Services	10	51.15
Food	8	51.66	Telecom. & Electronics	24	21.77
Forest	4	36.27	Trade	9	54.55
Investment	10	42.68	Transport	5	64.62
Media	8	57.23	All firms	127	45.00

#### 4.2. Regressions

In this section, we present the regression results of dividend-to-earnings ratios on ownership variables in a sample of 127 Finnish listed firms. We employ the ordinary-least-squares (OLS) model, and report the estimations conducted with standard errors that are robust with respect to heteroscedasticity. In Appendix 3 we compare our regression results to an iteratively re-weighted least squares model that control for potential observations with high leverage or influence. Tobit models are also used to deal with potential problem due to zero values of dividends in the dependent variable. The Tobit model results are similar to the OLS model results and are only briefly commented on in Section 4.3.

We control for: (1) investment opportunities by using sales growth deciles, (2) firm size by using the logarithm of total book value of assets, and (3) the aggregate foreign ownership. The last variable is included to control for the preference for capital gains to dividends due to double taxation of dividends for foreign investors.

The main purpose of the regressions is to estimate the sign of the relationship between a particular explanatory variable and the dividend level. Therefore, as we are not aiming at measuring the preciseness of the specified model in explaining the differences in dividend levels, but only the sign of the relationship, we believe that low  $R^2$  values (in range of 3–13%) are not a major problem.

The main regression results are presented in Tables 7 through 9. Table 7 reports the results of regressions with the dividend-to-earnings ratio as the dependent variable. Table 8 re-estimates the same regression models with industry adjusted dividend-to earnings ratios. Finally, Table 9 presents results for dividend-to-earnings and industry adjusted dividend-to-

earnings ratios using the ultimate ownership specification. Several other specification tests are left for the robustness section.

**Table 7. Regression results for dividend-to-earnings ratios**

Estimates of ordinary least squares models relating the dividend-to-earnings ratio to the ownership and control structure of the firm. More detailed variable descriptions are in Appendix 2. The sample consists of 127 Finnish listed firms. The dividends are reported as a percentage of the earnings in fiscal year 1999. Robust t-statistics are reported below the coefficient estimates. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	Dividend-to-earnings ratio					
	(1)	(2)	(3)	(4)	(5)	(6)
Concentration of control by 3 largest shareholders	-0.0053** (-2.25)		0.0060** (-2.58)	-0.0053** (-2.51)		
50% voting majority by the largest shareholder (dummy)		-0.2105** (-2.40)				
Controlling owner-manager (dummy)			0.1289 (0.65)			
Controlling family owner (dummy)			0.0940 (0.74)			
Controlling corporate shareholder (dummy)			-0.1049 (-0.91)			
Controlling financial institution (dummy)			-0.1423 (-0.97)			
Group affiliation (dummy)				-0.1332 (-1.51)		
Controlling shareholder's ownership/control ratio				-0.1700 (-0.49)		
Control by the largest shareholder					-0.0052** (-2.10)	-0.0047** (-2.26)
Control by the second largest shareholder					-0.0061 (-1.44)	
Another large shareholder present (dummy)						-0.2423*** (-2.93)
Control by the third largest shareholder					-0.0020 (-0.23)	
Foreign ownership (%)	0.0003 (0.05)	0.0016 (0.25)	0.0012 (0.19)	0.0018 (0.29)	0.0004 (0.06)	0.0003 (0.04)
Growth decile	-0.0304* (-1.69)	-0.0304* (-1.70)	-0.0311 (-1.58)	-0.0297* (-1.68)	-0.0311* (-1.68)	-0.0333* (-1.82)
Size	0.0135 (0.71)	0.0231 (1.18)	0.0209 (1.13)	0.0218 (1.21)	0.0148 (0.80)	0.0144 (0.76)
Intercept	0.9061*** (3.21)	0.6220*** (2.83)	0.9053*** (3.17)	1.0404** (2.35)	0.8865*** (3.05)	0.8426*** (3.32)
R <sup>2</sup>	0.10	0.08	0.13	0.12	0.09	0.11
R <sup>2</sup> adj.	0.07	0.04	0.07	0.07	0.05	0.08
Prob>F	0.058*	0.041**	0.131	0.039**	0.109	0.009***
Observations	127	127	127	127	127	127



#### *4.2.1. Ownership concentration*

We find a negative effect of ownership concentration on dividend payout ratios. We measure concentration by the sum of votes held by the three largest shareholders. The significantly negative coefficient indicates that a higher concentration of voting rights is associated with lower dividend payouts. Model (1) of Table 7 shows that the concentration of control by the three largest shareholders has a significantly negative impact on dividend-to-earnings ratios. In Model (2), we use a dummy variable that equals 1 when the largest shareholder has a voting majority (above 50% of votes). This coefficient is significant and is equal to 0.14–0.20 depending on specification. The results are qualitatively the same when using industry adjusted dividend-to-earnings ratios (see Table 8). In Table 9 we test for the influence of the ultimate controlling shareholder on dividend payout levels. The definition of ultimate control differs from immediate control because the control of the largest shareholder is measured by the weakest link along the control path when control is held through other firms or other type of owners. Table 9 confirms the findings in Tables 7 and 8, namely, that the concentration of control influences the dividend-to-earnings ratio significantly negatively.

In Model (5) of Tables 7 and 8, we include variables measuring the votes held by the largest, the second and the third largest shareholders. The results indicate a negative impact of the largest shareholders voting power. An interesting finding in Model (5) is the negative sign for the voting stake of second largest shareholder (the continuous variable). To further explore the role of another large shareholder, we include in Model (6) of Table 7 and 8 a dummy variable equal to one if the second largest shareholder holds at least 20% of the voting rights in the firm.<sup>12</sup> We find that the impact of another large blockholder affects the dividend-to-earnings ratio negatively. The coefficient of “another large shareholder” is statistically significant at the 1% level. The second largest shareholder holds at least 20% of the votes in about 15% of the sample firms. This finding contradicts the argument about a positive monitoring role by another large shareholder, as proposed by Faccio et al (2001) for Europe, and Gugler and Yurtoglu (2001) for German corporations.

Our findings about the negative effect of ownership concentration by the three largest shareholders combined, as well as of the voting power held by the second largest shareholder suggest that the largest and second largest shareholders might collude in generating private benefits by paying lower dividends. This result is in line with a companion paper (Maury and

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<sup>12</sup> We also used a 10% control specification for the second largest shareholder. This variable was highly insignificant, which suggests that the negative impact of a second blockholder is dominated for higher control levels, such as 20% of the votes or more.

**Table 8. Regression results for industry adjusted dividend-to-earnings ratios**

Estimates of ordinary-least-squares models relating the industry adjusted dividend-to-earnings ratio to the ownership and control structure of the firm. More detailed variable descriptions are in Appendix 2. The sample consists of 127 Finnish listed firms. The dividends are reported as a percentage of the earnings in fiscal year 1999. Robust t-statistics are reported below the coefficient estimates. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	Industry adjusted dividend-to-earnings ratio					
	(1)	(2)	(3)	(4)	(5)	(6)
Concentration of control by 3 largest shareholders	-0.0046** (-2.09)		-0.0053** (-2.40)	-0.0044** (-2.51)		
50% voting majority by the largest shareholder (dummy)		-0.1446* (-1.72)				
Controlling owner-manager (dummy)			0.1791 (0.92)			
Controlling family owner (dummy)			0.0227 (0.18)			
Controlling corporate shareholder (dummy)			-0.1019 (-0.93)			
Controlling financial institution (dummy)			-0.1305 (-0.97)			
Group affiliation (dummy)				-0.1564* (-1.94)		
Controlling shareholder's ownership/control ratio				-0.1554 (-0.47)		
Control by the largest shareholder					-0.0044* (-1.92)	-0.0038* (-1.92)
Control by the second largest shareholder					-0.0059 (-1.48)	
Another large shareholder present (dummy)						-0.2167*** (-2.71)
Control by the third largest shareholder					-0.0051 (-0.64)	
Foreign ownership (%)	-0.0006 (-0.10)	0.0007 (0.12)	0.0005 (0.08)	0.0012 (0.21)	0.0007 (-0.12)	-0.0005 (-0.09)
Growth decile	-0.0077 (-0.48)	-0.0073 (-0.45)	-0.0047 (-0.48)	-0.0070 (-0.45)	-0.0079 (-0.48)	-0.0102 (-0.62)
Size	0.0116 (0.65)	0.0208 (1.09)	0.0222 (1.34)	0.0212 (1.29)	0.0108 (0.62)	0.0127 (0.70)
Intercept	0.2966 (1.14)	0.0256 (0.13)	0.2740 (1.07)	0.4076 (1.06)	0.3130 (1.16)	0.2268 (0.96)
R <sup>2</sup>	0.06	0.03	0.10	0.09	0.06	0.07
R <sup>2</sup> adj.	0.03	0.0001	0.04	0.04	0.02	0.03
Prob>F	0.27	0.323	0.183	0.033**	0.442	0.011**
Observations	127	127	127	127	127	127

Pajuste, 2003) that finds some evidence of collusion between the largest and second largest shareholders; the firms, in which the second largest shareholder is pivotal for gaining majority control, tend to be valued lower (have lower Tobin's Q). The results also support Faccio et al (2001) findings on East Asian companies.

#### 4.2.2. *Controlling owner's type*

We have argued that various owner categories could have different preferences for dividends for instance due to agency problems or tax reasons. Therefore, we test for the influence of different controlling owner types on the dividend payout ratio. We find a positive coefficient for private owners (owner-manager or family), indicating that private owners are associated with higher rather than lower dividend levels. The coefficients for institutional investors and corporations are both negative (see Model (3) in Table 7 and Table 8). However, the owner type coefficients are not significant at conventional levels in Tables 7 and 8. In Table 9, we use the ultimate ownership specification. The dummy variable taking the value one if the ultimate controlling shareholder is a private investor and zero otherwise is positive and significant (at the 10% level) in Model (3), indicating that private controlling shareholders would prefer higher dividends. When controlling for industry effects the coefficient of ultimate private owner variable is positive but not significant at conventional levels. The results in Appendix 3 confirm the positive impact of ultimate private controlling shareholders on the dividend-to-earnings ratio.

In Table 5 (Panel D) we showed that the dividend-to-earnings ratio is significantly lower in firms where the CEO is among the three largest shareholders. We also estimated the coefficient of the CEO variable in an OLS model. The coefficient was not statistically significant indicating that the result is affected by some influential observations. To explore the role of the CEO variable further, we employ an iteratively re-weighted least squares model (see Appendix 3) that gives lower values to observations with high leverage or influence. When we include the largest shareholders voting stake and the control variables used in Tables 7–9, the coefficient for the CEO variable is negative and statistically significant at the 1% level.<sup>13</sup> The t-value varies between –3.25 and –3.30 depending on the model specification. This result supports the argument that a controlling shareholder that has a large control stake and also is a top executive in the firm may become entrenched and start to extract private benefits instead of paying out cash flows as pro-rata distributions to all shareholders.

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<sup>13</sup> The insignificant result in the OLS model is likely to be driven by few influential observations. Motivated by the significantly negative relationship between the variable “CEO a large owner” and the dividend payouts found in Table 5, panel D, we use a weighted least squares model to further test this relationship.

**Table 9. Regression results for dividend-to-earnings ratios using ultimate ownership**

Estimates of ordinary least squares models relating the dividend-to-earnings ratio to the largest ultimate controlling shareholder's control and cash-flow ownership stake in the firm. More detailed variable descriptions are in Appendix 2. The sample using dividend-to-earnings ratios and industry adjusted dividend-to-earnings ratios consists of 127 Finnish listed firms. The dividends are reported as a percentage of the earnings in fiscal year 1999. Robust t-statistics are reported below the coefficient estimates. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	Dividend-to-earnings ratio			Industry adjusted dividend-to-earnings ratio		
	(1)	(2)	(3)	(4)	(5)	(6)
Control by the largest ultimate shareholder	-0.0048** (-2.44)		-0.0045*** (-2.78)	-0.0039** (-2.19)		-0.0047** (-2.47)
50% voting majority by the largest ultimate shareholder (dummy)		-0.2071** (-2.41)			-0.1431* (-1.79)	
Ultimate private controlling shareholder (dummy)			0.1859* (1.78)			0.1624 (1.55)
Ultimate controlling shareholder's ownership/control ratio	0.0133 (0.05)	0.0330 (0.12)	0.0092 (0.04)	-0.0081 (-0.03)	0.0145 (0.06)	-0.0117 (-0.05)
Foreign ownership (%)	0.0011 (0.18)	0.0016 (0.24)	0.0023 (0.36)	0.003 (0.04)	0.0007 (0.12)	0.0013 (0.22)
Growth decile	-0.0300* (-1.67)	-0.0307* (-1.70)	-0.0332* (-1.80)	-0.0070 (-0.43)	-0.0074 (-0.45)	-0.0098 (-0.58)
Size	0.0200 (1.05)	0.0229 (1.19)	0.0306* (1.77)	0.0178 (0.98)	0.0207 (1.11)	0.0271 (1.66)
Intercept	0.7411** (2.29)	0.5964* (1.87)	0.6635** (2.20)	0.1524 (0.52)	0.0161 (0.05)	0.0845 (0.31)
R <sup>2</sup>	0.09	0.08	0.11	0.05	0.03	0.07
R <sup>2</sup> adj.	0.05	0.04	0.07	0.01	-0.01	0.02
Prob>F	0.069*	0.060*	0.029**	0.229	0.338	0.082*
Observations	127	127	127	127	127	127

It seems that private investors prefer dividends to capital gains due to tax reasons; the imputation tax credit system available in Finland was discussed in Section 2.3. At first sight, one would argue that this interpretation contradicts the traditional agency problem theory of entrenched private controlling shareholders that suggests that private owners pay lower dividends in order to retain cash for projects that generate private benefits. However, we could argue that the previous studies do not look at different tax systems in the sample countries, which suggests that in some cases, especially when private owners have limited access to private benefits (e.g. if they do not have managerial representation) tax advantages may outweigh the private benefits. We conjecture this argument by showing that dividend payouts are lower when the CEO is among the three largest shareholders (see Table 5 and Appendix 3). Therefore, we may propose that private owners face a trade-off between tax advantages and private benefit extraction. As a result, private owners without inside representation would pay on average higher dividends than the ones with managerial ties.

What could be the reason for corporations and financial institutions to pay on average lower dividends? Model (3) in Tables 7 and 8 show that corporate and institutional shareholders have a negative impact on the dividend payout ratio (although not significant). One of the explanations is group affiliation, which is explored in Model (4) of Tables 7 and 8. Group affiliation is measured by a dummy variable that takes value 1 if the firm, by using 20% of the votes as the control criteria, (1) is controlled by another firm in the sample, (2) has the same controlling shareholders as at least one another shareholder in the sample, or (3) if it is controlled indirectly through another firm in the sample. The variable is close to the definition used by Faccio et al. (2001) and attempts to capture the idea that in group-affiliated firms profits can be channeled away by other means than dividend payouts, e.g. cross-subsidization of firms in the group. We find that the group-affiliation is negatively related to dividend payout ratios (the variable is statistically significant only in industry adjusted dividend-to-earnings regressions, but, nevertheless, it keeps the right sign also in other specifications). This finding suggests that firms affiliated to a group might experience more agency problems; cross-subsidization within the group might motivate these firms to retain cash rather than pay it out as dividends.

#### *4.2.3. Separation of ownership and control*

We hypothesized that if the controlling shareholder uses votes in excess of cash-flow rights, i.e. have an ownership-to-control ratio less than one, the negative effect of control would come with lower dividends-to-earnings ratios. This argument does not get empirical support. Model (4) in Tables 7 and 8 shows that the variable for separation of ownership and control is negative, but highly insignificant.<sup>14</sup>

The ultimate controlling shareholder's ownership-to-control ratio takes into account not only the use of dual-class shares to enhance control but also the effect of pyramiding because the cash-flow ownership stake of the ultimate controlling shareholder is measure as the product of cash-flow ownership along the control path. Also under this specification (see Table 9), the ownership-to-control ratio does not show a significant impact on dividend-to-earnings ratios.

This result indicates that the level of controlling shareholder's deviation from one share one vote scheme does not have a negative influence on dividend payouts. Our interpretation of the result is as follows. As most of the firms that use dual-class shares have private

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<sup>14</sup> We cap the ownership-to-control ratio at the 99<sup>th</sup> percentile to reduce the impact of one influential observation in both the immediate and ultimate ownership specification of the variable.

controlling shareholders, this leads us back to the discussion on owner's type. We may argue that these owners face the trade-off between tax advantages of dividends and private benefits by retaining the cash within the company. It seems that owner's type is a more dominant factor than pure separation of ownership and control. Therefore the ownership and control separation result is inconclusive.

#### *4.3. Robustness*

As a robustness test, we re-estimate the regressions in Table 7 and 8 using censored (Tobit) models as in Barclay et al (1995). Although only 15 % of the dividends-to-earnings ratios in the observations are zero, this bunching problem could affect the results. We find that the censored models produce qualitatively similar results to the models of Table 7 and Table 8. The ownership concentration variable is significantly negative in all measures of the dividend payout ratio.

In Appendix 3 we compare OLS models to iteratively re-weighted least squares models. The comparative statistics further reinforce our earlier results on the relationship between the firm's control structure and dividend payouts.

We also explore the sensitivity of the results to a particular point in time. To examine this issue, we re-estimate the models in Table 7 using a five-year average of the dividend-to-earnings variable rather than an annual measure for available years. The results are generally similar to the previous results.

Finally, as La Porta et al (2000) point out, the fact that one does not look at all financing choices at the same time may limit the interpretation of the results. For instance, Jensen (1986) argues that debt and dividends are substitutes in dealing with agency problems in firms. To address this issue, we include the leverage ratio in the models in Table 7. Contrary to the prediction, the coefficient for the leverage measure is positive although insignificant for the alternative model specifications in Table 7. Including the leverage ratio in the regressions does not alter the results.

## **5. Conclusions**

This study on controlling shareholders and dividend policy in Finnish listed firms provides several valuable insights on the important topic of agency problems between various insider-outsider groups. We spot several blocks of potentially clashing interests.

First, we find that the concentration of control is negatively related to the dividend-to-earnings ratio. This result holds for alternative specifications of control concentration,

including votes held by the largest, the three largest shareholders, and the controlling shareholder with a majority stake. We also observe that the negative effect of ownership concentration is not driven by the concentration of only the largest shareholder's voting power, but also the second largest shareholder's stake. These findings propose that the largest and second largest shareholders might collude in generating private benefits that are not shared with minority shareholders as indicated by the lower dividend payout levels.

Second, we observe that various owner types may have different preferences for dividends due to agency problems, or tax reasons. Our results indicate that ultimate private controlling shareholders are associated with higher dividends. One possible explanation for the positive relationship is the preferential tax treatment of dividends for private investors. In addition, we find evidence of differences in dividend payouts among private owners. In particular, we find that if the CEO also is a controlling shareholder the dividend payout ratios tend to be lower. This result suggests that a CEO who also is a large shareholder may become entrenched. Therefore, we propose that private owners may face a trade-off between tax advantages and private benefit extraction. As a result, private owners with inside representation tend to pay on average lower dividends than the ones without managerial ties.

There is some evidence of a conflict between group-affiliated controlling shareholders and other shareholders. If the controlling owner is a corporation or financial institution with links to other companies, it may have other gains than security benefits. For example, they may gain from internal capital markets (cash is retained for cross subsidizing of companies) or empire building (cash is retained for buying new companies).

Finally, the results indicate that the separation of ownership and control does not have a negative influence on dividend payouts. Private owners control most of the firms that use dual-class shares. As we already discussed, there are considerable differences within the private owners' category that rests on a trade-off between the tax advantages of dividends and private benefits. Moreover, the controlling owner's type seems to be a more dominant factor than pure separation of ownership and control. Therefore, our results show that ownership and control separation per se does not help to explain differences in dividend payout ratios.

This study is by far not claiming to give a full picture of ownership structures and agency problems in Finland. Nevertheless, it is a building block, which opens an interesting discussion on how different ownership and control structures influence firm behavior and dividend policy in Finnish listed firms.

## Appendix 1. Firms, industry, and dividend/earnings ratios

Source: *Delphi Economics* (dividends), *Helsinki Stock Exchange and Annual Reports* (industry classification).

	Div/earn 1999	Av. Div/earn 1995-1999		Div/earn 1999	Av. Div/earn 1995-1999
<u><i>Banks and finance</i></u>			<u><i>Other industries</i></u>		
Ålandsbanken	0.88	1.25	Amer-yhtymä	0.35	0.54
Conventum	0.53	0.52	Exel	0.48	0.39
Mandatum Pankki	0.92	0.36	Metsä Tissue	1.09	0.46
OKO	0.41	0.30	Rapala Normark	0.08	0.53
Sampo	0.51	0.40	Sanitec	0.28	0.24
EQ Online	0.00	0.00	Tamfelt	0.59	0.50
Nordic Baltic Holding	0.38	0.48	Kasola	2.00	0.59
Pohjola	0.96	0.80	Kekkilä	0.50	0.38
<u><i>Chemicals</i></u>			Larox	0.30	0.97
Kemira	1.00	0.49	Martela	0.30	0.31
Orion-yhtymä	0.92	0.75	Saunatec	0.50	0.47
Uponor	0.42	0.32	Vaahito Group	0.00	0.38
Biotie Therapies	0.00	0.00	Biohit	0.00	0.00
<u><i>Construction</i></u>			Leo-Longlife	0.38	0.68
Lemminkäinen	0.56	0.68	Nokian Renkaat	0.34	0.35
Tulikivi	0.50	0.55	<u><i>Other services</i></u>		
YIT-Yhtymä	0.38	1.13	Aldata Solution	0.00	0.17
Honkarakenne	0.44	0.54	A-Rakennusmies	0.48	0.31
Espoon Sähkö	0.49	0.37	Jaakko Pöyry Group	0.41	0.22
Fortum	0.43	0.40	Novo Group	0.43	0.43
<u><i>Food industry</i></u>			Rakentajan Konev.	0.60	0.41
Atria	0.45	0.41	Tietoenator	0.54	0.46
Chips	0.65	0.79	Markkinointi Viherj.	0.94	0.94
Hartwall	0.22	0.67	Panostaja	3.00	0.60
Lännen Tehtaat	0.65	0.44	PI-Consulting	0.00	0.00
Olvi	0.45	0.48	Sysopen	0.61	0.67
Raisio	3.00	0.87	<u><i>Telecom. and electronics</i></u>		
HK Ruokatalo	0.58	0.45	Aspocomp Group	0.31	0.31
Huhtamäki van Leer	0.34	0.44	Comptel	0.20	0.07
<u><i>Forest industry</i></u>			Eimo	0.86	0.33
Metsä-Serla	0.32	0.65	Elcoteq	0.52	0.27
Stora Enso	0.40	0.46	F-Secure	0.00	0.17
Stromsdal	0.00	0.02	Helsingin Puhelin	0.18	0.28
UPM-Kymmene	0.58	0.40	Instrumentarium	0.97	0.57
<u><i>Investment</i></u>			JOT Automation Gr.	0.14	0.13
Castrum	0.67	0.13	Nokia	0.36	0.33
Citycon	0.64	0.25	Perlos	0.20	0.07
Interavanti	0.43	0.39	PKC Group	0.36	0.31
Julius Tallberg-Kiint.	0.53	0.42	PMJ automec	0.25	0.14
Norvestia	0.26	0.37	Sonera	0.24	0.31
Polar Kiintelstöt	0.00	0.00	Stonesoft	0.00	2.11
Sponda	0.43	0.22	Tampereen Puhelin	0.47	0.20
A Company Finland	0.00	0.00	Teleste	0.25	0.15
Menire	0.00	0.00	TJ Group	0.00	0.25
Neomarkka	neg	1.06	Vaisala	0.32	0.33
Technopolis	0.70	0.46	Benefon	0.00	0.33
			Basware	0.69	0.67
			Liinos	0.20	0.23
			Nedeccon	0.00	0.00



Appendix 1. Continued

	Div/earn 1999	Av.Div/earn 1995-1999		Div/earn 1999	Av. Div/earn 1995-1999
<u>Media and publishing</u>			<u>Telecom. and electronics(continued)</u>		
Alma Media	0.56	0.33	Proha	0.00	0.00
Janton	0.59	1.00	Satama Interactive	0.00	0.00
Keskisuomalainen	0.65	0.39	Efore	18.00	8.86
SanomaWSOY	0.85	0.56	<u>Trade</u>		
Ilkka-Yhtymä	0.48	0.35	Ford	0.27	0.18
Kauppakaari	0.49	0.49	Kesko	1.52	0.67
Pohjois-Karj. Kirjap.	0.00	1.07	Rautakirja	0.45	0.54
Talentum	2.50	0.86	Stockmann	0.55	0.57
<u>Metal and engineering</u>			Tamro	0.79	0.91
Componenta	0.56	0.51	Kontram-Yhtiöt	6.00	2.36
KCI Konecranes Int.	0.47	0.35	Plandent	0.40	0.38
Kone	0.34	1.27	Suomen Spar	0.89	0.45
Nordic Aluminium	0.35	0.31	Yleiselektronikka	0.61	0.63
Outokumpu	0.39	1.13	Belton-Yhtiot	0.20	0.21
Partek	0.46	0.57	<u>Transport</u>		
Ponsse	0.54	0.44	Birka Line	0.65	1.00
Raute	1.56	0.75	Finnair	0.68	0.39
Rocla	0.39	0.25	Finnlines	0.40	0.24
Wärtsilä	1.17	1.20	Viking Line	0.81	1.20
Fiskars	0.43	0.50	Silja	0.00	0.00
Metso	neg	0.36			
Rautaruukki	neg	0.33			
<u>Multibusiness</u>					
Aspo	14.29	7.14			
Finvest	1.55	1.75			
Hackman	2.63	1.67			
Kyro	0.59	1.96			
Lassila & Tikanoja	0.63	0.50			
Incap	0.63	0.39			

## Appendix 2. Definitions of variables used in the analysis

This table describes the variables used in the analysis. The amount of cash flow rights and voting rights are immediate stakes if not labeled ultimate ownership or control. The votes and cash-flow rights of family members with the same surname (among the largest 20 shareholders) are summed up to obtain the total share of votes held by that family. An insurance group, as reported in the yearbook *Pörssitieto*, is considered as one shareholder.

Variable	Definition
Dividend-to-earnings (Div/earn)	= Dividends divided by earnings in fiscal year 1999. Earnings are measured after taxes and minority interests but before extraordinary items.
Industry adjusted dividend-to-earnings	= Difference between the firm's dividend-to-earnings ratio and the median dividend-to-earnings ratio of the firm's industry in fiscal year 1999.
Average dividend-to-earnings (Av. Div/earn)	= Average of the dividends-to-earnings ratio for the period 1995-1999 or the available years.
Foreign ownership (%)	= The aggregate amount of votes held by foreign investors.
Growth decile	= Rank decile for average annual growth in sales over the period 1995-1999. Firms are divided into 10 equal groups and in ascending order of sales growth and ranked 1-10.
Size	= Natural logarithm of the book value of total assets.
Concentration of control by 3 largest shareholders	= The sum of votes held by the 3 largest shareholders.
Control by the largest (2 <sup>nd</sup> or 3 <sup>rd</sup> ) shareholder	= Proportion of votes held by the largest (2 <sup>nd</sup> or 3 <sup>rd</sup> ) immediate shareholder.
Ownership by the largest owner	= Proportion of cash-flow rights held by the largest immediate shareholder
Control by the largest <i>ultimate</i> shareholder	= Proportion of votes held by the <i>ultimate</i> controlling shareholder. An ultimate controlling shareholder is defined as the largest shareholder controlling the firm directly or through another firm or several other firms. If the firm is controlled directly and indirectly, the sum of votes is used. Control is measured by the weakest link along the control path.
Ownership by the largest <i>ultimate</i> owner	= Proportion of cash-flow rights held by the largest <i>ultimate</i> controlling shareholder. Cash-flow rights are measured as the product of ownership stakes along the control path when the controlling shareholder is controlling the firm through one or several other firms. Direct and indirect ownership stakes are summed up.
Controlling shareholder's ownership/control ratio	= The cash-flow rights divided by votes held by the largest controlling shareholder.
<i>Ultimate</i> controlling shareholder's ownership/control ratio	= The cash-flow rights divided by votes held by the largest <i>ultimate</i> controlling shareholder.
<i>Ultimate</i> private controlling shareholder	= The <i>ultimate</i> controlling shareholder is a family, private individual or an unlisted firm.
50% voting majority by the largest shareholder	= 1 if the largest owner holds more than 50% of the votes; 0 otherwise.
50% voting majority by the largest <i>ultimate</i> shareholder	= 1 if the largest <i>ultimate</i> owner holds more than 50% of the votes; 0 otherwise.
Another large shareholder present	= 1 if the second largest shareholder holds 20 % or more of the voting rights; 0 otherwise.
Controlling family owner	= 1 if the largest controlling shareholder with ≥10% of votes is a family or a single individual with or without board representation but without managerial representation; 0 otherwise.
Controlling owner-manager	= 1 if the largest controlling shareholder with ≥10% of votes is a private investor who also is a part of the operational management in the firm; 0 otherwise.
CEO a large shareholder	= 1 if the CEO of the firm is directly among the firm's 3 largest immediate shareholders; 0 otherwise.
Controlling corporate shareholder	= 1 if the largest controlling shareholder with ≥10% of votes is another firm; 0 otherwise.
Controlling financial institution	= 1 if the largest controlling shareholder with ≥10% of votes is a bank, insurance company, mutual fund or investment company; 0 otherwise.
State controls the firm	= 1 if the largest controlling shareholder with ≥10% of votes is the state or a city; 0 otherwise.
Group affiliation	= 1 if the meets one of the following criteria: (1) it controls another firm in the sample; (2) it has the same controlling shareholder as at least one other firm in the sample; (3) it is controlled by a shareholder via pyramiding, i.e. indirectly through another firm in the sample.
Mature firm	= 1 if the firm's growth decile is 1-5; 0 otherwise.
Growth firm	= 1 if the firm's growth decile is 6-10; 0 otherwise.

### Appendix 3. Regression results for dividend-to-earnings ratios using OLS and Weighted Least Squares

OLS and iteratively re-weighted least squares (WLS) models relating the dividend-to-earnings ratio to ownership and control variables. More detailed variable descriptions are in Appendix 2. The sample consists of 127 Finnish listed firms. The dividends are reported as a percentage of the earnings in fiscal year 1999. t-statistics are reported below the coefficient estimates. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	Dividend-to-earnings ratio			
	OLS (1a)	OLS (2a)	WLS (1b)	WLS (2b)
Control by the largest ultimate shareholder	-0.0058*** (-2.83)		0.0030** (-2.49)	
Concentration of control by 3 largest shareholders		-0.0064*** (-2.81)		-0.0024** (-2.09)
CEO a large shareholder	-0.084 (-0.47)	-0.0788 (-0.43)	-0.2742*** (-3.30)	-0.2715*** (-3.24)
Ultimate private controlling shareholder	0.2162** (2.60)	0.2107** (2.51)	0.1150* (1.83)	0.1007 (1.59)
Another large shareholder present	-0.2529*** (-2.97)		-0.095 (-1.34)	
Ultimate controlling shareholder's O/C ratio	-0.0151 (-0.06)	-0.0257 (-0.10)	-0.0420 (-0.48)	-0.0245 (-0.28)
Foreign ownership (%)	0.0011 (0.19)	0.0011 (0.18)	-0.0026 (-1.21)	-0.0025 (-1.15)
Growth decile	-0.0359 (-1.84)	-0.0328 (-1.70)	-0.0066 (-0.73)	-0.0039 (-0.43)
Size	0.0206 (1.22)	0.0189 (1.06)	0.0197 (1.44)	0.0196 (1.42)
Intercept	0.8127 (2.69)	0.9053 (2.81)	0.4938 (3.33)	0.4770 (2.94)
R <sup>2</sup>	0.14	0.12	n.a.	n.a.
Prob>F	0.002***	0.024**	0.0004***	0.001***
Observations	127	127	127	127

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# Chapter 3

## Determinants and Consequences of the Unification of Dual-class Shares\*

### 1. Introduction

Firms with dual-class shares<sup>1</sup> are rather common in Europe (Faccio and Lang, 2002), and in many countries around the world, including the United States. A growing literature emphasizes that the asymmetry between cash flow and voting rights created by dual-class ownership allows the controlling parties to receive a disproportionate amount of corporate benefits, the so called private benefits<sup>2</sup> (Grossman and Hart, 1988; and Harris and Raviv, 1988). As a result, corporate valuation can decrease, cost of capital can increase, and a firm can face investment constraints (La Porta et al., 1997, 2002; Claessens et al., 2002; and Cronqvist and Nilsson, 2003). On the other hand, there is a fair amount of theoretical and empirical work showing that, under certain conditions, dual-class shares can benefit shareholders (DeAngelo and DeAngelo, 1985; Fischel, 1987; Burkart et al., 1998; and Dimitrov and Jain, 2003).

Shleifer and Wolfenzon (2002) show theoretically that firms with weaker shareholder protection have lower valuations because investors take into account that some of the profits can be diverted. If market participants believe that profit diversion is more prevalent in dual-class firms than in single-class firms, they will pay less for the former. We can call it a dual-

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<sup>1</sup> Throughout the paper, *dual-class shares* means that the firm has more than one share class (except American Depositary Receipts) with different voting rights. There can be more than two share classes, but all the analysis can be easily generalized to such cases.

<sup>2</sup> Examples of such benefits are the power to elect the board members and the CEO, the power to build business empires, the ability to consume perquisites at the expense of the firm, and the ability to transfer assets to private corporate entities. Alternatively, Holmen and Högfeldt (2004) claim that in Sweden private benefits of control are arising from status, prestige, and social recognition, which are not value destroying.

class “equilibrium”: controlling shareholders enjoy the private benefits, and minority shareholders pay for what they get – the expected cash flow after the extraction of private benefits. This begs the question of why, suddenly, some dual-class companies choose to deviate from this equilibrium.

This paper studies the determinants of the decision to unify the shares with different voting rights (high voting shares and low voting shares) into a single share class. Throughout the paper, I refer to this event as the *unification*. The factors driving the probability of unification are inferred both from ex ante and ex post characteristics of the companies that unified their shares. The main prediction is that the goal of the unification is to take advantage of an increased market value. The market value is expected to increase after the unification for several reasons. First, the unification is a commitment to reduce the potential profit diversion. Second, the liquidity should go up with improved firm-level corporate governance (Brockman and Chung, 2003). Finally, the unification can improve investor recognition. Shares become available to a wider pool of investors, which according to Merton (1987) improves the share value.

The determinants of the unification are explored using a panel data set of 493 publicly traded firms in seven European countries (Denmark, Finland, Germany, Italy, Norway, Sweden, and Switzerland) where dual-class share structures are widely used. A total of 108 of the firms unified the dual-class shares in the period 1996-2002. I call these firms the *event group*. The other 385 firms remained dual-class within the same period. I call these firms the *control group*.

I find that the probability of unification is positively related with a planned new equity issue (seasoned equity offering, SEO). The data show that the event firms are more active in raising new equity. Moreover, the SEOs tend to occur in the same year as the unification. More than one third of the event firms issued equity in the same year when they unified the dual-class shares. I also find that the firms that unify their shares are more active in acquiring other companies. Higher acquisition activity suggests that the firm may want to use stock to pay for other companies' shares. The interpretation of these results is that low share value is not much of a concern – the minority shareholders pay a fair price taking into account the potential expropriation – unless the firm wants to do any transactions with stock. The results are consistent with anecdotal evidence that dual-class shares have gone out of *fashion*, and the companies that need to approach investors for new capital are the ones that cannot afford to be out of fashion.

The likelihood of the unification decreases substantially if the firm's controlling shareholder enjoys high private benefits of control. I show that all the variables that proxy for the level of private benefits have the expected signs and are significant. In particular, the event firms are characterized by: a) a smaller difference between the votes and cash flow rights held by the largest shareholder, b) a more frequent presence of a financial investor, and c) a higher number of firms cross-listed in the U.S. With low private benefits for the incumbent, the dual-class share system imposes a risk that a raider with high private benefits may appear and cheaply acquire control. I present some evidence that the unification can be a way to prevent such takeovers.

The prediction that the unification is intended to increase the market value of a firm can be tested alternatively from the ex post consequences of the unification. The results suggest that firms indeed reach their goal of increasing the market value, and the effect is rather persistent. The difference between the firm's market-to-book ratio and the respective average ratio of single class firms in the same industry jumps from around  $-0.5$  to  $0$  in the year of the unification. In other words, the ex-dual-class firm achieves the same value as an average single-class firm in the industry. Moreover, it keeps moving up, reaching  $0.4$  (significantly different from zero) one year after the unification, and then drops back to  $0$  in the two subsequent years. The value effect remains robust after controlling for sales growth and operating performance. The paper presents interesting evidence that a firm that unifies its dual-class shares experiences increased market value and sales growth after the unification compared to the firm *itself* before the unification. However, comparing firms with similar growth opportunities, the event firms experience higher market values and lower leverage, but no difference in sales growth compared to *other* dual-class firms. This result suggests that the dual-class share structure *per se* does not preclude firms from growth unless the firms depend on equity capital.

This paper relates to a broader literature on dual-class shares: the value of control measured by the voting premium (Bergström and Rydqvist, 1990, 1992; Nenova, 2003; etc.), the IPO underpricing in dual-class firms (Smart and Zutter, 2003), the dual-class share introductions, the switch from a single to dual-class share structure (e.g., Partch, 1987; Jarrel and Poulsen, 1988; Millon-Cornett and Vetsuypens, 1989), and the effect of certain policy changes on dual-class firms (Smith and Amoako-Adu, 1995; Robinson et al., 1996; Hoffmann-Burchardi, 1999; Bennedsen and Nielsen, 2002; and Berglöf and Burkart, 2003).

This paper adds to the scarce literature on the unification of dual-class shares. Three closely related studies that consider the unification of shares in a single country are Amoako-



Adu and Smith (2001) for Canada, Hauser and Lauterbach (2004) for Israel, and Dittmann and Ulbricht (2003) for Germany. This paper is the first cross-country study. The three papers use different methodology. Amoako-Adu and Smith derive their conclusions from the statements made by the companies. Hauser and Lauterbach measure the value of voting rights from compensation paid on high voting shares, as well as estimate the announcement effect. Dittmann and Ulbricht estimate the likelihood of the unification and the announcement effect. All the three studies share one common argument, namely that the dual-class companies unify their shares to pave the way for raising new equity capital. This paper differs from the previous studies in several respects. A larger sample used in this paper allows to find more precise matches for the event firms, and to detect the differences in firm characteristics. Most importantly, this study explores not only the determinants of the unification but also the ex post consequences of it. To my knowledge, this is the first paper that explores firm characteristics after the unification, and explicitly documents the effect on firm valuation beyond a short term announcement effect.

The paper proceeds as follows. Section 2 presents related literature, anecdotal evidence, and institutional background concerning the unification of shares. Section 3 introduces the hypotheses and empirical model. Data and summary statistics are provided in Section 4. Section 5 analyzes the ex ante determinants of the unification decision. Section 6 studies the ex post consequences of the unification, and Section 7 concludes.

## **2. Evidence on the unification of dual-class shares**

In this section, I present the empirical evidence on dual-class share structures and the anecdotal evidence on why companies do the unification. I also discuss recent institutional changes affecting the firms with dual-class share structure.

### *2.1. Related literature*

Before presenting the evidence on the unification of dual-class shares, it is instructive to discuss the opposite event, namely the introduction of dual-class shares. The major reasons for introducing the dual-class share structure are to prevent the dilution of control and to provide an effective defense against hostile takeover (e.g., Partch, 1987; and Smith and Amoako-Adu, 1991). Even though these reasons raise concerns about adverse wealth effects, it has been shown that market reaction to introduction of dual-class shares is not necessarily negative (Partch, 1987; and Millon-Cornett and Vetsuypens, 1989). Grossman and Hart (1988) show theoretically that deviations from one share-one vote may sometimes increase

market value if both incumbent and rival have substantial private benefits, and the party with high private benefits also has high security benefits. In this case, minority shareholders are better off if dividend rights and voting rights are separated because the winning party in a takeover has to pay also for the expected private benefits. Instead, when private benefits of either incumbent or rival are small, Grossman and Hart (1988) show that one share-one vote is generally optimal. Burkart et al. (1998) present a model in which the presence of takeover costs creates a trade-off between a higher likelihood of tender offers and more efficient tender offers. They show that the dual-class share system is optimal if the benefits of a higher likelihood of tender offers outweigh the costs of less efficient tender offers.

As opposed to the introduction of dual-class shares, the switch to one share-one vote is a relatively recent phenomenon. Three related empirical papers consider the abolition of dual-class share structure. Amoako-Adu and Smith (2001) find that the most common factors leading 56 firms on the Toronto Stock Exchange to eliminate dual-class equity were to meet the terms of a debt restructuring agreement, to facilitate the sale of a control block, and to increase institutional appeal for stock prior to a seasoned offering. These factors are derived from the statements made by the companies. Using data on 67 Israeli stock unifications, Hauser and Lauterbach (2004) estimate the value of voting rights from compensation paid on high voting shares for giving up some of the votes. All the Israeli unifications soared after the Tel-Aviv Stock Exchange introduced a new regulation (in 1989) which banned new issues of low voting shares. With this regulation, firms that wanted to raise new equity were effectively forced to unify the dual-class shares. Using data on 31 unifications of shares in Germany, Dittmann and Ulbricht (2003) find that a company is more likely to abolish the dual-class structure if the expected future growth is high, if the firm is large, or if the largest block of voting shares is small. They find that the reaction of non-voting shares to the announcement of share unification is significantly positive, the reaction of voting shares is weakly positive, and the reaction of the full market capitalization is significantly positive.

Ironically, one of the main reasons (found in all the three previous studies) why dual-class companies are unifying their share structure is to pave the way for new equity issues, which is the same as one of the reasons why companies introduced a multiple share structure to begin with (Partch, 1987; and Amoako-Adu and Smith, 2001). What has changed in the period from mid 80s to late 90s? One of the factors is the change in *fashion*. In 1984, the New York Stock Exchange (NYSE) undertook a revaluation of its policy (introduced in 1957) not to list companies with dual-class share structure. The discrimination of dual-class shares on

NYSE ceased to exist in 1986.<sup>3</sup> This step improved the marketability of dual-class shares. The increased reorganizations of corporate voting rights were also common in response to the takeover boom of the 1980s. In recent years, the fashion has arguably changed. In the aftermath of Enron and other corporate governance scandals, anything that can potentially increase the managerial entrenchment becomes suspicious. The popularity of dual-class shares, one of the most obvious and visible tools for increasing managerial (or large shareholder) entrenchment, has been adversely affected. As a result, the companies that need to approach the investors for new capital are the ones that cannot afford to be *out of fashion*.

## 2.2. Anecdotal evidence

An obvious question arises of what companies themselves say about the unification, why they do it. Table 1 presents a brief summary of statements made by several of the companies that unified their shares. The table shows that companies believe that the unification would increase share value and liquidity, augment investor recognition, allow paying for acquisitions using stock, supporting growth, enhancing financial flexibility, and defending takeover. The last argument (made by *Nokia*), to defend takeover, again is the same as one of the main arguments why dual-class shares were introduced. *Nokia* (before the unification) had developed into a company with dispersed ownership structure and high foreign investor presence, with presumably low private benefits for incumbents. In this situation, allowing an outside rival with high private benefits to acquire control cheaply can have negative wealth effects (Grossman and Hart, 1988).

The arguments for increasing investor recognition can be (subjectively) divided into “rational” and “not-so-rational” ones. The rational arguments, for example, (16) and (17), state that the dual-class shares are not available to certain investor groups (in particular, investment funds) due to legal restrictions. The arguments summarized under “not-so-rational” ones suggest that the company believes that the investor base is lower because the dual-class firms are not familiar to certain investor groups (mostly, foreign investors), which “do not understand this division of shares”. Statement (20) is very close to the idea that investors tend to invest in certain categories of shares (Barberis and Shleifer, 2003). In this case, the company believes that there is a disadvantage of being in the “Not Luxus category with two share classes”.

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<sup>3</sup> See “Big Board Agrees to Let Companies List More Than One Class of Stock”, *The Wall Street Journal*, July 7, 1986).

**Table 1. What companies say about the unification of shares?**

WHY UNIFY?	#	Statements by companies and analysts (about the unification)
Increase LIQUIDITY	(1)	- ... enhance the liquidity of shares (ABB).
	(2)	- ... resolve the problem concerning the liquidity of the shares (Amer Group).
	(3)	- ... the amalgamation of shares has increased the level of trading in the company's shares (Rieber & Son).
	(4)	- ... improve demand in international capital markets. ...we expect increased share liquidity (Sudzucker).
	(5)	- ... will further increase the liquidity of Company's shares (MLP).
	(6)	- ... improve liquidity (HERLITZ).
	(7)	- ... improved stock liquidity (Recordati).
Increase SHARE VALUE	(8)	- ... positive impact on shareholder value... the share value is expected to increase (HERLITZ).
	(9)	- ... the company will raise its capital over the next three years. "... we would prefer our share price to look better" [this was said 3 month before the unification] (FAG).
	(10)	- ... improved market capitalization (Recordati).
	(11)	- ... placement of Company's shares [right after the unification] was considered to be a success given the recent weakness of international markets and considering that during May some 70 initial public offerings were cancelled (Finmeccanica).
INVESTOR RECOGNITION ("rational")	(12)	- ...make it easier for outside investors to invest in the company. ...a strong European investor would strengthen the company's position (DSV).
	(13)	- ...attract a wider spread of domestic and foreign shareholders (PUMA).
	(14)	- ... will satisfy Italian and foreign institutional investors (COFIDE).
	(15)	- ... increase interest in Company's shares in the US (Amer Group).
	(16)	- ... making shares more attractive particularly to institutional investors (MLP).
	(17)	- ... the group will boost the interest of foreign investors in Company's shares to internationalize the shareholder structure. ... also enables investment funds to then invest in Company's shares (Gerry Weber).
INVESTOR RECOGNITION ("not-so-rational")	(18)	- ...making the stock more attractive to international investors. Yet, while SAP's three founders, including the co- chief executive and supervisory board chairman, dilute their voting rights, effective control stays in their hands. (SAP).
	(19)	- In international capital markets one share-one vote system dominates. The non-voting preference shares are widely unknown abroad, and are loosing importance also in Germany (Sudzucker).
	(20)	- The stock market – particularly, the foreign investors – do not understand this division of shares, and better buy clear and simple value. It is "downright grotesque" that Herlitz remains in this "Not Luxus" category with two share classes, while renowned companies (Fielmann, Metro, and Lufthansa) are abandoning preference shares. When one reads the stock quotes in the newspaper, Herlitz is soon to be the only company with two share classes. (HERLITZ).
Pay for ACQUISITIONS using stock	(21)	- It is very difficult to pay for a US acquisition with shares if your management owns a majority of the voting rights. (Merrill Lynch analyst)
	(22)	- ...could increase its leeway to pay for acquisitions with shares (SAP).
	(23)	- ... this will allow to handle acquisitions and strategic alliances by using shares in addition to debt financing (ABB).
	(24)	- German capital market law restricts preference shares that can be issued in proportion to ordinary shares, making it difficult for a company to increase its capital for an acquisition.
Support GROWTH	(25)	- ...establishing basis for new, profitable growth (KVAERNER).
	(26)	- ... will have increased freedom in procuring additional capital. Company is currently in a dynamic emergence phase (ASCOM).
	(27)	- ... CEO expects the dynamic growth of the Company (Disetronic Holding).
	(28)	- ... create good basis for the future international growth of the Company (MLP).
	(29)	- ... to support future growth (Recordati).
FINANCIAL FLEXIBILITY	(30)	- ... enhance financial flexibility (ABB).
	(31)	- ... to be able to act flexibly (ASCOM).
	(32)	- ... augment considerably Company's financial flexibility (Olivetti).
DEFEND TAKE-OVER	(33)	- ... the move has been seen as a tactical maneuver meant to defend the Company against foreign attempts to take over. With the power shares gone, a 10 per cent vote in Nokia would now cost SEK 73bn (NOKIA).

Sources: Lexis-Nexis, company home-pages.

Statement (20) points towards the competition for capital story. When there is an increasing number of single-class shares around, a dual-class firm can find it more difficult to attract investors. This statement corroborates the view that the companies that are looking for new equity capital have to follow the market trends.

### 2.3. Institutional changes

Even though in neither of the sample countries the unification of shares has been compulsory, there have been certain changes in corporate governance legislation in the sample period (1996-2002). Panel B of Table 2 shows that the number of newly listed dual-class shares has decreased substantially in the recent years, which indirectly puts pressure on existing dual-class companies. What can explain this downturn?

According to Grossman and Hart (1988), dual-class shares may be optimal if both incumbent and raider have high private benefits of control; otherwise, one share-one vote is optimal. In recent years, there have been numerous legal reforms aimed at improving investor protection (see Appendix 1). The legal reforms have evidently reshaped the type of potential buyers in takeovers, and hence reduced the optimality of dual-class share system.

Shares with low voting rights in many countries (e.g., Germany and Italy) carry preferential dividend rights. With decreasing bank loan interest rates, a minimum dividend of e.g. 5% of the par value of low voting shares may have become too expensive to maintain. This imposes additional cost on the dual-class share structure. In many countries, particularly in Europe, the regulations impose that a rights offering method<sup>4</sup> is the default method of a seasoned equity offering (other methods may require almost unanimous approval from all the share classes). Continuing to pay high preferential dividend on newly issued low voting shares or giving the holders of low voting shares a right to buy high voting shares might become too costly.

Several countries have restricted the inclusion of non-voting shares in the major stock indices. For example, DAX and M-DAX in Germany and MIB30 and MIDEX in Italy, since recent, allow only voting shares to be included in the index. For liquidity reasons, this puts dual-class companies at a disadvantage. Most of the “new markets” introduced in the recent years, such as *Neuer Markt* in Germany and *Nuovo Mercato* in Italy, forbid the listing of non-voting shares. This restriction has clearly reduced the popularity of dual-class shares among “new economy” companies.

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<sup>4</sup> In a rights offering, current shareholders are given short-term options, “rights”, to purchase new shares on a pro rata basis, at a certain exercise price, until a certain expiration date.

**Table 2. Dual-class firms in percent of total listed firms and domestic newly listed companies**

Panel A shows the number of total firms (excluding banks and credit institutions, SIC2 60 and 61) and firms with dual-class shares available in *Moody's/ Mergent International Companies* 1996 (for end of 1995 data) and 2002 (for end of 2001 data) Manuals. Panel B shows the fraction of dual-class firms as percent of all domestic newly listed companies in each year from 1996 to 2002. The number of new dual-class listings is given in parentheses. The data for all countries but Germany come from the stock exchange web-sites and *Datastream*. The data for Germany was kindly provided by Olaf Ehrhardt.

Panel A: Fraction of dual-class firms in total listed firms, 1995 vs. 2001

	Total firms, end 1995	Dual firms, end 1995	Fraction of dual firms, end 1995	Total firms, end 2001	Dual firms, end 2001	Fraction of dual firms, end 2001	Percentage change in fraction (2001 vs. 1995)
Denmark	124	74	59.7%	123	45	36.6%	-39%
Finland	66	30	45.5%	92	22	23.9%	-47%
Germany	345	84	24.3%	740	85	11.5%	-53%
Italy	156	64	41.0%	81	28	34.6%	-16%
Norway	71	17	23.9%	121	9	7.4%	-69%
Sweden	142	87	61.3%	203	94	46.3%	-24%
Switzerland	197	92	46.7%	235	62	26.4%	-44%
Total	1101	452	41.1%	1595	345	21.6%	-47%

Panel B: Fraction (number) of dual-class firms in domestic newly listed companies, 1996-2002

	1996	1997	1998	1999	2000	2001	2002
Denmark	33% (2)	20% (1)	23% (3)	17% (1)	14% (1)	0% (0)	0% (0)
Finland	0% (0)	33% (4)	25% (3)	11% (3)	0% (0)	11% (1)	0% (0)
Germany	5% (1)	6% (2)	0% (0)	1% (1)	0% (0)	0% (0)	0% (0)
Italy	0% (0)	15% (2)	5% (1)	6% (2)	0% (0)	0% (0)	0% (0)
Norway	10% (2)	4% (2)	4% (1)	0% (0)	0% (0)	8% (1)	0% (0)
Sweden	59% (10)	42% (21)	50% (16)	45% (21)	28% (16)	32% (6)	29% (2)
Switzerland	50% (3)	8% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
Average	22% (18)	18% (33)	15% (24)	11% (28)	6% (17)	7% (8)	4% (2)

## 2.4. Summary

The costs of dual-class share structure have increased in the recent years due to investor focus on better corporate governance practices. The previous empirical results and anecdotal evidence suggests that the unification can increase the market value of a firm. The increasing costs of dual-class share structure put a considerable burden on companies that need to raise new equity capital and hence care about their share price, liquidity, and investor recognition.

## 3. Hypotheses and empirical model

In this section, I present a more formal discussion on what are the advantages and disadvantages of the unification from a controlling shareholder's perspective. It is implicitly assumed that the controlling shareholder or a manager acting in the interests of this

shareholder is the main decision maker. To approve the unification, it has to be individually rational for the main decision maker.

### 3.1. Hypotheses

Theoretically, the total market value of a company should increase after the unification because the cost of capital decreases due to higher *liquidity*, wider *investor base*, and lower *risk of expropriation*. Previous research has shown that liquidity is significantly positively affected by investor protection (Brockman and Chung, 2003), hence the liquidity should increase after the unification. Higher liquidity should reduce the firm's cost of capital and increase its market value (e.g., Amihud and Mendelson, 1986). There is evidence that companies may have a narrower investor base when outside investors feel less protected (Giannetti and Simonov, 2004). There are also legal restrictions precluding certain institutional investors of holding dual-class shares. The stocks of these companies can be undervalued because of the lack of risk sharing (Merton, 1987). It has been shown both theoretically and empirically that the risk of expropriation (entrenchment) is higher in firms that separate ownership from control (Shleifer and Wolfenzon, 2002; and Claessens et al., 2002), in particular so if the private benefits of an outside rival in a takeover are substantially lower than the private benefits of an incumbent (Grossman and Hart, 1988).<sup>5</sup> As a result, the market value of dual-class firms can be lower than that of similar single-class firms.<sup>6</sup>

Although the market value of the firm is expected to increase after the unification, it does not mean that all the parties gain equally and would accept the unification. The market value represents only the security benefits, while we know that the controlling shareholder can receive also private benefits of control, which can decrease substantially after the unification. Moreover, the wealth effects on high and low voting shares can be different. The two classes of shares can differ with respect to dividends, liquidity, and voting rights. In some firms (e.g., as set by law in Germany and Italy) low voting shares receive preferential dividends. Typically, high voting shares are less liquid than low voting shares (see e.g. Nenova (2003)), because large part of these shares can be hold in a block and not traded or these shares are not listed at all. The valuations of high and low voting shares differ if there is some value attached to the voting rights. The value of voting rights may represent the expected premium

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<sup>5</sup> One should note that dual-class shares are just one of the ways to create separation between ownership and control. There are also pyramids and cross-holdings (Bebchuk et al., 2000). However, dual-class shares are the most common method in Europe. From Faccio and Lang (2002) data set we can estimate that on average 32% of firms in the seven countries used in this study have dual-class shares, compared with 20% of firms using pyramids, and 2% cross-holdings.

<sup>6</sup> This difference in market values is found also in my sample, see Section 4.

that an outside raider may offer to acquire control over firm's decisions (Lease, McConnell, and Mikkelsen, 1983; Stulz, 1988; and DeAngelo and DeAngelo, 1985). When there is a takeover attempt, a higher price may be paid for a high voting share because it carries more votes. As a result, after the unification, low voting shares gain voting rights and loose preferential dividends (if there are any), while high voting shares can gain on dividends (as their dividends are not any more subordinated to low voting shares) and liquidity, but loose on voting rights. Previous evidence shows that the share price on low voting shares increases more than on high voting shares when a company announces the unification (Dittmann and Ulbricht, 2003). Further on, I assume that the price of low voting shares (for simplicity, they are non-voting shares) increases, while the price of voting shares decreases after the unification. This is a more restrictive case which makes it harder for the controlling shareholder to accept the unification.

For simplicity, I consider unifications without any compensation for high voting shareholders, i.e., where all the shares are converted into shares with one vote per share. As a result, after the unification high voting shareholders have the same fraction of cash flow rights, but lower fraction of votes than before the unification. In practice, only 9 firms in my sample (predominantly in Italy and Norway) compensate the loss of voting rights with additional stocks or cash.<sup>7</sup> The compensation would arguably make the unification more attractive to the controlling shareholders, but it can face strong opposition from the low voting shareholders. Moreover, the decision about the compensation is of a second-order after the proposal to unify the shares has been made.<sup>8</sup>

Consider a simple example. Assume the share capital of a firm consists of 50 voting shares (one vote per share) and 50 non-voting shares, with controlling shareholder holding 20 voting shares and 20 non-voting shares. This means that the controlling shareholder has 40% of votes (20/50) and 40% of cash flow rights ((20+20)/(50+50)). Also assume that the price of one voting share before the unification ( $P^v$ ) is 1.10, the price of one non-voting share ( $P^n$ ) is 0.90, and the price of a unified (single) share after the unification ( $U$ ) is 1.05. Given these assumptions, the unification would increase the controlling shareholder's security benefits by  $(20+20)*1.05 - (20*1.10 + 20*0.90) = 2$ . If the decrease in private benefits is lower than 2, the controlling shareholder is better off by unifying the shares. Now assume that the

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<sup>7</sup> Excluding these firms from my sample does not change the results.

<sup>8</sup> There are exceptions, however. In Swedish company Ericsson, the talks on the issue of the compensation for high voting shareholders have taken nearly two years, and have seriously hindered the acceptance of the reform that would cut the difference in voting rights on high and low voting shares from 1,000-to-one to 10-to-one (*Financial Times*, February 19, 2004).



controlling shareholder holds the same 20 voting shares, but none of the non-voting shares, in other words, 40% of votes and 20% of cash flow rights. The unification is clearly value decreasing for the controlling shareholder as the security benefits decrease by 1. Thus, we obtain

*Hypothesis 1: The likelihood of unification should increase if the controlling shareholder has a smaller difference between control and cash flow rights.*

The likelihood of unification should also increase if the expected decrease in private benefits after the unification is low. Since measuring the expected decrease in private benefits is difficult, we can assume that the loss of private benefits after the unification should be lower if the controlling shareholder had low private benefits to start with. Consistent with the anecdotal evidence in the previous section, low private benefits of the incumbent also suggest that the unification can be used as a tool to defend a takeover by a rider with high private benefits. If the benefits of more efficient tender offers outweigh the costs of lower likelihood of tender offers, the unification is optimal (Burkart et al., 1998). Overall, these arguments suggest

*Hypothesis 2: The likelihood of unification should increase if the private benefits accruing to the controlling shareholder are low.*

Measuring private benefits of control is not trivial. In addition to the difference between control and cash flow rights, one of the proxies used in the previous studies is the type of the controlling shareholder. Financial investors can have lower incentives for private benefit extraction (see e.g., McConnell and Servaes, 1990), and hence increase the likelihood of unification. Reese and Weisbach (2002) and Doidge (2004) argue that cross-listing in the U.S. is a bonding mechanism that improves the protection afforded to minority investors and decreases the private benefits of control.<sup>9</sup> Following this reasoning, we should expect that the dual-class firms which are cross-listed in the U.S., other things equal, are more likely to unify their shares.

The importance of security benefits becomes important if the controlling shareholder plans to sell the shares, and if the new shareholder has lower private benefits of control, in which case the full value of control benefits can not be retrieved. If this is the case, we should expect to see a change of controlling shareholder after the unification.

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<sup>9</sup> There is, however, a countervailing argument by Siegel (2004), who suggests that cross-listing in the U.S. is a reputational bonding rather than a legal bonding. When it comes to implementation, American governance rules affecting U.S. listed foreign firms are much stricter in formal writing than in practice.

*Hypothesis 3: The controlling shareholder's cash-flow stake should decrease substantially after the unification.*

Following the discussion in the previous section, we argued that the market sentiment towards dual-class shares is particularly important for firms that need to raise new equity capital. Let us consider this argument from the controlling shareholder's perspective. Keeping all the other assumptions intact, assume that the controlling shareholder has 30 voting shares and 10 non-voting shares (60% of votes, and 40% of equity). Without a need to issue new equity, the unification would not be accepted because the controlling shareholder's security benefits are 42 under both current and proposed share structure. Considering there is even a very small decrease in private benefits, the unification is value destroying. Now assume there is a positive net present value (NPV) project that needs to be financed with equity. The project requires investment of 20, which would increase the security benefits by 30. This can be regarded as a new investment project within a company or an acquisition of another company.

If the firm issues new equity through a rights offering under the current share structure, each shareholder receives the rights to acquire new shares proportional to his existing stake and existing share price. The security value to the controlling shareholder is equal to the current security value (42) plus the net benefit from new investment project (3.6), which gives the total value of 45.6. The net benefit from new investment is less than 4 ( $=0.4 \cdot \text{NPV}$ ) because the benefits of the new project are shared according to the equity participation while the costs are shared according to the current market price of the shares. Since the controlling shareholder has more voting than non-voting shares, his share of project costs is higher than on average. Alternatively, if the share unification is carried out before the new equity issue, the security value to the controlling shareholder would be 42 ( $=40 \cdot 1.05$ ) plus 4 ( $=0.4 \cdot 10$ ), which is 46. If the change in private benefits after the unification is lower than 0.4, the controlling shareholder is better off by unifying the dual-class shares before issuing new shares. Thus I propose

*Hypothesis 4: The likelihood of unification should increase if the firm plans to issue new equity.*

*Hypothesis 5: The likelihood of unification should increase if the firm plans to make acquisitions of other companies.*

Hypothesis 4 is related to Ehrhardt and Nowak (2002) who find that the firms that issued dual-class shares at the IPO stage are less likely to return to capital markets for seasoned equity offerings. In addition to positive market reaction due to reasons mentioned before, the

firms with planned new equity issues can gain from positive publicity around the unification event. The switch to one share-one vote is boldly regarded as a step towards improved corporate governance, and typically gets significant media attention.<sup>10</sup>

Firms with better growth opportunities, in general, should have higher incentives to unify the shares. Even if a firm is not issuing new equity right after the unification, it may need to raise substantial amount of capital for investments and expansion in the future. Simplifying the share structure can make the process easier. Moreover, firms with higher growth opportunities (combined with lower financial flexibility) are more likely to become takeover targets. Hence,

*Hypothesis 6: The likelihood of unification should be higher in firms with high growth opportunities.*

*Hypothesis 7: We should observe increased investment activity and sales growth after the unification.*

### 3.2. Empirical design

Here, I present the main model specifications for testing the predictions about the probability of unification and the likely consequences of it. Alternative model specifications and robustness checks are left for Section 5 and 6.

To test the hypotheses concerning the likelihood of unification (ex ante effects), I estimate a pooled probit model controlling for year and country effects:

$$Pr(Unify_{it}=1) = F(\alpha Z_{it}), \quad (1)$$

where  $Unify_{it}$  is a variable that equals one if the company  $i$  switched to a single-class share system in year  $t$  and zero if it remained dual-class in this year (a firm is dropped from the sample after it unifies the shares),  $F(.)$  is the cumulative distribution function of a standard normal variable, and  $Z_{it}$  is a vector of explanatory variables.

The consequences of unification (ex post effects) are tested using fixed-effects regressions in which the effect of unification is captured by dummy variables for the year of the unification and the three subsequent years (as in Pagano et al. (1998)):

$$y_{it} = \alpha + UNI_t + UNI_{t-1} + UNI_{t-2} + UNI_{t-3} + u_i + d_t + \varepsilon_{it}, \quad (2)$$

where  $y_{it}$  is the variable of interest (e.g., SALES GROWTH) in firm  $i$  in year  $t$ ,  $u_i$  and  $d_t$  are respectively a firm-specific and calendar year-specific effect,  $UNI_{t,j}$  are dummy variables

<sup>10</sup> This argument is closely related to Demers and Lewellen (2003) who find that there are marketing benefits associated with IPO underpricing.

equal to one if year  $t-j$  was the year of the unification. In this model, a firm before the unification is used as a control for itself after the unification.

## 4. Data

### 4.1. Sample

The main sample for empirical investigation consists of 493 companies in seven European countries (Denmark, Finland, Germany, Italy, Norway, Sweden, and Switzerland). The sample covers all European countries in which dual-class firms are frequent (see Nenova, 2003). The seven European countries use different types of dual-class shares (see Appendix 1), but the basic principle is the same: one share class gives higher voting rights than the other thus allowing separation between cash flow ownership and control. In all the sample countries, both share classes are treated equally for tax purposes, i.e., there is no tax advantage on low voting shares as, for example, is the case of bank issued trust preferred stock in the U.S., and the low voting shares are not required to be convertible into high voting shares as it is the case in the Netherlands.

A sample firm complies with the following criteria: The firm is present in *Moody's/Mergent International Company Database* (1996-2002 Manuals), is not a commercial bank or credit institution (SIC codes 60 and 61), had a dual-class share structure at the end of 1995, and is still listed on the stock exchange at the end of 2002. The sample construction is presented in Panel A of Table 3. Out of 601 firm that satisfied all the above criteria except the last one, for various reasons we drop 108 firms. Ten percent of firms were taken over or merged with another firm. The characteristics of these firms will be discussed in Section 5.3. Four percent of firms were delisted because the ownership became too concentrated (no or very little free float). Other four percent of firms were dropped due to data unavailability. It leaves us 493 firms (82%). Out of this sample, 108 firms (22%) now have single share class (*event* group), and 385 firms (78%) still have dual-class shares (*control* group). If we compare the number of unifications with the total initial dual-class firm sample (including the firms that dropped out during 1996-2002), the event group represents 18%. These numbers show that the unification is an important event among the dual-class shares and the market in whole.

**Table 3. Sample characteristics**

Panel A describes the procedure of constructing the main sample of 493 companies used in this paper. In Panel B, sample construction is subdivided by country. Panel C shows the distribution of number of companies that switched from dual-class to single-class shares in the period from 1996 to 2002, by years and countries.

**Panel A: Sample construction**

<b>601</b>	<b>100%</b>	Dual-class firms (excluding banks and credit institutions, SIC2 60 and 61) available in Moody's/ Mergent manuals (1996-2002) which were listed on the stock exchange at the end of 1995.
- 63	10%	Merged or taken over during 1996-2002.
- 22	4%	Delisted by stock exchange order or voluntarily (because of too little free float) during 1996-2002.
- 7	1%	Delisted, not clear why.
- 8	1%	Not traceable.
- 8	1%	Data not available in <i>Worldscope</i> .
<b>493</b>	<b>82%</b>	Main sample. The firms that were still listed on the stock exchange at the end of 2002.
out of which:		
108	18%	Firms that unified their shares in 1996-2002 (event group).
385	64%	Firms that stayed dual-class throughout 1996-2002 (control group).

**Panel B: Sample construction by country**

	Event	Control	Merged or T/O	Delisted	Other	Total
Denmark	10	55	14	6	3	88
Finland	6	30	4	1	1	42
Germany	41	88	9	2	1	141
Italy	12	45	3	8	1	69
Norway	6	9	2	3	-	20
Sweden	7	99	25	3	2	136
Switzerland	26	59	6	6	8	105
Total	108	385	63	29	16	601

**Panel C: Unifications by country and year**

	1996	1997	1998	1999	2000	2001	2002	Total
Denmark	-	1	1	1	1	2	4	10
Finland	-	1	1	3	-	1	-	6
Germany	6	1	7	7	9	8	3	41
Italy	-	1	1	2	3	2	3	12
Norway	-	-	-	1	1	4	-	6
Sweden	-	-	1	-	3	2	1	7
Switzerland	2	3	6	3	6	4	2	26
Total	8	7	17	17	23	23	13	108

Panel B of Table 3 tracks the initial sample of dual-class firms by country. The lowest unification activity has been in Sweden, where only five percent of the initial sample (7 out of 136 firms) switched to one share-one vote. In Denmark, the respective number is 11% (10 out of 88 firms). The highest unification activity has been in Norway, Germany, and Switzerland (30%, 29%, and 25%, respectively). It is interesting to note that Sweden and Denmark have the highest fraction of mergers and takeovers among dual-class firms. In

Sweden, 18% of the initial sample of dual-class firms (25 out of 136 firms) merged or were taken over during 1996-2002. Panel C of Table 3 shows that the number of unifications has been increasing over sample years: from 8 events per year in 1996 to 23 in 2000 and 2001. The highest number of unifications is observed in Germany (41 firm) and Switzerland (26 firms).

Panel A of Table 2 shows that the fraction of dual-class firms among all firms has decreased since 1995, but it is still substantial at the end of 2001. The largest fraction of dual-class firms is in Sweden (46%), and the lowest in Norway (7%) and Germany (11%). We should note that there are large and important market players among the dual-class firms. The event group consists of mainly large and medium size companies, including such famous names as, for example, ABB, Lufthansa, and Nokia. The control group includes, for example, BMW, Carlsberg, Ericsson, and Fiat.

Panel B of Table 2 presents evidence that the fraction of dual-class firms among newly listed domestic companies has been steadily decreasing from 22% in 1996 to only 4% in 2002. Sweden appears as a striking outlier; 71% of all new dual-class listings in seven sample countries during 1996-2002 happened in Sweden.

#### 4.2. Summary statistics

Table 4 contains summary statistics for 3451 firm-years: 493 companies and seven years (1996-2002). The number of observations varies due to data availability constraints. The first group until the dividing line presents variables with annual data, while the second group shows data that are assumed constant over sample years. All the variable definitions are provided in Appendix 2.

The main data sources used in this study are as follows. Financial data is from *Worldscope*. Information on different share class characteristics (voting power, dividend rights, listing, etc.) comes from *Moody's/ Mergent International Company Database*, *Datastream*, company annual reports, and *Lexis-Nexis*. Ownership data are from Faccio and Lang (2002), Sunding and Sundqvist (1995-2001), and company annual reports. Data source for acquisitions is *Securities Data Corporation Platinum* database.

Panel A of Table 4 shows that the median firm in the whole sample has a market-to-book (MTB) ratio of 1.53, an industry adjusted market-to-book ratio of -0.98, a size (log of sales) of 5.54, capital expenditures of 19% of net property, plant, and equipment, and annual sales growth of 6%. In terms of ownership structure, the median firm in the sample has the largest

**Table 4. Summary statistics**

In Panel A, the summary statistics refer to the firm-years of the whole sample of 493 companies, in Panel B – to the firm-years of companies that unified their shares in 1996-2002, and in Panel C – to the firm-years of companies that stayed dual-class throughout 1996-2002. *T*-Statistics and (two-sided) significance levels of testing the equality of means between the event group and the control group are presented. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels. Appendix 2 provides definitions for the variables.

Variable	Mean	Median	Std. Dev.	Min	Max	Obs.	<i>t</i> -statistic	Sig.
Panel A: The Whole Sample								
Industry MTB	2.93	2.80	1.33	0.74	13.86	3438		
MTB	2.43	1.53	2.91	0.27	28.26	3020		
Industry adjusted MTB	-0.57	-0.98	2.76	-12.49	25.10	3007		
Size	5.50	5.54	0.95	0.48	7.96	3145		
ROA	0.05	0.05	0.10	-0.61	0.50	3070		
ROE	0.09	0.10	0.28	-1.93	1.87	3039		
Leverage	0.25	0.24	0.18	0.00	0.82	3146		
CAPEX	0.33	0.19	0.54	0.00	4.39	2964		
Cash flow/ Assets	0.07	0.07	0.09	-0.59	0.39	2686		
Cash balance/ Assets	0.12	0.08	0.13	0.00	0.84	3149		
Cash dividends/ Assets	0.02	0.01	0.02	0.00	0.20	3078		
Sales growth	0.10	0.06	0.28	-0.50	1.32	3065		
Voting premium	0.16	0.05	0.33	-0.88	1.60	1186		
Equity issue dummy	0.23	0.00	0.42	0.00	1.00	2554		
Equity issue (adjusted) dummy	0.17	0.00	0.37	0.00	1.00	3451		
Equity issue proceeds/ Equity	0.06	0.00	0.25	0.00	1.84	2535		
Acquisitions/ Size	0.11	0.00	0.21	0.00	1.10	3145		
US cross-listing dummy	0.11	0.00	0.31	0.00	1.00	493		
Both shares listed dummy	0.60	1.00	0.49	0.00	1.00	467		
Dividend dummy	0.42	0.00	0.48	0.00	1.00	354		
Control	0.45	0.44	0.24	0.00	1.00	399		
Ownership	0.29	0.25	0.22	0.00	1.00	385		
Control minus Ownership	0.15	0.12	0.14	-0.40	0.67	384		
Control exceeds Ownership, high	0.43	0.00	0.50	0.00	1.00	384		
Family owner dummy	0.44	0.00	0.50	0.00	1.00	400		
Financial investor dummy	0.11	0.00	0.31	0.00	1.00	400		
Panel B: Event group								
Industry MTB	3.03	2.83	1.35	0.74	9.76	744	2.400	**
MTB	2.97	1.87	3.43	0.33	28.26	680	5.524	***
Industry adjusted MTB	-0.25	-0.82	2.99	-8.31	23.82	668	3.408	***
Size	5.63	5.70	0.92	2.29	7.50	700	3.899	***
ROA	0.05	0.05	0.10	-0.61	0.50	688	1.159	
ROE	0.09	0.12	0.33	-1.93	1.87	680	0.403	
Leverage	0.25	0.24	0.18	0.00	0.82	701	0.107	
CAPEX	0.34	0.20	0.54	0.00	4.39	668	0.567	
Cash flow/ Assets	0.07	0.07	0.09	-0.38	0.39	615	1.669	*
Cash balance/ Assets	0.13	0.08	0.13	0.00	0.84	701	0.208	
Cash dividends/ Assets	0.02	0.01	0.02	0.00	0.17	685	0.402	
Sales growth	0.12	0.07	0.30	-0.50	1.32	687	1.321	
Voting premium	0.14	0.07	0.29	-0.63	1.49	207	-0.821	
Equity issue dummy	0.29	0.00	0.45	0.00	1.00	593	4.447	***
Equity issue (adjusted) dummy	0.23	0.00	0.42	0.00	1.00	756	5.214	***
Equity issue proceeds/ Equity	0.10	0.00	0.33	0.00	1.84	588	3.986	***

Table 4. Continued

Variable	Mean	Median	Std. Dev.	Min	Max	Obs.	t-statistic	Sig.
Panel B: Event group								
Acquisitions/ Size	0.14	0.00	0.24	0.00	1.10	700	4.181	***
US cross-listing dummy	0.18	0.00	0.38	0.00	1.00	108	2.712	***
Both shares listed dummy	0.65	1.00	0.48	0.00	1.00	106	1.227	
Dividend dummy	0.52	0.50	0.47	0.00	1.00	94	2.334	**
Control	0.40	0.36	0.23	0.06	0.99	97	-2.217	**
Ownership	0.26	0.22	0.19	0.00	0.93	83	-1.526	
Control minus Ownership	0.12	0.09	0.12	0.00	0.48	82	-2.363	**
Control exceeds Ownership, high	0.29	0.00	0.46	0.00	1.00	82	-2.848	***
Family owner dummy	0.39	0.00	0.49	0.00	1.00	98	-1.255	
Financial investor dummy	0.19	0.00	0.40	0.00	1.00	98	3.341	***
Panel C: Control group								
Industry MTB	2.90	2.79	1.33	0.75	13.86	2694		
MTB	2.27	1.44	2.73	0.27	28.26	2340		
Industry adjusted MTB	-0.67	-1.04	2.69	-12.49	25.10	2339		
Size	5.47	5.49	0.96	0.48	7.96	2445		
ROA	0.05	0.05	0.10	-0.61	0.50	2382		
ROE	0.09	0.10	0.27	-1.93	1.87	2359		
Leverage	0.25	0.24	0.18	0.00	0.82	2445		
CAPEX	0.33	0.19	0.54	0.00	4.39	2296		
Cash flow/ Assets	0.06	0.07	0.09	-0.59	0.39	2071		
Cash balance/ Assets	0.12	0.08	0.13	0.00	0.84	2448		
Cash dividends/ Assets	0.02	0.01	0.02	0.00	0.20	2393		
Sales growth	0.10	0.06	0.27	-0.50	1.32	2378		
Voting premium	0.16	0.04	0.34	-0.88	1.60	979		
Equity issue dummy	0.20	0.00	0.40	0.00	1.00	1961		
Equity issue (adjusted) dummy	0.15	0.00	0.36	0.00	1.00	2695		
Equity issue proceeds/ Equity	0.05	0.00	0.22	0.00	1.84	1947		
Acquisitions/ Size	0.10	0.00	0.20	0.00	1.10	2445		
US cross-listing dummy	0.09	0.00	0.28	0.00	1.00	385		
Both shares listed dummy	0.58	1.00	0.49	0.00	1.00	361		
Dividend dummy	0.38	0.00	0.48	0.00	1.00	260		
Control	0.46	0.48	0.24	0.00	1.00	302		
Ownership	0.30	0.26	0.23	0.00	1.00	302		
Control minus Ownership	0.16	0.15	0.14	-0.40	0.67	302		
Control exceeds Ownership, high	0.47	0.00	0.50	0.00	1.00	302		
Family owner dummy	0.46	0.00	0.50	0.00	1.00	302		
Financial investor dummy	0.08	0.00	0.27	0.00	1.00	302		

shareholder with 44% of votes (control) and 25% of cash flow rights (ownership). Forty percent of all firms have only one of the share classes listed on the stock exchange, 11% of firms have their shares cross-listed in the U.S., 41% of firms have a family as the largest shareholder, and 11% of firms have a financial institution as the largest shareholder.

In Panel B and Panel C of Table 4, the summary statistics are presented separately for the event group, and the control group. In Panel B, the statistical significance of the univariate analysis between the event group and the control group variables is shown. The firms that



switched to a single share class compared to other dual-class firms are characterized by higher market-to-book ratios, larger size, higher number and size of new equity issues, and higher number of acquisitions.

## **5. Ex ante determinants of unification**

In this section, the firm characteristics which increase the likelihood of unification are estimated. First, the results using the main model specification (pooled probit) are presented. Second, alternative methods are used as a robustness check. Finally, I present the evidence from takeovers of dual-class firms. All variables are defined in Appendix 2.

### *5.1. Main model*

Table 5 reports the maximum likelihood estimates of the probit model, as well as the standard errors, using a fully robust variance-matrix estimator that allows for within-cluster (firm) correlation and heteroskedasticity. The robust estimator assumes for no particular kind of within-cluster correlation nor a particular form of heteroskedasticity. This specification relaxes the independence assumption required by the probit estimator to being just the independence between the clusters (firms). This specification yields very similar results to random-effects regression (not reported), which controls for possible unobserved firm-specific effects.

The variables that measure the equity issuance and acquisitions activity are contemporaneous because they proxy for the planned new equity issues and acquisitions. The reverse causality (from unification to new equity issues and acquisitions) is ruled out, because typically these decisions take time. It is not plausible to assume that the firm made unification, observed a share price increase, and immediately (within a few months) decided to issue new equity and to make acquisitions. It is quite common that the decisions about new equity issue and unification are taken at the same annual (or extraordinary) meeting. The variables measuring firm size and growth opportunities are lagged one year in order to measure the situation before the unification. The variables that proxy for the private benefits of control are fixed; they measure the situation before the unification in the event firms and the average situation in the control firms in the period 1996-2002.<sup>11</sup>

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<sup>11</sup> This is due to lack of data. Collecting past ownership data for 493 firms from 7 countries over 7 years is not very feasible.

**Table 5. Ex ante determinants of the unification (pooled probit)**

The effect of the variables listed on the probability to unify dual-class shares is estimated by a pooled probit model:

$$Prob(Unify_{it}=1) = F(X_{it}\alpha),$$

where  $Unify_{it}$  is a variable that equals 1 if company  $i$  switched to a single-class share system in year  $t$  and 0 if it remained dual-class in this year (a firm is dropped from the sample after it unifies the shares),  $F(\cdot)$  is the cumulative distribution function of a standard normal variable,  $\alpha$  is a vector of coefficients, and  $X_{it}$  is a vector of explanatory variables (listed in the first column) observed for firm  $i$  in year  $t$ . The estimation method is maximum likelihood. EQUITY ISSUE DUMMY, EQUITY ISSUE PROCEEDS/ EQUITY, and ACQUISITIONS/ SIZE are contemporaneous. SIZE and INDUSTRY MTB are lagged one year. CONTROL MINUS OWNERSHIP, FINANCIAL INVESTOR DUMMY and US CROSS-LISTING DUMMY are fixed over years (ownership data for the control firms is from 1996-1999, and for the event firms one or few years before the unification). Detailed definitions for the variables are provided in Appendix 2. The regressions also include a constant term, year dummies, and country dummies (not reported). Robust standard errors are in parentheses. The errors are corrected for clustering at the firm level: independence of errors between clusters (firms) is assumed, but the independence assumption is relaxed for within-cluster (firm) errors. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

Variable	(1)	(2)	(3)	(4)	(5)
Equity issue dummy	0.387*** (0.134)			0.380*** (0.134)	0.674** (0.314)
Equity issue proceeds/ Equity		0.479*** (0.185)			
Acquisitions/ Size			0.544** (0.234)	0.495** (0.252)	
Equity issue dummy * Industry MTB					-0.087 (0.083)
Size	-0.094 (0.077)	-0.061 (0.077)	-0.053 (0.064)	-0.135* (0.078)	-0.097 (0.077)
Industry MTB	0.073 (0.045)	0.066 (0.046)	0.043 (0.039)	0.058 (0.046)	0.113* (0.059)
Control minus Ownership	-0.981** (0.445)	-0.993** (0.447)	-0.992** (0.425)	-1.030** (0.453)	-0.996** (0.447)
Financial investor dummy	0.327* (0.173)	0.376** (0.173)	0.345** (0.165)	0.326* (0.174)	0.332* (0.172)
US cross-listing dummy	0.368** (0.175)	0.422** (0.171)	0.357** (0.172)	0.331* (0.180)	0.380** (0.174)
No. of observations	1841	1841	2233	1838	1841
Pseudo-R <sup>2</sup>	0.117	0.113	0.103	0.124	0.119

We hypothesized that the need to raise new equity and make acquisitions of other companies increases the likelihood of unification. The results reported in Table 5 strongly confirm these predictions. Regression (1) shows that the probability of unification significantly increases in the years when firm plans to issue new equity. A planned new equity issue raises the probability of unification by 2.6% a year. Regression (2) reports that the size of new equity issue proceeds scaled by book value of equity significantly increases

the likelihood of unification. A one standard deviation increase in EQUITY ISSUE PROCEEDS/ EQUITY raises the probability of unification by 0.7% a year. Regression (3) reports the results of the acquisitions effect. A one standard deviation increase in ACQUISITIONS/ SIZE raises the likelihood of unification by 0.6% a year. In Regression (4) both, equity issues and acquisitions, effects are included in one model. The estimates remain highly significant.

All the regressions in Table 5 show that SIZE, which controls for firm size, has a negative (but insignificant) effect on the probability of unification. Since smaller firms tend to be more likely takeover targets (e.g., Powell (1999)), this gives a weak evidence to the unification as a takeover defense story. INDUSTRY MTB which is a proxy for future growth opportunities has a positive relation with the probability of unification, as predicted. However, the growth opportunities are significant (at the 10% level) only if the firm is not planning to issue new equity in the nearest future. Regression (5) shows the results when an interaction term between EQUITY ISSUE DUMMY and INDUSTRY MTB is included. The positive and significant coefficient on INDUSTRY MTB means that among firms that do not plan to issue equity in the nearest future, the presence of growth opportunities raises the likelihood of unification. When firm plans to issue new equity and make acquisitions, INDUSTRY MTB has little additional explanatory power.

All the proxies for the value of control and private benefits are significant and have the predicted signs. A higher difference between control rights and cash flow rights (CONTROL MINUS OWNERSHIP) significantly reduces the likelihood of unification. A one standard deviation decrease in CONTROL MINUS OWNERSHIP increases the probability of unification by 0.8% a year. If the largest shareholder is a financial investor, the probability of unification increases by 2.3% a year. This result can mean that the financial investors have lower incentives for private benefit extraction. Alternatively, the financial investors are more concerned about the stock price of the companies they have invested in, as their performance is measured by the return on investment made. As predicted, the U.S. cross-listing is positively related to the likelihood of unification. If US CROSS-LISTING DUMMY changes from zero to one, the odds of unification increase by 2.6% a year. We do not differentiate between Level 1, 2, 3 and Rule 144A ADRs, but most of them are traded as Level 2 and Level 3 (capital raising issues that trade on the NYSE or NASDAQ). There are 19 cross-listed firms among the event group. All but 4 of them were cross-listed before the unification, 2 tapped the US market in the same year as the unification took place (a couple of months after it), and 2 firms cross-listed in the US one and two years after the unification. Coding

these 4 firms as not cross-listed slightly reduces the significance of this variable (to the 10% level).

Several alternative specifications are tested (not reported). The separation between ownership and control can be alternatively measured by a dummy variable that takes a value of one if the difference between the fraction of control and the fraction of ownership held by the largest shareholder is above the median separation in firms where control and ownership differ (CONTROL EXCEEDS OWNERSHIP, HIGH).<sup>12</sup> This variable has a significant negative effect (at the 5% level) on the likelihood of unification. If the controlling shareholder moves from high separation of ownership and control to low separation, the likelihood of unification raises by 1.7% a year. If we include industry dummies instead of INDUSTRY MTB, the results on equity issues and acquisitions, as well as on private benefits proxies do not change. Firm MTB is not significant when INDUSTRY MTB is included. This means that the positive effect of firm's MTB is driven by industry growth opportunities. Past SALES GROWTH and past CAPEX (as proxies for growth opportunities) are not significant, suggesting that the event firms are associated with high expected growth rather than high current growth. Excluding financial industry (SIC 62-67) does not change the results. Excluding years of lower unification activity (1996 and 1997) does not change the results. The proxies for firm's equity dependence as suggested by Kaplan and Zingales (1997), LEVERAGE, CASH FLOW/ ASSETS, CASH BALANCE/ ASSETS, CASH DIVIDENDS/ ASSETS, are not significant. These variables have only indirect effect on unification as they have some power in explaining the likelihood of new equity issues. A firm with higher leverage and lower cash resources is not more likely to unify unless it actually plans to issue new equity.

One may argue that preferred stock (with preferential dividend) is introduced for different reasons than pure multiple voting stock (with equal dividend rights). All regressions were re-run separately for firms that have preferential dividend on low voting shares and for firms that do not have them. The main results remain unchanged suggesting that firms with preferred stock for the purposes of this study (as well as for many previous studies) bear similar characteristics to other dual-class firms.

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<sup>12</sup> This variable has been used previously by Claessens et al. (2002).

## *5.2. Alternative model specifications*

### *5.2.1. Unobserved firm effects*

The pooled probit ignores the possible effect of unobserved firm-specific factors which might be correlated with the explanatory variables. For example, majority owner's family tradition to keep control might affect the resistance to issue new equity, the wish to keep higher separation between votes and equity, as well as the resistance to abandon dual-class shares. To control for these unobserved firm-specific effects, we also estimate fixed effects logit model (not reported). The advantage of this model is that it is possible to obtain a consistent estimator without any assumptions about how the unobserved firm effects are related to the explanatory variables. The disadvantage though is that we can only include the variables that vary over time at least for some firms. All the signs on the main time-varying variables, EQUITY ISSUE DUMMY, EQUITY ISSUE PROCEEDS/ EQUITY, ACQUISITIONS/ SIZE, and INDUSTRY MTB, remain as predicted. The new equity issues lose significance (p-value is 0.2), acquisitions remain significant (at the 1% level), and industry growth opportunities are significant (at the 5% level), too.

### *5.2.2. Cross-sectional analysis*

Table 6 presents the results of a probit model on the probability to unify dual-class shares using average (cross-sectional) data on 493 firms. This model specification asks the question: What are the average characteristics of firms that unify their shares? In this model, the equity issue and acquisitions variables are averaged over all the sample years 1996-2002 to measure the average equity issuance and acquisitions activity in this period, while SIZE and INDUSTRY MTB are averaged over two years prior to the unification for event firms, and over 1994-2001 for control firms. This way of averaging attempts to capture the situation in the dual-class firms prior to a potential unification. The results are largely the same if the averaging for event firms is done over 1994 to one year prior to the unification. One variable is added if compared to the previous specifications, namely a dummy variable that takes a value of one if there has been at least one new equity issue in period 1996-2002. The average of EQUITY ISSUE (ADJUSTED) DUMMY is used instead of simple EQUITY ISSUE DUMMY to avoid overstating equity issuance activity if the firm does not report the proceeds from new equity issues in years when there have been no issues.

**Table 6. Ex ante determinants of the unification (averages)**

The effect of the variables listed on the probability to unify dual-class shares is estimated by a probit model:

$$Prob(Unify_i=1) = F(X_i\alpha),$$

where  $Unify_i$  is a variable that equals 1 if company  $i$  switched to a single-class share system in period 1996-2002 and 0 if it remained dual-class in this period,  $F(\cdot)$  is the cumulative distribution function of a standard normal variable,  $\alpha$  is a vector of coefficients, and  $X_i$  is a vector of explanatory variables (listed in the first column) observed for firm  $i$ . The estimation method is maximum likelihood. In this specification, the focus is on cross-sectional variation between the main sample of firms. AT LEAST ONE EQUITY ISSUE, DUMMY is a dummy variable that takes a value of 1 if the firm has had at least one new equity issue in period 1996-2002. EQUITY ISSUE (ADJUSTED) DUMMY, EQUITY ISSUE PROCEEDS/ EQUITY, and ACQUISITIONS/ SIZE are averaged over 1996-2002. SIZE and INDUSTRY MTB are averaged over 1994 to 2001 for control group, and over two years prior to the unification for the event group. Detailed definitions for the variables are provided in Appendix 2. The regressions also include a constant term, and country dummies (not reported). Robust standard errors are in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

Variable	(1)	(2)	(3)	(4)	(5)
At least one equity issue, dummy	0.625*** (0.172)				
Equity issue (adjusted) dummy (average)		0.876*** (0.320)			0.842*** (0.321)
Equity issue proceeds/ Equity (average)			0.359* (0.198)		
Acquisitions/ Size (average)				0.767 (0.566)	0.590 (0.575)
Size (average)	-0.005 (0.093)	0.016 (0.095)	0.041 (0.105)	0.024 (0.1)	-0.016 (0.102)
Industry MTB (average)	0.280*** (0.082)	0.261*** (0.080)	0.269*** (0.084)	0.255*** (0.080)	0.252*** (0.081)
Control minus Ownership	-1.489** (0.615)	-1.522** (0.606)	-1.687*** (0.623)	-1.593*** (0.604)	-1.521** (0.608)
Financial investor dummy	0.380 (0.25)	0.439* (0.253)	0.539** (0.262)	0.478* (0.251)	0.449* (0.251)
US cross-listing dummy	0.360 (0.249)	0.311 (0.259)	0.461* (0.252)	0.382 (0.255)	0.265 (0.262)
No. of observations	378	378	352	378	378
Pseudo-R <sup>2</sup>	0.179	0.163	0.157	0.150	0.166

The results in Table 6 largely confirm my previous findings. If a firm has made a seasoned equity offering at least once during 1996-2002, the probability of unification in this period increases by 15%. A one standard deviation increase in EQUITY ISSUE PROCEEDS/ EQUITY (AVERAGE) raises the likelihood of unification by 3%, and a one standard deviation increase in ACQUISITIONS/ SIZE (AVERAGE) by 4%. INDUSTRY MTB is highly significant, too (at the 1% level), a one standard deviation increase in this variable raises the likelihood of unification by 8%. Separation between ownership and control remains negative and highly significant. The effect of financial investor and U.S. cross-listing is positive but

less significant. The results suggest that the firms that unified their shares in 1996-2002 were on average more active in issuing new equity and had substantially higher growth opportunities than other dual-class firms.

### *5.2.3. Continuous endogenous explanatory variables test*

A source of concern both in cross-sectional model and panel data is that the equity issue and acquisitions variables are endogenous. It is difficult to find a good instrument for these variables to carry out the instrumental variables models or a bivariate probit. As a robustness, I perform a test of endogeneity using continuous endogenous explanatory variables method (described in Wooldridge (2002)) treating EQUITY ISSUE DUMMY (AVERAGE) as an endogenous variable (not reported). I use LEVERAGE (AVERAGE) as an instrument for equity issues. Leverage is clearly correlated with new equity issues. High leverage is one of the reasons why companies need to approach equity markets, and there is no evidence why it should be directly correlated with the unification decision. However, we can only rely on the results of this test if we believe that the average leverage is exogenous (one can argue that it is hard to change leverage quickly and dramatically). If one disagrees with this assumption, the following test does not make sense. So, for those who believe... In the first step, average EQUITY ISSUE DUMMY is regressed on INDUSTRY MTB, LEVERAGE, SIZE, and country dummies. Indeed, LEVERAGE has a significant positive impact on the new equity issues, and so does INDUSTRY MTB. In the second step, probit regression is estimated including the residuals from the first-step regression. The *t*-statistic on the residuals is a direct test of the null hypothesis of endogeneity of equity issues variable. The *t*-statistic is 0.68 (not significant). The average EQUITY ISSUE DUMMY remains significant.

### *5.2.4. Matching sample*

One way to deal with the problem of endogeneity of equity issues and acquisitions variables is to construct a matching sample of firms, where the matching is based on the most likely suspects for endogeneity. I match firms on size, industry and market-to-book, and check whether there is still substantial difference in new equity issues and acquisitions (and other variables) between the event group and the control group.

The combination of Loughran and Ritter (1997) and Barber and Lyon (1997) matching algorithms is used to find the closest match for each event firm. The firms are matched on industry, size (log of sales), and MTB ratios. All 493 main sample dual-class firms are

divided into 108 groups: 12 industries<sup>13</sup> times 3 size categories times 3 MTB categories. MTB data at the end of the year preceding the unification is missing for 7 event firms, which are therefore excluded. The closest match for 101 event firm is found based on firm characteristics at the end of the year preceding the unification.

Panel A of Table 7 reports the comparison of means of different variables in the two matched groups three, two, and one year prior to the unification. The table reports the *t*-Statistic of testing the equality of means. The results are largely the same if we use the *z*-Statistic testing the equality of distributions between the event firms and control firms using the Wilcoxon matched-pairs signed-rank test. The results provide strong support for the hypothesis that the value of control (private benefits) is lower in firms that decide to unify the shares. In particular, CONTROL MINUS OWNERSHIP and CONTROL EXCEEDS OWNERSHIP, HIGH is significantly lower (at the 1% level) in the event firms than in the control firms. There are more firms with preferential dividends on low voting shares among event firms. Removing the preferential dividend makes the unification more attractive for the controlling shareholders (and other high voting shareholders). VOTING PREMIUM three, two, and one year prior to the unification is significantly lower in the event companies but this is purely the effect of preferential dividends. Zingales (1995) and Nenova (2003) have shown that dividend preference for low voting shares reduces the voting premium. In firms with equal dividend rights to high and low voting shares, there is no significant difference in voting premium.

The comparison between the matching samples strongly corroborates the finding that the firms that issue new equity and make acquisitions are the ones that are more likely to unify their shares (see Panel B of Table 7). The difference between the equity issue and acquisitions variables in year zero (the unification year) is statistically significant. Thirty six percent of event firms issued equity compared to only 19% of the matched control firms, and average ACQUISITIONS/ SIZE was 0.23 in the event firms compared to 0.11 in the matched control firms.

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<sup>13</sup> The SIC codes are combined into 12 larger industry groups following Campbell (1996): Basic industry (SIC 10, 12, 14, 24, 26, 28, 33), Capital goods (SIC 34-35, 38), Construction (SIC 15-17, 32, 52), Consumer durables (SIC 25, 30, 36, 37, 39, 50, 55, 57), Financial/ real estate (excluding banks) (SIC 62-69), Food and tobacco (SIC 1, 20, 21, 54), Leisure (SIC 27, 58, 70, 78-79), Petroleum (SIC 13, 29), Services (SIC 72-73, 75-76, 80, 82, 87, 89), Textiles and trade (SIC 22-23, 31, 51, 53, 56, 59), Transportation (SIC 40-42, 44-45, 47), and Utilities (SIC 46, 48, 49).



**Table 7. Comparison of variables: event firms vs. matching control firms**

The table reports mean ratios for 101 event firms which unified their shares in 1996-2002. Matching control firms are chosen by matching each event firm with a dual-class firm using the following algorithm. All 493 event and control firms are divided into 108 groups: 12 industry groups (as defined by Campbell (1996)) times 3 size categories times 3 market-to-book (MTB) categories. Size and MTB categories are High (75th percentile and upward), Medium (25th to 75th percentile), and Low (25th percentile and downward). If there are more than one dual-class firm in the same group, the firm with the closest MTB is chosen. If there is no matching firms in the same group (there are 3 such cases), the firm from the same industry with the closest MTB ratio from the next closest size category is taken. T-Statistics and (two-sided) significance levels of testing the equality of means between the event group and the matched control group are presented. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels. Appendix 2 provides definitions for the variables.

Panel A: Ex ante effects									
	Event group means			Control group means			T-Statistic		
Year relative to unification	-3	-2	-1	-3	-2	-1	-3	-2	-1
Industry MTB	3.17	3.43	3.34	3.19	3.28	3.21	-0.11	0.76	0.63
MTB	2.80	3.11	3.03	2.45	2.54	2.41	0.97	1.39	1.41
Industry adjusted MTB	-0.49	-0.43	-0.56	-0.77	-0.76	-0.80	0.80	0.89	0.63
Size	5.58	5.58	5.62	5.56	5.48	5.47	0.13	0.78	1.17
ROA	0.05	0.06	0.07	0.06	0.07	0.06	-1.30	-0.82	0.62
ROE	0.10	0.09	0.13	0.13	0.14	0.14	-0.79	-1.13	-0.21
Leverage	0.27	0.26	0.25	0.27	0.25	0.24	0.22	0.50	0.52
CAPEX	0.32	0.35	0.31	0.34	0.34	0.30	-0.17	0.13	0.05
Cash flow/ Assets	0.07	0.07	0.07	0.07	0.08	0.07	-0.56	-0.99	-0.26
Cash balance/ Assets	0.11	0.12	0.13	0.11	0.12	0.11	0.08	-0.29	1.34
Cash dividends/ Assets	0.01	0.01	0.02	0.02	0.02	0.02	-2.35**	-1.53	-1.93*
Sales growth	0.10	0.10	0.11	0.14	0.12	0.11	-0.88	-0.50	-0.09
Voting premium	0.06	0.06	0.04	0.17	0.16	0.19	-1.86*	-1.75*	-2.68***
Voting premium (no pref. dividend)	0.04	0.05	0.06	0.06	0.06	0.06	-0.59	-0.09	0.23
Equity issue dummy	0.30	0.28	0.30	0.25	0.27	0.21	0.60	0.15	1.40
Equity issue (adjusted) dummy	0.21	0.22	0.26	0.17	0.22	0.18	0.72	0.00	1.36
Equity issue proceeds/ Equity	0.09	0.09	0.16	0.05	0.04	0.06	0.77	1.34	1.72*
Acquisitions/ Size	0.14	0.11	0.13	0.07	0.09	0.11	1.82*	0.50	0.64
	Mean Obs.			Mean Obs.			T-Statistic		
US cross-listing dummy	0.18 101			0.12 101			1.19		
Both shares listed dummy	0.63 100			0.65 99			-0.24		
Dividend dummy	0.53 88			0.31 78			3.02***		
Control	0.40 91			0.40 81			-0.20		
Ownership	0.26 78			0.23 81			1.07		
Control minus Ownership	0.12 77			0.18 81			-2.98***		
Control exceeds Ownership, high	0.29 77			0.63 81			-4.59***		
Family owner dummy	0.39 92			0.42 81			-0.38		
Financial investor dummy	0.17 92			0.17 81			0.02		

Panel B: Ex post effects												
	Event group means				Control group means				T-Statistic			
Year relative to unification	0	+1	+2	+3	0	+1	+2	+3	0	+1	+2	+3
Industry MTB	3.00	2.76	2.69	2.83	3.00	2.95	2.76	2.67	0.01	-0.80	-0.36	0.53
MTB	3.08	3.40	2.86	2.77	2.58	2.40	2.29	1.88	0.89	1.67*	1.21	2.06**
Industry adjusted MTB	-0.04	0.42	0.05	-0.07	-0.45	-0.64	-0.61	-0.79	0.79	2.01**	1.35	1.48
Size	5.64	5.62	5.62	5.64	5.50	5.43	5.49	5.60	1.09	1.34	0.83	0.23
ROA	0.06	0.04	0.05	0.05	0.06	0.05	0.06	0.06	-0.41	-0.34	-0.42	-0.29
ROE	0.09	0.06	0.09	0.11	0.11	0.09	0.10	0.11	-0.52	-0.54	-0.22	-0.07
Leverage	0.26	0.24	0.24	0.23	0.25	0.29	0.29	0.28	0.17	-1.78*	-1.73*	-1.11
CAPEX	0.32	0.30	0.36	0.24	0.29	0.24	0.33	0.27	0.47	0.97	0.25	-0.37
Cash flow/ Assets	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.08	-0.09	0.36	0.68	-0.70
Cash balance/ Assets	0.13	0.14	0.14	0.13	0.11	0.12	0.11	0.10	1.55	0.77	1.35	1.05
Cash dividends/ Assets	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	-1.38	-0.65	0.57	0.55
Sales growth	0.09	0.11	0.14	0.11	0.08	0.09	0.15	0.18	0.37	0.51	-0.15	-1.00
Equity issue dummy	0.36	0.24	0.23	0.26	0.19	0.13	0.18	0.24	2.66***	1.74*	0.62	0.20
Equity issue (adjusted) dummy	0.32	0.19	0.18	0.22	0.16	0.11	0.15	0.20	2.68***	1.46	0.46	0.26
Equity issue proceeds/ Equity	0.15	0.05	0.13	0.01	0.06	0.06	0.08	0.01	2.04**	-0.14	0.70	-0.69
Acquisitions/ Size	0.23	0.25	0.17	0.15	0.11	0.12	0.14	0.14	1.53	1.21	0.57	0.13

The results show that the INDUSTRY ADJUSTED MTB prior to the unification is consistently higher in the event firms, but the difference is not significant. The event firms appear to pay lower cash dividends prior to the unification. Also cash flow is lower and the leverage higher (not significant). One of the explanations for this pattern is the Kaplan and Zingales (1997) equity dependence story, namely that the cash constraints raise the need for new equity capital and hence the likelihood of unification. Keeping growth opportunities constant, the event firms are the ones that are more dependent on equity capital.

### *5.3. Evidence from takeovers of dual-class firms*

To address the hypothesis that the unification can be a method to defend a takeover, I explore the characteristics of dual-class firms that were taken over during the period 1996-2002. Panel B of Table 3 shows that 63 of firms that had dual-class shares at the end of 1995 were taken over or merged. About half of them were taken over by (or merged with) single-class companies, and the other half by dual-class companies. As we argued before, acquiring control in a dual-class company is cheaper than in a single-class company because the raider can buy high voting shares. Moreover, there can be a hostile takeover if the high voting shares are not closely held by the controlling shareholder.

Forty percent of all the dual-class takeovers happened in Sweden. For this and for data availability reasons I look deeper into these 25 companies. I find that 62% of all the companies that were taken over had “widely held” dual-class shares, i.e. the high voting shares (A shares) were distributed among many shareholders. Among the seven firms that unified their shares in Sweden, all but one firm had widely held high voting shares, suggesting that these firms were potential takeover targets. Among the firms that stayed dual-class throughout the sample period (in Sweden) less than half (49%) of them had widely held high voting shares. Combined with the fact that all but one of the unification firms had a financial investor as the largest shareholder (a proxy for low private benefits of control), this evidence suggests that firms can choose to unify their shares to prevent a value destroying takeover by a raider with high private benefits of control.

### *5.4. Summary*

Using different model specifications, the results strongly confirm the hypotheses that the firms that are dependent on new equity capital, make more acquisitions of other companies, and have a controlling shareholder with lower private benefits of control are more likely to

unify their shares. Evidence from Sweden suggests that the unification can be done to prevent a takeover, i.e. to make the control rights more expensive.

## **6. Ex post consequences of unification**

In this section two methods are used to estimate the possible consequences of the unification. The change in ownership after the unification is also discussed here.

### *6.1. Main model*

The consequences of unification are estimated using fixed-effects regressions in which the effect of unification is captured by dummy variables for the year of the unification and the three subsequent years (see Section 3.2). The different variables can be affected not only by the unification decision but by some fundamental changes in the firm. To control for these fundamental effects, we include the most applicable control variables. The estimates of other variables (not reported) are discussed where appropriate.

Table 8 presents the results. The INDUSTRY ADJUSTED MTB increases significantly in the year of the unification and the two consecutive years. The joint test shows that the sum of the coefficients for the two years after the unification is significantly positive (at the 1% level). The result remains significant when we control for lagged sales growth and return on equity. The result holds also when we include only firms that issued equity in the same year as the unification. This finding provides evidence that firms actually reach their goal of increasing the share value by switching to one share-one vote.

LEVERAGE decreases significantly in the first and second year after the unification. CAPEX increases in all years following the unification, but the effect is not significant. SALES GROWTH increases significantly following the unification. The joint test shows that the sum of coefficients for the two and three years after the unification is significantly positive (at the 5% level). The effect on operating performance is mixed; there is no change in ROA, while ROE slightly decreases (not significant). CASH FLOW/ ASSETS, CASH BALANCE/ ASSETS, and CASH DIVIDENDS/ ASSETS all increase after the unification, but the result is slightly significant only for cash dividends.

EQUITY ISSUE PROCEEDS/ EQUITY and ACQUISITIONS/ SIZE remain positive in the year of the unification. The equity issues decrease in the year following the unification (not significant). The result suggests that if a firm has decided to issue new equity, the equity issue is timed together with the unification to mask the negative signal of a SEO. Previous

**Table 8. Ex post effects of the unification**

For each of the variables listed the following specification is estimated:

$$y_{it} = \alpha + UNI_t + UNI_{t-1} + UNI_{t-2} + UNI_{t-3} + u_i + d_t + \varepsilon_{it},$$

where  $u_i$  and  $d_t$  are respectively a firm-specific and calendar year-specific effect,  $UNI_{t,j}$  are dummy variables equal to one if year  $t-j$  was the year of the unification. By using a fixed effect model each company before the unification is used as a control for itself after the unification. The table only reports the coefficients on the unification and post-unification dummy variables. Standard errors are reported in the parentheses. The second to last column reports the p-value of the hypothesis that the sum of the coefficients of Year-1 and Year-2 dummies is equal to zero. The last column reports the p-value of the hypothesis that the sum of the coefficients of all the three post-unification dummies is equal to zero. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels. Appendix 2 provides definitions for the variables.

	Year 0	Year -1	Year -2	Year -3	F-test (2 years)	F-test (3 years)
MTB	0.252 (0.335)	0.034 (0.359)	-0.146 (0.399)	-0.420 (0.423)	0.807	0.776
Industry adjusted MTB	0.632** (0.318)	0.843** (0.340)	0.473 (0.379)	-0.328 (0.402)	0.031	0.258
Size	0.015 (0.026)	0.028 (0.028)	-0.016 (0.032)	0.031 (0.033)	0.977	0.909
ROA	0.010 (0.014)	-0.006 (0.015)	0.005 (0.017)	-0.010 (0.018)	0.901	0.669
ROE	-0.010 (0.038)	-0.049 (0.039)	-0.024 (0.044)	-0.008 (0.046)	0.295	0.513
Leverage	0.000 (0.013)	-0.031** (0.014)	-0.034** (0.015)	0.011 (0.016)	0.009	0.033
CAPEX	0.053 (0.062)	0.019 (0.067)	0.115 (0.074)	0.000 (0.079)	0.265	0.438
Cash flow/ Assets	0.001 (0.011)	0.008 (0.011)	0.006 (0.013)	0.002 (0.013)	0.472	0.566
Cash balance/ Assets	0.009 (0.010)	0.011 (0.011)	0.003 (0.012)	-0.005 (0.013)	0.485	0.742
Cash dividends/ Assets	-0.004 (0.003)	0.003 (0.003)	0.006* (0.003)	0.001 (0.003)	0.108	0.182
Sales growth	0.046 (0.041)	0.082* (0.044)	0.079 (0.050)	0.085* (0.052)	0.040	0.027
Equity issue proceeds/ Equity	0.017 (0.039)	-0.067 (0.042)	0.035 (0.046)	-0.095 (0.048)	0.619	0.211
Acquisitions/ Size	0.069** (0.029)	0.043 (0.031)	0.026 (0.035)	-0.003 (0.036)	0.212	0.399

research has shown that the SEOs are followed by lower market valuations (Loughran and Ritter, 1995; and Levis, 1995) and performance (Loughran and Ritter, 1997). The unification, in turn, creates a positive publicity of improving corporate governance. In firms that issued equity in the unification year, INDUSTRY ADJUSTED MTB increases following the unification, suggesting that the positive signal of the unification is stronger than the negative signal of a SEO.

### *6.2. Robustness check: matching sample*

Following the matching on industry, size, and MTB introduced in Section IV.B., we compare the financial ratios in the event group and the matched control group one to three years after the unification. The results are presented in Panel B of Table 7.

The comparison of means between the event firms and the matched control firms corroborates the result of increased market valuation after the unification. INDUSTRY ADJUSTED MTB in the event firms is higher in all three years after the unification. The difference is the highest in the year following the unification. Interestingly, the sign of the variable changes: average INDUSTRY ADJUSTED MTB becomes positive for the event firms in the first and second year after the unification, while it remains negative for the control firms. The result confirms that the firms succeed to increase the market value by unifying their shares.

Operating performance (ROA and ROE) in the years following the unification tends to be lower in the event group, but the result is not significant. The results on CAPEX and SALES GROWTH are mixed and not significant. Interestingly, once we keep growth opportunities fixed, the firms that unified their shares are not growing faster and investing more than similar firms that have kept the dual-class share structure. LEVERAGE is lower in the event group following the unification. We may observe that the difference arises because of increased leverage in the control group and slightly decreased leverage in the event group. Given the fact that the control firms are the closest matches by growth opportunities, it can be interpreted that the event firms have chosen to finance the growth with equity, while the control firms with debt.

### *6.3. Ownership changes*

Table 9 summarizes the changes in ownership structure after the unification in 71 event firm (where the data were available). This summary attempts to shed some light on the hypothesis that the unification is more likely if the controlling shareholder is planning to sell his stake, i.e., is eager to increase the security benefits.

Panel A of Table 9 shows that the controlling shareholder (before the unification) does not have a block of shares (10% of total stock) after the unification in 28% of cases (20 out of 71 firm). It is a weak support to the hypothesis that the controlling shareholder's willingness to sell out may be one of the reasons for unification. However, in most of the cases (66%), the controlling shareholder keeps some control by holding at least 10% of total stock. Therefore, it is hard to argue that the controlling shareholder's willingness to sell his stake is

**Table 9. Ownership changes after the unification**

The table shows the ownership dynamics for 71 firm that unified the dual-class shares in 1996-2002. Panel A presents a summary of the changes in the largest shareholder's voting power after the unification. The largest shareholder is defined as the shareholder with the highest number of votes before the unification. Panel B shows the average (and median) change in the largest shareholder's voting power after the unification.

Panel A		
Largest shareholder's (by votes, before unification) action:	Number of firms	Percent of firms
Keep or acquire majority control (more than 50% of votes)	13	18.3%
Lose majority control, but keep a block (more than 10% of votes)	4	5.6%
Lose majority control completely (less than 10% of votes)	6	8.5%
Keep control in 10%-50% range (before and after)	30	42.3%
Lose a block from 10%-50% range to less than 10% of votes	14	19.7%
Dispersed, less than 10% of votes (before and after)	4	5.6%
	71	100.0%
Panel B		
	Mean	Median
Largest shareholder's fraction of votes <i>before</i> unification, %	38.7	34.1
Largest shareholder's fraction of equity <i>before</i> unification, %	25.0	19.1
Largest shareholder's fraction of votes and equity <i>after</i> unification, %	22.8	21.3
Largest shareholder's change in votes (after minus before), %	-15.9	-12.8
Largest shareholder's change in votes, relative to votes held before	-41%	-38%

one of the main drivers for the unification.

In Panel B of Table 9, we observe that on average the controlling shareholder's voting power decreases from 39% to 23%, while the equity stake stays virtually the same. The decrease in voting power is mainly the consequence of the unification (the alignment of control and ownership stakes) rather than from selling the shares.

#### 6.4. Summary

A firm that unifies its dual-class shares experiences increased market value and sales growth after the unification if compared to the firm *itself* before the unification. Comparing firms with similar growth opportunities, firms that unify the shares experience higher market values and lower leverage, but no difference in sales growth if compared to *other* dual-class firms. This result suggests that dual-class share structure *per se* does not preclude firms from growth unless they depend on equity capital. The hypothesis that the controlling shareholder sells his shares after the unification is not confirmed in my data.

## 7. Conclusions

This paper argues that the unification of dual-class shares is carried out with an aim to increase the firm's market value. The data show that firms that unify their dual-class shares are more active in issuing new equity, make more acquisitions, and have higher industry growth opportunities – the firm characteristics that are associated with substantial gains from higher firm value. The results hold after including various controls and they are robust to different methodologies. Further, the ex post analysis of the unification show that the firms reach their goal. The average market-to-book ratios that are constantly lower in dual-class firms jump to the average level of single-class firms in the same industry right after the unification.

An important precondition for the unification to happen is the approval by the controlling shareholder. I find that higher value of control rights significantly reduces the probability of unification. In particular, the firms that unified their shares have lower separation between voting rights and cash flow rights, higher presence of financial investors, and higher frequency of cross-listing in the U.S. This evidence is also consistent with the hypothesis that the unification is a way to prevent a takeover by a raider with high private benefits.

This paper supports the view that the dual-class shares are temporary structures kept until the point when the firm needs new equity capital for further expansion and growth (Amoako-Adu and Smith, 2001). For some firms it may take few years, for others it may never happen. By comparing dual-class firms with ex ante similar growth opportunities, the results show that there is no difference in ex post sales growth and capital expenditure between the firms that unified shares and those that stayed dual-class. There is a difference, however, in how the two groups finance growth. The ones that unify are more equity capital dependent, and find it optimal to boost the share value. The ones that stay dual-class finance growth with retained earnings or debt, and do not worry that the share price is lower than that of single-class firms in the industry. In sum, the paper suggests that all dual-class firms should *not* be forced by law to switch to one share-one vote. The firms that need to approach equity markets for capital will sooner or later be forced by the market to unify their shares.

## Appendix 1. Voting arrangements

Country	Most common voting arrangement	Most characteristic switch	Regulatory and other issues related to dual-class shares
Denmark	High voting shares have 10 times the voting rights of low voting shares.	Abandoning multiple voting right shares.	One of the recommendations by the Nørby Committee's (which was set up in March 2001) report on Corporate Governance in Denmark is: "It is recommended that there is proportionality between capital investments and voting rights and that the board refrains from countering takeover bids on its own". The Copenhagen Stock Exchange has recommended the listed companies to relate to the Nørby Committee's recommendations for good corporate governance in their annual reports and accounts.
Finland	High voting shares have 10-20 times the voting rights of low voting shares.	Abandoning multiple voting right shares.	The change in the Companies Act (in effect from 1 September 1997) stipulates that a 2/3 majority is required in every share class for certain important corporate decisions to be made. This change effectively increased the capital needed to secure control.
Germany	Ordinary shares have one vote. Preference shares are nonvoting. Maximum allowable non-voting preference share capital is one half. Law prescribes a priority dividend for preference shares.	Changing preference shares into ordinary shares.	Stock market index compilers have been urging companies to standardize shares through abolishing preference shares in order to make indices more transparent and accurate. Following the re-evaluation of the Dax and M-Dax indices on June, 2002, only one type of share is permitted for inclusion in the index (i.e., either ordinary or preference share of the company). Preference shares are not allowed to be listed on Neuer Markt (established in 1997).
Italy	Ordinary shares have one vote. Savings shares are nonvoting. Non voting (and limited voting) capital may not exceed 50% of stock capital. Nonvoting shares (savings shares) are entitled to a minimum dividend equal to 5% of the par value.	Abandoning (non-voting right) savings shares and limited voting right shares.	In 1998, legal protection for investors was improved with the so called Draghi's law. If evaluated in terms of the index of shareholder protection developed by La Porta et al. (1998), the impact of this law was an improvement in shareholder protection from 1 to 5. The threshold to call a shareholder meeting was reduced to 10%. The loopholes in the takeover law were corrected. Minority shareholders were given more rights to voice their opinions. See Aganin and Volpin (2003). Only ordinary shares are allowed to be listed on Nuovo Mercato (established in 1999).
Norway	A shares have one vote. B shares are nonvoting. Special government permission required for issuing dual-class shares.	Abandoning multiple voting right shares.	Eierforum is an informal group that represents the largest institutional investors in Norway. The group has produced guidelines for good shareholder accountability, which suggest that "The board should positively encourage all activities which strengthen liquidity in the company's shares, and should ensure that such activities are based on the principle of one share-one vote."
Sweden	High voting shares have 10 times the voting rights of low voting shares.	Abandoning multiple voting right shares.	There have been proposals since long to change the law that allows the differentiation between voting power of A and B shares. Since 1997, shares can be issued only at a maximum ratio of 1:10 votes (previously, up to 1:1000 was allowed).
Switzerland	Each share has one vote, but different classes are allowed to have different nominal value, i.e., in principle, different voting power.	Changing bearer shares (inhaber) into registered (namen), single nominal value shares.	The current trend toward converting bearer shares into registered shares has mainly two sources: an increasing awareness of the importance of investor relations and technological developments enabling companies to handle extensive shareholder registers in electronic form.



## Appendix 2. Variable definitions

Variable	Description
<b>Main sample:</b>	Firms that a) are included in <i>Moody's/ Mergent International Companies</i> Manuals 1996-2002, b) are not commercial banks or credit institutions (two-digit SIC code 60 and 61), c) had a dual-class share structure at the end of 1995, d) at least one share class was listed at the end of 1995, e) are still listed on the stock exchange at the end of 2002, and...
Event group	... f) have only one share class at the end of 2002 (i.e., that unified share classes in the period 1996-2002).
Control group	... f) still have dual-class share structure at the end of 2002.
Unification year	The year when firm's shareholders approved the switch from dual-class to single-class shares.
<b>Annual data:</b>	Annual data for 1994-2002 is collected. All variables (unless specified otherwise) are Winsorized at the 1 <sup>st</sup> and 99 <sup>th</sup> percentile. <i>Source: Worldscape</i> (unless specified otherwise).
Industry MTB	Average market-to-book ratio of single-class firms in the respective industry. Industry is classified by the SIC two-digit code. All market-to-book ratios are Winsorized at the 1 <sup>st</sup> and 99 <sup>th</sup> percentile prior to taking industry averages. The pool of all single share class firms in the sample countries is taken from <i>Worldscope</i> August-2003 disk.
MTB	Firm's market value of equity over book value of equity.
Industry adjusted MTB	MTB minus Industry MTB.
Size	Natural logarithm of firm's sales.
ROA	Earnings before interest, taxes and depreciation (EBITDA) over total assets.
ROE	Net income over book value of shareholder's equity.
Leverage	Total debt over total capital (debt plus shareholder's equity).
CAPEX	Capital expenditures over one-year lagged net property, plant and equipment.
Cash flow/ Assets	Operating cash flow over one-year lagged total assets.
Cash balance/ Assets	Cash and cash equivalents (in the balance sheet) over total assets.
Cash dividends/ Assets	Total cash dividends distributed to shareholders over one-year lagged total assets.
Sales growth	The annual rate of growth of sales.
Voting premium	Price of high voting share minus Price of low voting share divided by Price of low voting share. The annual voting premium is obtained by averaging monthly voting premiums. <i>Source: Datastream.</i>
Voting premium (no pref. dividend)	Voting premium conditional on equal dividend rights to high and low voting shares.
Equity issue dummy	Equals one if the company issued new equity in that year; and zero if net equity issue proceeds are zero. (When net equity issue proceeds are not reported in the cash flow statement, the dummy variable is coded as <i>missing</i> .)
Equity issue (adjusted) dummy	Equals one if the company issued new equity in that year; and zero otherwise. (When net equity issue proceeds are not reported in the cash flow statement, the dummy variable is coded as <i>zero</i> .)
Equity issue proceeds/ Equity	Net equity issue proceeds (from the cash flow statement) over shareholder's equity at the end of previous year.
Acquisitions/ Size	Number of new firms acquired in a given year over firm size (log of sales). Repeated purchases, i.e., increasing existing ownership stake are not counted. <i>Source: SDC Platinum.</i>

## Appendix 2. Continued

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### Fixed data:

US cross-listing dummy	Equals one if company's shares (at least one class) is cross-listed in the US at the end of 1995 through an ADR (American Depositary Receipt) program (not differentiating between various types of listing). <i>Sources: Datastream, Moody's/ Mergent Manuals.</i>
Both shares listed dummy	Equals one if all shares with different voting rights are listed on the stock exchange; and zero otherwise. <i>Sources: Datastream, Moody's/ Mergent Manuals.</i>
Dividend dummy	Equals one if low voting shares received higher dividend than high voting shares in at least one year during 1990 and 2001. Equals one half if low voting shares have a minimum dividend requirement set in the bylaws, but in practice both shares have received the same dividend since 1990 (e.g., because the dividend was above the minimum required). Equals zero if both shares have equal dividend rights. <i>Sources: Moody's/ Mergent Manuals, Datastream, annual reports, Lexis-Nexis.</i>

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### Ownership data:

	For control group, the ownership data come from Faccio and Lang (2002), from the annual reports and <i>Worldscope</i> (for Denmark, which is not covered in Faccio and Lang). Faccio and Lang data is from 1996 for Germany, Italy, and Switzerland; from 1998 - for Sweden and Norway; and from 1999 - for Finland. For event group, the ownership data come from the annual reports one year prior to the unification, <i>Worldscope</i> , or <i>Lexis-Nexis</i> . The ownership data after the unification for event firms come from the annual reports and <i>Lexis-Nexis</i> .
Control	Fraction of the firm's voting rights owned by the largest shareholder (ranked by votes).
Ownership	Fraction of the firm's capital (cash flow) rights owned by the largest shareholder (ranked by votes).
Control minus Ownership	The difference between control rights and cash flow rights.
Control exceeds Ownership, high	Equals one if control rights (Control) are higher than cash flow rights (Ownership), and if this separation is higher than the median separation in corporations where control and ownership differ, and zero otherwise.
Family owner dummy	Equals one if the largest shareholder (ranked by votes) is a family (a private person or individuals with the same surname or a family trust); and zero otherwise.
Financial investor dummy	Equals one if the largest shareholder (ranked by votes) is a financial institution; and zero otherwise.

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## Chapter 4

# Do Good Governance Provisions Shelter Investors from Contagion? Evidence from the Russian Crisis\*

### 1. Introduction

On August 17, 1998 the Russian government announced the devaluation of the rouble, and a three-month moratorium on the payment of external debts by commercial banks. Within days, the rouble exchange rate plummeted, leading to mass bankruptcies of commercial banks and losses of savings and jobs for millions of Russians. This black Monday caused adverse effects on economies far beyond the borders of the Russian Federation. Due to geographical, trade, and financial links, the transition economies were among the ones most severely hit by the Russian virus. In this paper, I ask the following questions: Which firms were most affected by the crisis? What explains the persistence of the shock in transition economies? Do firm characteristics matter more than country characteristics?

Following Forbes (2004), I focus on five channels by which crisis in one country can be transmitted to firms in other countries: *product competitiveness*, an *income* effect, a *credit crunch*, a *forced-portfolio recomposition*, and a *wake-up call* effect. The *product competitiveness* theory (e.g., as modeled in Corsetti et al., 2000) suggests that if one country devalues its currency, exports from this country will become relatively less expensive in other countries. As a result, the competitiveness of domestically produced products against these imports decreases. If the *product competitiveness* effect is important, we can expect lower stock returns for firms that compete with imports from Russia. The *income* effect suggests that aggregate demand in Russia goes down during the crisis. Therefore, firms that export to Russia should face reduced demand, and resultantly lower stock returns. The *credit crunch* effect (e.g., Goldfajn and Valdés, 1997) means that crisis in one country reduces international

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financial liquidity and makes borrowing for firms in other countries more costly. As a result, higher levered companies should be more negatively affected by crisis, and therefore experience lower stock returns. The *forced-portfolio recomposition* effect (e.g., Valdés, 2000) suggests that a crisis in one market can reduce the liquidity of individual investors, forcing them to sell assets in other countries in order to satisfy margin calls or to meet regulatory requirements. Finally, the *wake-up call* effect suggests that a crisis in one country can force investors to reassess the sustainability of macroeconomic fundamentals and corporate governance systems in countries with similar characteristics (e.g., Claessens et al., 2001; Johnson et al., 2000). The investors can react by pulling out from countries and firms that they believe to be the next crisis suspect.

Using company data from 417 firms in transition countries, I evaluated the effect of firm, industry, and country characteristics on short-term (one month period around black Monday) and long-term (one year after the crisis) stock returns. Consistent with Forbes (2004), I found that trade channels were important mechanisms transmitting the Russian crisis to the CEE markets. In particular, firms operating in industries that have substantial exports to Russia, and in industries that compete with imports from Russia, were more severely hit by the crisis. I also found evidence of a *forced-portfolio recomposition* effect. Companies with a presumably higher presence of institutional investors, as proxied for by larger firm size and greater stock liquidity, experienced sharper declines in short-term returns. The results show that the recovery was faster (long-term returns were higher) in firms with lower financial leverage and with the presence of a foreign blockholder. In this paper, I use the presence of a foreign blockholder (with at least 10% of capital) as a measure of better internal corporate governance. Foreign investors tend to pick better-governed firms, and, moreover, they can provide a monitoring role once they have committed substantial capital to the company.

The data show that external corporate governance, measured by the *Rule of Law* index – a score that ranges from 0 to 10 and measures the tradition for law and order, played a role in the speed of recovery in the transition economies. In most cases, less exposed firms (i.e. the ones with no trade linkages with Russia, smaller size, foreign blockholder presence, and lower leverage) located in bad governance countries had lower long-term returns than exposed firms in good governance countries. In this context, the paper offers additional evidence to the view that countries do matter, i.e., the legal protection of investors is an important determinant of stock returns, which can outweigh the importance of firm-specific characteristics.

This work is related to several papers that focus on explaining stock returns during a crisis. Johnson et al. (2000) look at country level variations. Forbes (2004) studies firm-level trade and financial data, but disregards internal corporate governance measures (e.g., ownership structure). Mitton (2002) and Lemmon and Lins (2003) develop extensive firm-level corporate governance measures, but disregard trade linkages. The question of the relative importance of firm-level vs. country-level characteristics has been previously addressed by Durnev and Kim (2004), and Klapper and Love (2003). This paper contributes to the literature by disentangling the various crisis transmission channels, and analyzes firm-, industry- and country-level measures. Overall, the paper adds to our knowledge about investor behavior during periods of external shocks.

The paper is organized as follows. Section 2 describes the sample. Section 3 presents univariate and bivariate tests of differences in stock returns, and Section 4 presents the more complete regression analysis. Section 5 offers a robustness check. Conclusions follow in Section 6.

## **2. Sample and summary statistics**

I chose to focus on the transition economies because of their geographical and historical proximity to the crisis country – Russia. The crisis offers a good opportunity to study the effects of firm-, industry-, and country-characteristics on stock returns, as it represents an external shock to the other countries in the region. The transition economies provide an interesting laboratory to study the phenomenon of how from a rather similar starting point (transition from centrally-planned economy), the countries chose very different policies and followed different trajectories of financial development.<sup>1</sup> My main hypothesis is that the severity of the Russian virus on central and eastern European companies can be linked to the achieved corporate governance systems and financial developments in each country at the time of the crisis.

The complete list of transition countries comes from Claessens et al. (2000), and includes 26 countries from central and eastern Europe and the Baltics, the CIS, and south-eastern Europe. The sample includes all firms from transition countries that are covered either by *Datastream* or *Worldscope*, and that have available stock price data prior to the Russian crisis. This results in an initial sample of 417 firms from 10 countries (Croatia, the Czech

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<sup>1</sup> See Berglöf and Pajuste (2003) for a more elaborate discussion on the “Great Divide” between countries in central and eastern Europe.



Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). By far the largest country in the region, Poland provides the highest number of sample companies (138 firms, or 33% of total). The Czech Republic, Romania, Hungary, and Lithuania follow with 82, 51, 44 and 43 companies, respectively. The Slovenian sample includes 19 companies, while Estonia and Slovakia each have 14 companies. The only two countries with less than 10 companies are Croatia and Latvia, with 3 and 9 firms, respectively. The sample covers more than 80% of total market capitalization in the ten countries in 1998.

My primary valuation measure is a firm's cumulative stock return (buy-and-hold return) over the crisis period and one year after. The short-term return is measured from the end of July 1998 to the end of August 1998, while the long-term return is from the end of August 1998 to the end of August 1999. The total return is the sum of short-term and long-term return; all returns are calculated as logarithmic differences that allow summation of returns over periods. The shortest available period for short-term returns is one month, because, in addition to data from Datastream, I incorporated stock price data from Worldscope, which provides only end-of-month prices.<sup>2</sup> I measured performance in local currency to net out any effects of exchange rates that are common to all firms within a country (the same methodology is used in Lemmon and Lins (2003)). The results, however, are very similar if I use returns in US dollars. Short-term returns were not available for 7 firms, while long-term returns for 3 firms were unavailable.

I use the five crisis transmission channels presented in Section 1 to explore which mechanisms dominated in explaining differences in stock returns across the sample countries. The five channels are, again: *product competitiveness*, an *income* effect, a *credit crunch*, a *forced portfolio recomposition*, and a *wake-up call* effect. As a measure for *product competitiveness*, I use a dummy variable that takes a value of 1 if the firm produces products that are among the two largest import categories from Russia in a given country (based on HS industry codes). Table 1 shows the two largest import categories from Russia for each country, and the respective SIC codes.

We can observe that mineral products (SIC2: 29) represent the largest import group from Russia in all countries. As a measure for *income* effect, I use a dummy variable that takes a value of 1 if the firm produces products that are among the two largest export categories to Russia in a given country. From Table 1 we can see that exporting industries are more

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<sup>2</sup> By limiting the sample to Datastream only, I would be forced to exclude all the firms that were de-listed before 2000, because price series for those firms are not available in Datastream anymore.

**Table 1. Major exports and imports with Russia**

The table reports two largest exports to Russia and imports from Russia categories in each country in 1997. The fraction of total shows the percentage of total exports/ imports in a particular country that each product group takes. Exports and imports are classified according to standard international trade classification HS codes. The respective SIC two-digit or three-digit codes are given in parentheses.

Country	Exports	Exports	Imports	Imports
	HS code (SIC code)	Fraction of total	HS code (SIC code)	Fraction of total
Croatia	XVII Vehicles, aircraft, vessels and associated transport equipment (SIC2: 37)	14.5%	V Mineral products (SIC2: 29)	85.1%
	VI Products of the chemical or allied industries (SIC2: 28)	13.1%	XV Base metals and articles of base metal (SIC2: 33-34)	7.4%
Czech Republic	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	22.4%	V Mineral products (SIC2: 29)	88.3%
	XVII Vehicles, aircraft, vessels and associated transport equipment (SIC2: 37)	18.3%	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	5.4%
Estonia	XVII Vehicles, aircraft, vessels and associated transport equipment (SIC2: 37)	81.3%	V Mineral products (SIC2: 29)	45.6%
	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	5.5%	XV Base metals and articles of base metal (SIC2: 33-34)	11.1%
Hungary	XVII Vehicles, aircraft, vessels and associated transport equipment (SIC2: 37)	24.8%	V Mineral products (SIC2: 29)	72.1
	VI Products of the chemical or allied industries (SIC2: 28)	20.3%	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	4.2%
Lithuania	V Mineral products (SIC2: 29)	38.8%	V Mineral products (SIC2: 29)	62.0%
	XVII Vehicles, aircraft, vessels and associated transport equipment (SIC2: 37)	13.6%	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	10.2%
Latvia	XVII Vehicles, aircraft, vessels and associated transport equipment (SIC2: 37)	28.5%	V Mineral products (SIC2: 29)	48.1%
	IV Prepared foodstuffs; beverages, spirits and vinegar; tobacco (SIC3: 203, 209)	19.3%	VI Products of the chemical or allied industries (SIC2: 28)	15.9%
Poland	IV Prepared foodstuffs; beverages, spirits and vinegar; tobacco (SIC3: 203, 209)	20.7%	V Mineral products (SIC2: 29)	83.1%
	VI Products of the chemical or allied industries (SIC2: 28)	17.9%	XV Base metals and articles of base metal (SIC2: 33-34)	3.0%
Romania	I Live animals; animal products (SIC2: 201)	44.5%	V Mineral products (SIC2: 29)	83.4%
	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	18.3%	XV Base metals and articles of base metal (SIC2: 33-34)	7.3%
Slovakia	X Pulp of wood or of other fibrous cellulosic material; waste and scrap of paper (SIC2: 26-27)	17.4%	V Mineral products (SIC2: 29)	79.8%
	XV Base metals and articles of base metal (SIC2: 33-34)	17.3%	XV Base metals and articles of base metal (SIC2: 33-34)	6.6%
Slovenia	VI Products of the chemical or allied industries (SIC2: 28)	37.2%	V Mineral products (SIC2: 29)	77.4%
	XVI Machinery and mechanical appliances; electrical equipment; parts thereof (SIC2: 35-36)	32.7%	XV Base metals and articles of base metal (SIC2: 33-34)	5.1%

heterogeneous than import categories. For example, machinery and mechanical appliances (SIC2: 35-36), and transportation equipment (SIC2: 37), are two common exporting industries. Although a more precise measure for *income* effect would be the estimate of direct trade exposure to Russia for each company, this information is unfortunately lacking for most of the firms in the sample. Another proxy for *income* effect is the actual sales growth in year 1998. If a firm had a substantial proportion of sales directed towards Russia, it should have experienced a drop in net sales.

As a measure for a potential *credit crunch*, I use the ratio of total loans to total assets. If a firm relies on loan financing, adverse effects on international financial liquidity can reduce the firm's ability to refinance its loans, as well as increase the cost of financing, i.e., higher interest rates. This should have a negative effect on the firm's stock performance. I use several measures to proxy the *forced portfolio recomposition* effect. Margin calls and regulatory requirements in one country can force investors to liquidate their positions in other markets to meet the short-term liquidity constraints. Institutional investors are the most likely suspects to be faced with these constraints. Lacking direct measures for institutional investor presence in a company, I assume that these investors are more likely to invest in the largest and most liquid firms in a given country. As a measure for liquidity, I use the ratio of number of days with non-zero trading volume divided by the total number of trading days in the first half of 1998 (January 1 – June 30, 1998).<sup>3</sup> Firm size is measured by the natural logarithm of net sales, in 1997.

As suggested by Johnson et al. (2000), Mitton (2002), and Lemmon and Lins (2003), the *wake-up call* effect implies that firms in countries with poorer investor protection and with weaker firm-level corporate governance should experience a larger drop in stock returns during the crisis. The causes of the crisis were different in Asia and Russia, so the *wake-up call* effect is not directly applicable to the Russian crisis. However, I hypothesize that the level of country-level and firm-level corporate governance can play a role in the persistence of a negative external shock. To account for country-level corporate governance, I included a country's *rule of law* score in 1998, from Pistor et al. (2000). The *rule of law* score is based on expert assessment reported by the Central European Economic Review, and is the closest to the ICRG *rule of law* rating used by La Porta et al. (1998). The *rule of law* score ranges from 0 to 10, with lower scores corresponding to countries with less tradition for law and order. The main proxy for firm-level corporate governance is a dummy variable that takes a

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<sup>3</sup> Results are largely identical if I use the average daily trading volume scaled by the number of shares outstanding, as a measure for liquidity.

value of 1 if there is a foreign blockholder (with at least 10% of capital), at the end of 1997. A more typical variable – managerial ownership – is not valid for our sample, because at the end of 1997, direct managerial ownership was rare. Table 2 presents the most common ownership types.

A very common owner type among the largest shareholders is a domestic financial company that, in most cases, is a privatization or restitution fund. In many of these companies, managers' power is excessively high because there is no clear owner. Therefore, it is plausible to assume that the presence of a foreign blockholder means that there is somebody monitoring, or that the company is sufficiently governed, for a foreigner to invest substantial capital. This variable also captures the very few firms that had their shares cross-listed abroad (typically, through a global depository receipt (GDR) program). The sample of firms with ownership information (125 firms) is much lower than the initial sample, because

**Table 2. Ownership type**

The table reports the number and percentage of total firms with each ownership type at the end of 1997. Ownership information comes from *Worldscope* (February 1999 disc) or company's annual report. Owners are ranked according to their share in firm's equity capital.

Ownership type	1st owner	2nd owner	3rd owner	4th owner	5th owner
Domestic private	3	3	5	.	1
Domestic company	27	17	14	7	3
Domestic financial (incl. privatization funds)	44	21	12	13	5
State	11	7	3	2	1
Employees and management	2	3	2	2	.
Other (associations)	.	.	1	1	.
Offshore	3	4	.	.	.
Foreign private	1	.	.	1	.
Foreign company	19	11	4	1	1
Foreign financial	15	30	15	10	7
<b>Total</b>	<b>125</b>	<b>96</b>	<b>56</b>	<b>37</b>	<b>18</b>
<i>Percentage of total:</i>					
Domestic private	2.4%	3.1%	8.9%	.	5.6%
Domestic company	21.6%	17.7%	25.0%	18.9%	16.7%
Domestic financial (incl. privatization funds)	35.2%	21.9%	21.4%	35.1%	27.8%
State	8.8%	7.3%	5.4%	5.4%	5.6%
Employees and management	1.6%	3.1%	3.6%	5.4%	.
Other (associations)	.	.	1.8%	2.7%	.
Offshore	2.4%	4.2%	.	.	.
Foreign private	0.8%	.	.	2.7%	.
Foreign company	15.2%	11.5%	7.1%	2.7%	5.6%
Foreign financial	12.0%	31.3%	26.8%	27.0%	38.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

ownership disclosure requirements were poorly enforced in 1997. Ownership information is collected from Worldscope (February 1999 disc) or firm's annual reports.

Summary statistics for the overall sample, and averages by country are shown in Table 3. The data show substantial variation in both short-term and long-term stock returns across countries. Average cumulative short-term returns range from -32% in Latvia to +4% in Slovakia, while long-term returns range from -76% in Latvia to +22% in Poland. On average, 13% of firms have direct sales exposure to the crisis country (exports to Russia), and 11% of firms compete with imports from Russia. All countries but Romania experienced on average positive sales growth in 1998; the median firm's sales growth was 7%. Median liquidity is 0.88, i.e., there is non-zero trading volume in 88 out of 100 trading days. Leverage, total loans to total assets, is rather low, ranging from 0.03 in Slovenia to 0.38 in Croatia. A foreign blockholder is present in about half of all firms (51%) with ownership information. The lowest *rule of law* score is in Romania (5.6), and the highest in Hungary and Poland (8.7). The median sample firm has a market capitalization of USD 19 mln.

Ownership information shows that the largest shareholder, on average, controls 42% of capital; the second largest, 15%; and the third largest, 10%. Deviations from one share - one vote are rather uncommon in the sample countries, therefore, for consistency I collected information on capital participation rather than the voting stake of the largest shareholders. Even in the few companies that have shares with differential voting rights (e.g., in Poland), the capital and voting stakes are almost identical. In this context, the ownership-to-control variables used in Mitton (2002), and Lemmon and Lins (2003), are not applicable to the sample of companies used in this paper.

### **3. Univariate and bivariate tests on stock returns**

One of the main objectives of this paper is to determine which effects – firm-level or country-level – dominated in transmitting the Russian crisis to central and eastern European companies. In particular, I want to address the question of whether non-exposed firms performed better, no matter which country they operate in. To provide some preliminary evidence, Table 4 presents univariate and bivariate comparisons of cumulative stock returns for firms located in good vs. bad corporate governance countries. I denote countries with above median *rule of law* scores as good governance countries, and the rest as bad governance countries. This classification puts the Czech Republic, Estonia, Hungary, Poland

**Table 3. Summary statistics by country**

The table shows summary statistics for 417 firms in central and eastern Europe. Short-term return is local currency log return from July 31 to August 31, 1998. Long-term return is from August 31, 1998 to August 31, 1999. Total return is the sum of short-term and long-term return. Imports from Russia is equal to 1 if the firm produces products that are among the two largest import categories from Russia in a given country in 1997 (see Table 1), and 0 otherwise. Exports to Russia is equal to 1 if the firm produces products that are among the two largest export categories to Russia in a given country in 1997 (see Table 1), and 0 otherwise. Leverage is total debt to total assets at the end of 1997. Firm size is the natural logarithm of firm's sales denominated in thousands of USD in 1997. Liquidity is the ratio of number of days with non-zero trading volume divided by total number of trading days in the first 6 months of 1998. Foreign blockholder is equal to 1 if there is a foreign shareholder holding at least 10% of capital, and 0 otherwise. Rule of law is a score that ranges from 0 to 10, with lower scores corresponding to less tradition for law and order (reported for year 1998 in Pistor et al. (2000)). Market size is the natural logarithm of country's stock market capitalization (in millions USD) at the end of 1997.

	ALL FIRMS				AVERAGE BY COUNTRY									
	Mean	Median	Standard deviation	Obs.	Croatia	Czech Republic	Estonia	Hungary	Lithuania	Latvia	Poland	Romania	Slovakia	Slovenia
<i>Dependent variables:</i>														
Short-term return	-0.20	-0.20	0.24	410	-0.29	-0.15	-0.13	-0.27	0.00	-0.32	-0.30	-0.26	0.04	-0.02
Long-term return	0.00	0.05	0.53	414	-0.14	-0.05	-0.34	-0.04	-0.31	-0.76	0.22	0.07	-0.39	0.09
Total return	-0.21	-0.17	0.53	407	-0.43	-0.21	-0.47	-0.32	-0.32	-1.08	-0.08	-0.21	-0.33	0.07
<i>Control variables:</i>														
Imports from Russia	0.11	0.00	0.32	392	0.00	0.06	0.00	0.03	0.16	0.22	0.11	0.22	0.36	0.05
Exports to Russia	0.13	0.00	0.34	392	0.67	0.06	0.00	0.23	0.12	0.33	0.11	0.12	0.29	0.26
Sales growth in 1998	0.11	0.07	0.36	293	0.37	0.07	0.12	0.24	0.20	0.00	0.23	-0.16	0.06	0.12
Leverage	0.14	0.09	0.15	297	0.38	0.20	0.18	0.12	0.20	0.16	0.08	0.11	0.30	0.03
Firm size	10.99	10.92	1.44	336	12.08	11.86	10.04	11.28	10.09	10.13	11.11	9.98	12.01	10.69
Liquidity	0.71	0.88	0.31	317	0.74	0.37	0.86	0.71	0.48	0.87	0.87	0.88	.	0.15
Foreign blockholder	0.51	1.00	0.50	125	.	0.40	0.67	0.59	1.00	0.25	0.66	.	0.60	0.00
Rule of law	7.95	8.40	1.06	417	7.00	8.30	8.50	8.70	7.20	7.50	8.70	5.60	6.40	8.40
<i>Other:</i>														
Firm market value (mn USD)	128.31	19.00	475.71	360	605.0	167.7	33.9	370.0	61.2	20.5	116.2	12.6	38.5	43.5
Market size	8.61	9.40	1.20	417	8.35	9.46	7.04	9.61	7.68	5.82	9.40	6.45	8.57	7.39
Current account balance/ GDP, percent	-5.50	-5.96	3.05	417	-14.05	-6.84	-12.17	-1.50	-10.19	-6.13	-3.86	-5.96	-9.30	0.28
External debt/ GDP	0.36	0.34	0.10	417	0.40	0.44	0.49	0.54	0.34	0.49	0.27	0.27	0.47	0.21
External debt/ Exports	0.88	0.93	0.18	417	0.97	0.77	0.63	0.97	0.62	0.96	1.06	0.93	0.83	0.48
Foreign reserves/ Imports per month	3.90	3.68	1.04	417	2.53	3.46	2.07	3.68	1.96	2.88	5.07	4.37	3.03	3.65
Growth rate of broad money, percent	32.08	29.07	29.62	417	38.41	1.66	37.79	19.72	34.07	36.99	29.07	104.99	8.69	23.31
Central budget balance/ GDP, percent	-2.52	-3.10	1.40	417	-1.30	-1.40	1.80	-4.80	-1.80	0.10	-3.10	-3.60	-2.60	-1.20

and Slovenia into the “good country” group, while Croatia, Latvia, Lithuania, Romania and Slovakia are in the “bad country” group. Simple univariate tests on equality of medians across the two groups show that short-term returns were significantly lower in good governance countries, while long-term and total returns were significantly lower in bad governance countries.

Further on, I divide the sample firms into several groups according to firm-specific characteristics and evaluate the cumulative stock returns in each of the four boxes: non-exposed firm + “good country”, non-exposed firm + “bad country”, exposed firm + “good country”, and exposed firm + “bad country”. Each of the seven pairs of firm characteristics in Table 4 starts with a group of non-exposed firms, i.e., the firms less susceptible to the Russian crisis. According to the theory, non-exposed firms: (1) do not compete with imports from Russia, (2) do not export to Russia, (3) have higher sales growth, (4) have lower leverage, (5) are smaller in size, (6) have less liquid stocks, and (7) have a foreign blockholder among the owners. Exports to Russia, imports from Russia, and foreign blockholder are all dummy variables; hence, the division into two groups is straightforward: either the variable is one or zero. The division into two groups, based on sales growth, leverage, firm size and liquidity is done by cutting the total sample into firms either above or below the median value. Following this classification, firms with sales growth above 7% are “high growth”; with leverage above 0.09 – “high leverage”; with log of sales above 10.92 – “big size”; and, with stock liquidity above 0.88 – “high liquidity”.

The univariate comparisons of cumulative short-term returns show that firms exporting to Russia, as well as larger and more liquid firms, experienced significantly sharper declines in stock prices during the one month period around the crisis. These results provide preliminary evidence that investors believe the *income effect* can affect firms with direct sales to the crisis region. Moreover, there is evidence of the *forced portfolio recomposition* effect in larger and more liquid firms that experience capital outflow due to short-term liquidity constraints of investors. The comparisons of cumulative long-term returns show that firms that did not compete with imports from Russia, firms with a foreign blockholder, as well as faster growing, larger, more liquid and less levered firms overcame the negative effects of the crisis faster, i.e., the stock returns one year from the crisis were higher. These results provide preliminary evidence that all five channels had an impact on transmitting the crisis to the CEE companies. The last three columns of Table 4 show that there is significant firm level variation in total cumulative returns. Non-exposed firms have significantly higher total returns.

**Table 4. Univariate and bivariate tests on cumulative stock returns**

The table reports median returns subdivided into categories according to exposed/ non-exposed firm-level characteristics and good/ bad country level characteristics. Short-term return is local currency log return from July 31 to August 31, 1998. Long-term return is from August 31, 1998 to August 31, 1999. Total return is the sum of short-term and long-term return. "Good countries" are the Czech Republic, Estonia, Hungary, Poland, and Slovenia, i.e., the countries with *rule of law* above median. "Bad countries" are Croatia, Lithuania, Latvia, Romania, and Slovakia, i.e., the countries with *rule of law* below median. *Rule of law* is a score that ranges from 0 to 10, with lower scores corresponding to less tradition for law and order (reported for year 1998 in Pistor et al. (2000)). Non-exposed firm category is reported in the first row of each pair of firm-level characteristics, and exposed firm category is reported in the second row. *No Imports* includes firms that do not produce products that are among the two largest import categories from Russia in a given country in 1997 (see Table 1). *No Exports* includes firms that do not produce products that are among the two largest export categories to Russia in a given country in 1997 (see Table 1). *High sales growth* includes firms that had above median (7%) sales growth in 1998. *Low leverage* includes firms that had below median (0.09) total debt to total assets at the end of 1997. *Small size* includes firms with below median (10.92) logarithm of firm's sales denominated in thousands of USD in 1997. *Low liquidity* includes firms with below median (0.88) liquidity: the ratio of number of days with non-zero trading volume divided by total number of trading days in the first 6 months of 1998. *Foreign blockholder* includes firms with a foreign shareholder holding at least 10% of capital. The third column in each return group reports the medians by non-exposed/ exposed firm category. Wilcoxon z-statistics test for differences in medians between non-exposed and exposed firms is performed. The significance level is shown next to the highest value. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

Medians	Short-term return			Long-term return			Total return		
	"Good countries"	"Bad countries"	Non-exposed Exposed firms	"Good countries"	"Bad countries"	Non-exposed Exposed firms	"Good countries"	"Bad countries"	Non-exposed Exposed firms
No Imports	-0.219	-0.108	-0.196	0.127	-0.127	0.072**	-0.133	-0.277	-0.162**
Imports	-0.295	-0.130	-0.248	-0.007	-0.357	-0.071	-0.351	-0.449	-0.397
No Exports	-0.217	-0.114	-0.194**	0.127	-0.123	0.059	-0.122	-0.288	-0.158**
Exports	-0.313	-0.132	-0.298	0.111	-0.417	0.033	-0.183	-0.276	-0.216
High sales growth	-0.230	-0.022	-0.214	0.210	-0.039	0.164***	-0.064	-0.082	-0.072***
Low sales growth	-0.214	-0.154	-0.196	0.052	-0.118	-0.004	-0.223	-0.283	-0.256
Low Leverage	-0.203	-0.250	-0.205	0.201	-0.173	0.154***	-0.042	-0.329	-0.133***
High Leverage	-0.223	-0.048	-0.192	0.064	-0.119	0.000	-0.225	-0.205	-0.223
Small size	-0.172	-0.131	-0.166***	0.086	-0.119	-0.002	-0.139	-0.277	-0.208
Big size	-0.251	-0.107	-0.237	0.182	-0.234	0.142***	-0.133	-0.288	-0.134
Low Liquidity	-0.150	0.000	-0.105***	0.051	-0.174	-0.005	-0.147	-0.261	-0.182
High Liquidity	-0.299	-0.333	-0.307	0.217	-0.118	0.158***	-0.115	-0.388	-0.157
Foreign blockholder	-0.233	0.000	-0.225	0.163	-0.058	0.153**	-0.006	-0.260	-0.072***
No-Foreign blockholder	-0.211	-0.342	-0.220	0.053	-0.524	0.042	-0.223	-0.774	-0.288
"Good" vs. "Bad" country	-0.224	-0.120***		0.118***	-0.169		-0.152***	-0.283	



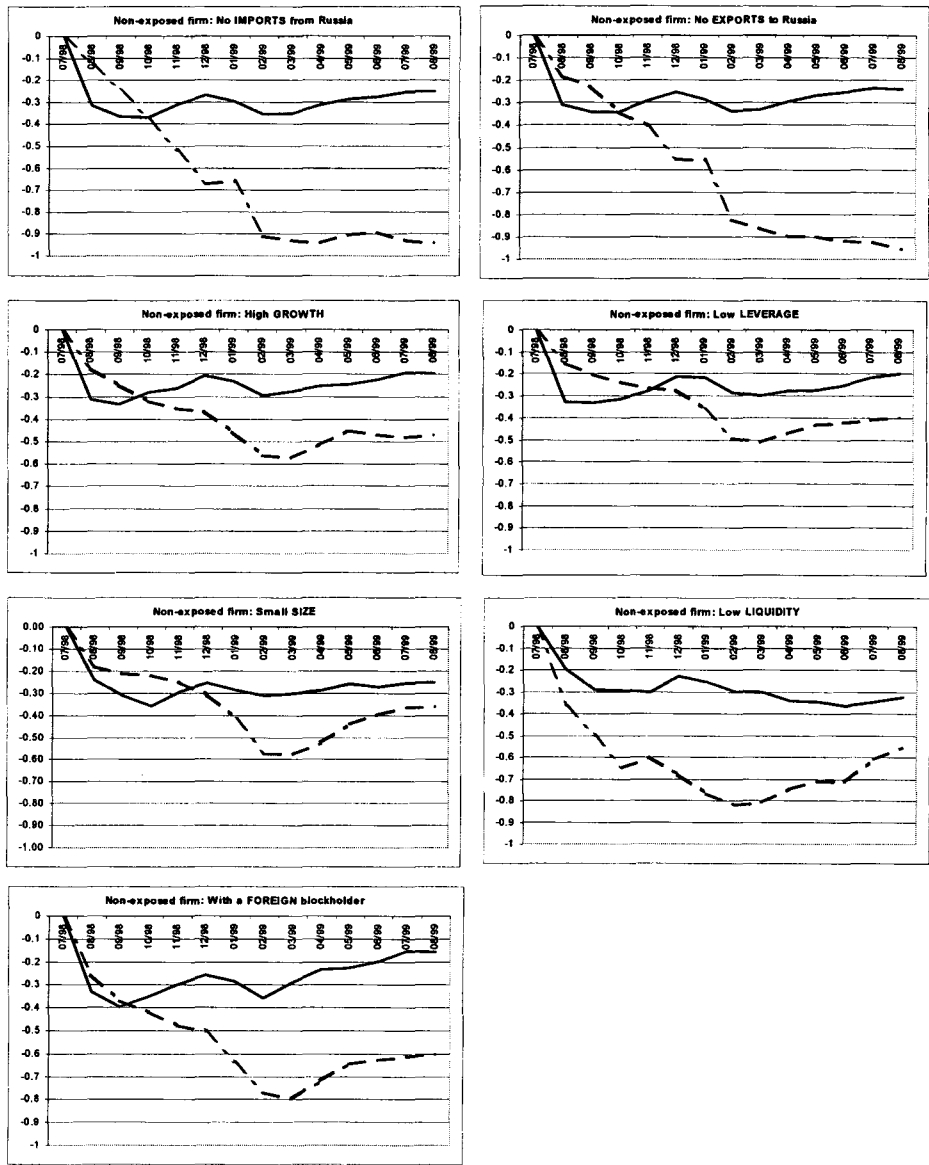
The bivariate comparisons of total returns show that non-exposed firms in “good countries” (upper left box in each two-by-two matrix) performed better than exposed firms in “bad countries” (lower right box). Most importantly, with two exceptions, exposed firms in “good countries” (lower left box) were hit less severely by the crisis than non-exposed firms in “bad countries” (upper right box), suggesting that the legal environment played an important role in overcoming the effects of the Russian virus. Only firms not competing with imports from Russia, and firms with higher sales growth in “bad countries”, experienced better stock performance than firms competing with imports from Russia and with lower sales growth in “good countries”.

Figures 1 through 7 show the performances of non-exposed firms – “good country” portfolios, and exposed firms – “bad country” portfolios, over a 13 month period from July 31, 1998 to August 31, 1999. The portfolios represent equal-weight US dollar returns (i.e., averages). The graphs show that non-exposed firms in “good countries” experienced a sharper decline initially, suggesting a more efficient information incorporation of negative news, and a faster recovery thereafter. The non-exposed firm – “good country” portfolios reached the bottom around one month after the crisis, and then followed a slight upward trend. Meanwhile, the exposed firm – “bad country” portfolios continued falling and reached the bottom around six to eight months after the crisis, if they reached bottom at all. This result corroborates the view that informational efficiency is weaker in less developed financial markets (see e.g. BenZion et al. (2003) on evidence from the Israel stock market). Moreover, short-sales constraints in most of the sample countries (in 1998) could impede the adjustment of prices to negative information (Diamond and Verracchia, 1987), even more so for firms and countries with low stock liquidity. One year after the crisis, non-exposed firm – “good country” portfolios strongly outperformed the exposed firm – “bad country” portfolios.

Figures 8 through 17 show the more interesting comparison of non-exposed firm – “bad country” portfolio returns vs. exposed firm – “good country” portfolio returns. In the short-term, exposed firms in good governance countries fell considerably more than non-exposed firms in bad governance countries. Nevertheless, the difference between these two portfolios disappears around 6-7 months after the crisis. Exposed firm – “good country” portfolios are doing as good as, or better than, non-exposed firm – “bad country” portfolios when classification is done according to imports from Russia, sales growth, firm size, liquidity and foreign blockholder. Stock prices for firms with exports to Russia and those with higher leverage in good governance countries initially fell much more than in firms without sales

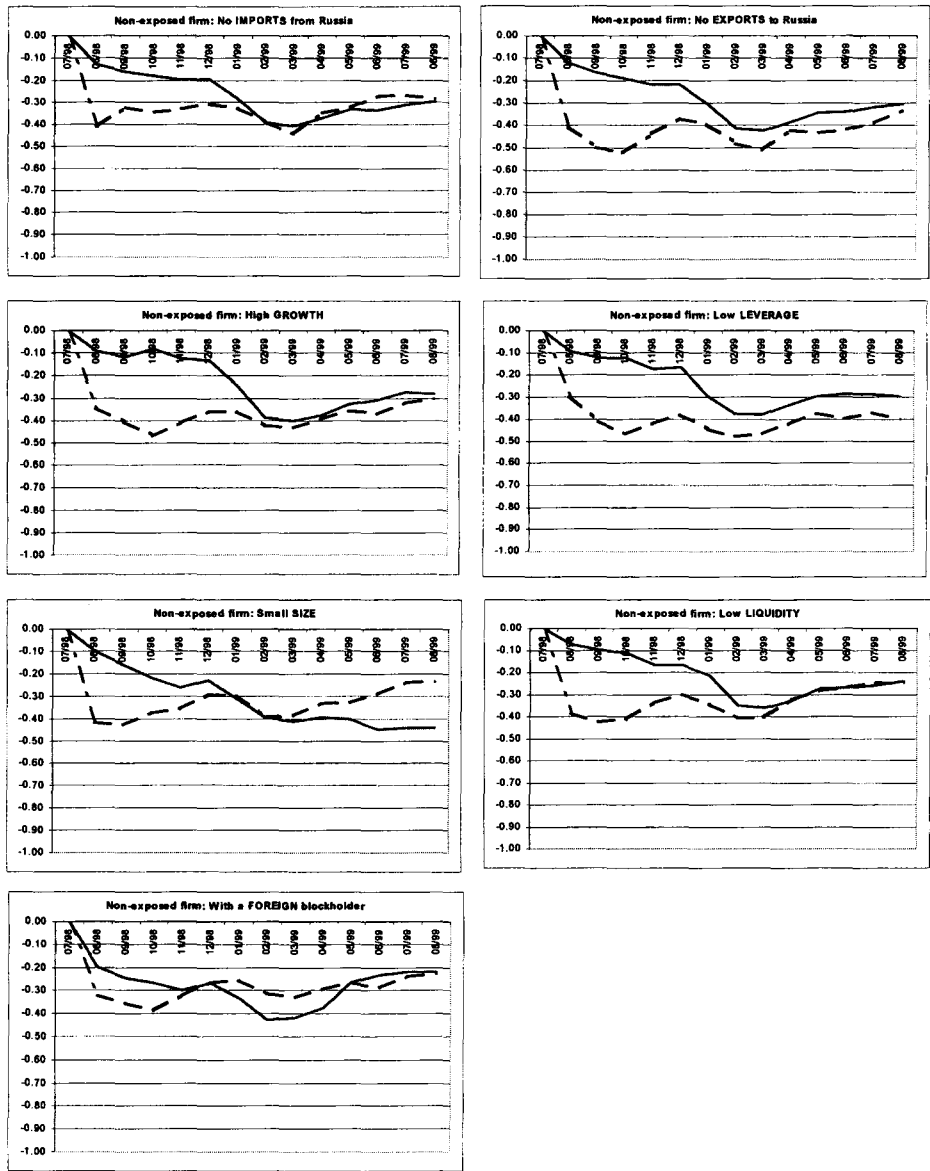
**Figures 1-7. Non-exposed firms in “Good countries” vs. Exposed firms in “Bad countries”**

The solid line represents the average cumulative returns (in US dollars) for a portfolio of non-exposed firms in good governance countries. Non-exposed firm definition is given in the title of each graph. The interrupted line represents the average returns for a portfolio of exposed firms in bad governance countries. “Good countries” are the Czech Republic, Estonia, Hungary, Poland, and Slovenia, i.e., the countries with *rule of law* above median. “Bad countries” are Croatia, Lithuania, Latvia, Romania and Slovakia, i.e., the countries with *rule of law* below median. *Rule of law* is a score that ranges from 0 to 10, with lower scores corresponding to less tradition for law and order (reported for year 1998 in Pistor et al. (2000)). Detailed description of firm-level characteristics can be found in the explanations to Table 4.



**Figures 8-14. Non-exposed firms in “Bad countries” vs. Exposed firms in “Good countries”**

The solid line represents the average cumulative returns (in US dollars) for a portfolio of non-exposed firms in bad governance countries. Non-exposed firm definition is given in the title of each graph. The interrupted line represents the average returns for a portfolio of exposed firms in good governance countries. “Good countries” are the Czech Republic, Estonia, Hungary, Poland, and Slovenia, i.e., the countries with rule of law above median. “Bad countries” are Croatia, Lithuania, Latvia, Romania and Slovakia, i.e., the countries with rule of law below median. Rule of law is a score that ranges from 0 to 10, with lower scores corresponding to less tradition for law and order (reported for year 1998 in Pistor et al. (2000)). Detailed description of firm-level characteristics can be found in the explanations to Table 4.



exposure to Russia and with lower leverage, in bad governance countries, respectively, but the difference became insignificant around six months after the crisis. These results reinforce the importance of country factors, suggesting that strong firm-level characteristics were not able to outweigh the negative effects of weak country-level characteristics.

#### 4. Regression analysis

Table 5 presents the relationship between stock performance and firm, industry and country characteristics. I use the country *random effects* specification for all regressions. In most of the cases, this specification is supported by the Breusch and Pagan (1980) Lagrange multiplier test, which rejects the null hypothesis that errors are independent within countries. An alternative specification is the country fixed effects model, but it is not feasible for this setup because there is no within-country variation in the *rule of law* score. The sign of all the other variables, however, remains intact if I use only the within-country variation in these variables. In the *random effects* specification, standard errors are adjusted to reflect the cross-correlation between within-country observations due to common country factors. This specification uses both within and between country variations in explanatory variables to estimate effects on stock returns. One could also use the industry random effects. The Breusch and Pagan (1980) Lagrange multiplier test, however, rejects the presence of industry random effects based on two-digit SIC codes.

In Table 5, I report six regressions on short-term, long-term and total returns. Regressions (1), (3) and (5) exclude the foreign ownership variable, while the other three regressions show the results of a reduced sample in which ownership data are available. Regressions (1) and (2) of Table 5 present the results on short-term returns. Results show that exports to Russia, company size and stock liquidity have negative and significant effects on short-term returns. The parameter estimates from regressions (1) imply that short-term stock returns of firms operating in industries with high sales to Russia were lower, by 21%, than short-term returns of firms in other industries. A one standard deviation increase in stock liquidity reduces the short-term returns by 12%, and a one standard deviation increase in firm size reduces the short-term returns by 6%. After controlling for firm-specific effects, the country-level corporate governance measure – the *rule of law* score – does not have a significant effect on short-term returns. All the effect is captured by firm size and liquidity which, on average, are higher in countries with higher *rule of law* scores.

**Table 5. Random-effects regressions on stock returns during and after the crisis**

The table presents results for random-effects regressions with country random effects. The dependent variables are short-term, long-term, and total returns. Short-term return is local currency log return from July 31 to August 31, 1998; long-term return – from August 31, 1998 to August 31, 1999, and total-return – from July 31, 1998 to August 31, 1999. Imports from Russia is equal to 1 if the firm produces products that are among the two largest import categories from Russia in a given country in 1997 (see Table 1), and 0 otherwise. Exports to Russia is equal to 1 if the firm produces products that are among the two largest export categories to Russia in a given country in 1997 (see Table 1), and 0 otherwise. Firm size is the natural logarithm of firm's sales denominated in thousands of USD in 1997. Liquidity is the ratio of number of days with non-zero trading volume divided by total number of trading days in the first 6 months of 1998. Leverage is total debt to total assets at the end of 1997. Foreign blockholder is equal to 1 if there is a foreign shareholder holding at least 10% of capital, and 0 otherwise. Rule of law is a score that ranges from 0 to 10, with lower scores corresponding to less tradition for law and order (reported for year 1998 in Pistor et al. (2000)). Standard errors are shown in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

Dependent variable:	Short-returns		Long-returns		Total-returns	
	(1)	(2)	(3)	(4)	(5)	(6)
Imports from Russia	<b>-0.003</b> (0.047)	<b>-0.069</b> (0.059)	<b>-0.191*</b> (0.108)	<b>-0.331**</b> (0.161)	<b>-0.194*</b> (0.113)	<b>-0.232</b> (0.164)
Exports to Russia	<b>-0.206***</b> (0.051)	<b>-0.281***</b> (0.066)	<b>-0.193</b> (0.217)	<b>0.045</b> (0.181)	<b>-0.012</b> (0.122)	<b>-0.236</b> (0.184)
Firm size	<b>-0.044***</b> (0.011)	<b>-0.023</b> (0.014)	<b>0.097***</b> (0.025)	<b>0.110***</b> (0.039)	<b>0.053**</b> (0.026)	<b>0.087**</b> (0.039)
Liquidity	<b>-0.392***</b> (0.047)	<b>-0.297***</b> (0.061)	<b>0.114</b> (0.109)	<b>-0.075</b> (0.167)	<b>-0.278**</b> (0.113)	<b>-0.373**</b> (0.169)
Sales growth in 1998	<b>-0.043</b> (0.040)	<b>0.069</b> (0.086)	<b>0.159*</b> (0.092)	<b>0.194</b> (0.236)	<b>0.116</b> (0.095)	<b>0.263</b> (0.239)
Leverage	<b>0.017</b> (0.108)	<b>0.020</b> (0.130)	<b>-0.689***</b> (0.250)	<b>-0.494</b> (0.358)	<b>-0.672***</b> (0.260)	<b>-0.474</b> (0.363)
Foreign blockholder		<b>0.024</b> (0.040)		<b>0.112*</b> (0.064)		<b>0.136</b> (0.111)
Rule of law	<b>0.003</b> (0.014)	<b>0.019</b> (0.049)	<b>0.036</b> (0.033)	<b>0.259*</b> (0.135)	<b>0.033</b> (0.034)	<b>0.279**</b> (0.137)
Constant	<b>0.523***</b> (0.129)	<b>0.043</b> (0.392)	<b>-0.733**</b> (0.297)	<b>-3.282***</b> (1.080)	<b>-0.210</b> (0.310)	<b>-3.239***</b> (1.094)
Overall R <sup>2</sup>	0.383	0.493	0.141	0.315	0.093	0.317
Number of observations	206	78	206	78	206	78

Regressions (3) and (4) of Table 5 present the results on long-term returns. Imports from Russia have a negative and significant coefficient in both specifications. The parameter estimates from regression (3) imply that long-term stock returns of firms competing with imports from Russia were lower, by 19%, than returns of other firms. Firm size has a positive and significant effect on long-term returns; a one standard deviation increase in firm size increases the long-term stock returns by 14%. There is some evidence of a *credit crunch* effect: firms with higher leverage had significantly lower long-term stock returns. As expected, sales growth had a positive effect on long-term returns. Regression (4) shows that the presence of a foreign blockholder, i.e., stronger internal corporate governance, increased the long-term stock returns by 11%. The *rule of law* score has a positive effect on long-term returns, suggesting that firms operating in countries with better corporate governance experienced a faster recovery due to stronger investor protection (consistent with Johnson et al., 2000). From regression (4), we can see that after controlling for firm-specific characteristics, a country's *rule of law* score still has substantial explanatory power in long-term stock returns.

In the last two columns of Table 5, I report regressions on cumulative total returns from the end of July 1998 to the end of August 1999. Both trade relation variables (imports from Russia and exports to Russia) have negative coefficients. Parameter estimates from regressions (5) and (6) imply that firms operating in industries that compete with products from Russia had stock returns that were lower, by around 20%, than stock returns in other firms. Firm size played a positive role in overcoming the negative effects of the crisis. Firms with higher leverage experienced lower stock returns. The significant negative effect of liquidity on stock returns can be interpreted as evidence of the *forced portfolio recomposition* effect. Firms with higher liquidity presumably have more financial investors (as compared to strategic investors) who may easily liquidate their position once faced with a liquidity constraint. The presence of a foreign blockholder had a positive effect on stock performance. Finally, the *rule of law* score had a positive effect on total returns, even after controlling for firm-specific characteristics.

These results are consistent with predictions that trade linkages, a decrease in international financial liquidity, and the level of investor protection were important mechanisms transmitting the Russian crisis to companies in transition economies. To address the interesting question of the relative importance of firm-effects vs. country-effects, I recalculate the previous regressions by adding an interaction with a dummy variable, equal to 1,

if the firm is located in a good corporate governance country. The classification into good vs. bad governance countries is the same as in Section 3.

In Table 6, regressions (1) and (2) report the tests on short-term returns, regressions (3) and (4) on long-term returns, and regressions (5) and (6) on total returns. The first regression in each pair includes only the variables that were significant in regressions reported in Table 5, and their interaction with a Good Governance dummy; the second regression includes all the variables. Regressions (1) and (2) show that the significance of the variables on short-term returns depends on both good and bad governance countries; i.e. there is not much country-level variation. The negative effect of exports to Russia is lower in good governance countries, but the difference is not significant. The negative effect of liquidity is significantly lower in good governance countries, but liquidity still has a significant *negative* effect on stock returns in good governance countries. Size effect is even more negative in good governance countries than in bad governance countries. The increase in explanatory power ( $R^2$ ), by adding the interaction variables, is very marginal – from 38.34% in regression (1) of Table 5, to 40.38% in regression (2) of Table 6. Overall, the results show that firm-specific variables are significant in explaining short-term returns in both good and bad governance countries.

Regressions (3) and (4) of Table 6 show that the effect of the explanatory variables on long-term returns differs between good and bad governance countries. In particular, the negative effect of imports from Russia, the positive effect of sales growth and the positive effect of the presence of a foreign blockholder is more pronounced in bad governance countries. Meanwhile, the negative leverage effect is more evident in good governance countries. There is a more notable increase in explanatory power ( $R^2$ ) when adding the interaction variables – from 31.46% in regression (4) of Table 5, to 44.47% in regression (4) of Table 6. In sum, the firm-specific effects seem to be more important in bad governance countries.

Regressions (5) and (6) show the results on total returns. We can again observe substantial variations between good and bad governance countries. The previously observed negative effect, from both stock liquidity and competition with imports from Russia, on total returns is driven by firms in bad governance countries. Overall, these results suggest that a “good country” label reduced the severity of the Russian virus across all firms in these countries, while firm-specific characteristics played a more significant role in countries with

**Table 6. Interactions with country-level corporate governance provisions**

The table presents results for random-effect regressions with country random effects. The dependent variables are short-term return (regressions 1 and 2), long-term return (regressions 3 and 4), and total return (regressions 5 and 6). Short-term return is local currency log return from July 31 to August 31, 1998. Long-term return is from August 31, 1998 to August 31, 1999. Total return is the sum of short-term and long-term return. Imports from Russia is equal to 1 if the firm produces products that are among the two largest import categories from Russia in a given country in 1997 (see Table 1), and 0 otherwise. Exports to Russia is equal to 1 if the firm produces products that are among the two largest export categories to Russia in a given country in 1997 (see Table 1), and 0 otherwise. Leverage is total debt to total assets at the end of 1997. Firm size is the natural logarithm of firm's sales denominated in thousands of USD in 1997. Liquidity is the ratio of number of days with non-zero trading volume divided by total number of trading days in the first 6 months of 1998. Foreign blockholder is equal to 1 if there is a foreign shareholder holding at least 10% of capital, and 0 otherwise. GOOD\_GOV is equal to one if the country's rule of law is above the median (see Table 4). Rule of law is a score that ranges from 0 to 10, with lower scores corresponding to less tradition for law and order (reported for year 1998 in Pistor et al. (2000)). Standard errors are shown in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at the 10%, 5%, and 1% levels.

	Short-returns		Long-returns		Total returns	
	(1)	(2)	(3)	(4)	(5)	(6)
Imports from Russia		<b>-0.008</b> (0.047)	<b>-0.648**</b> (0.312)	<b>-0.930**</b> (0.383)	<b>-0.318**</b> (0.141)	<b>-0.305**</b> (0.145)
Imports from Russia * GOOD_GOV			<b>0.243</b> (0.365)	<b>0.866**</b> (0.433)	<b>0.341</b> (0.221)	<b>0.364</b> (0.223)
Exports to Russia	<b>-0.219***</b> (0.069)	<b>-0.239***</b> (0.079)		<b>0.076</b> (0.173)		<b>0.001</b> (0.120)
Exports to Russia * GOOD_GOV	<b>0.043</b> (0.089)	<b>0.051</b> (0.103)				
Firm size	<b>-0.027**</b> (0.012)	<b>-0.029**</b> (0.014)	<b>0.107</b> (0.071)	<b>0.039</b> (0.081)	<b>0.005</b> (0.032)	<b>0.006</b> (0.034)
Firm size * GOOD_GOV	<b>-0.016**</b> (0.007)	<b>-0.017**</b> (0.008)	<b>-0.005</b> (0.045)	<b>0.043</b> (0.056)	<b>0.033</b> (0.021)	<b>0.031</b> (0.022)
Liquidity	<b>-0.546***</b> (0.098)	<b>-0.606***</b> (0.106)		<b>-0.087</b> (0.188)	<b>-0.656***</b> (0.236)	<b>-0.592**</b> (0.251)
Liquidity * GOOD_GOV	<b>0.219*</b> (0.114)	<b>0.279**</b> (0.125)			<b>0.389</b> (0.276)	<b>0.400</b> (0.294)
Sales growth in 1998		<b>-0.054</b> (0.040)	<b>1.338</b> (1.177)	<b>0.981</b> (1.808)		<b>0.125</b> (0.094)
Sales growth in 1998 * GOOD_GOV			<b>-1.213</b> (1.199)	<b>-0.879</b> (1.816)		
Leverage		<b>0.018</b> (0.108)	<b>1.454</b> (1.340)	<b>0.317</b> (1.292)	<b>-0.439</b> (0.450)	<b>-0.577</b> (0.474)
Leverage * GOOD_GOV			<b>-1.947</b> (1.385)	<b>-0.888</b> (1.336)	<b>0.040</b> (0.539)	<b>0.027</b> (0.566)
Foreign blockholder			<b>0.373*</b> (0.218)	<b>0.769*</b> (0.426)		
Foreign blockholder * GOOD_GOV			<b>-0.198</b> (0.339)	<b>-0.740</b> (0.542)		
Rule of law	<b>-0.006</b> (0.029)	<b>-0.017</b> (0.034)	<b>0.421</b> (0.260)	<b>0.210</b> (0.357)	<b>0.046</b> (0.031)	<b>0.025</b> (0.052)
Constant	<b>0.548**</b> (0.256)	<b>0.676**</b> (0.301)	<b>-4.697**</b> (2.388)	<b>-2.478</b> (3.139)	<b>-1.907***</b> (0.654)	<b>-1.937***</b> (0.727)
Overall R <sup>2</sup>	0.390	0.404	0.289	0.445	0.156	0.153
Number of observations	248	206	105	78	222	206



weaker corporate governance. This result is consistent with Klapper and Love (2003) and Durnev and Kim (2004), who show that firm-level corporate governance provisions matter more for firm performance in countries with weak legal environments.

## 5. Robustness check

The question arises as to what was the role of the country's macroeconomic situation at the time of the Russian crisis. To address this question, I collected macroeconomic variables in the sample countries for 1997. The main variables used in previous studies (e.g. Johnson et al., 2000) were size of the stock market, current account balance to gross domestic product (GDP), external debt to GDP, external debt to exports, foreign reserves to imports per month, growth rate of broad money, and central budget balance to GDP. The values of these variables in the sample countries are presented in Table 3.

Overall, the macroeconomic variables have a very marginal effect on stock returns. In regression analysis (not reported), most of the variables exhibit the expected signs, but only a few of them are significant. Most importantly, the inclusion of macroeconomic variables – either one-by-one or an aggregate index – does not alter any of the results discussed in the previous sections of this paper. The classification into “good” vs. “bad” countries, based on the macroeconomic situation in the countries before the Russian crisis, is very close to the classification based on the corporate governance level. The only difference is that Romania and Estonia exchange places, i.e. Romania moves to the “good country” category and Estonia, to the “bad country” category.

## 6. Conclusions

Using data from 417 firms in transition economies, I find evidence that stock performance during and after the Russian crisis varied substantially across firms and countries. The data show that firms producing in industries that compete with major imports from Russia (*product competitiveness effect*), firms producing in industries with major exports to Russia (*income effect*), firms with greater liquidity (*forced portfolio recomposition effect*), firms that are highly levered (*credit crunch effect*), firms without a foreign blockholder, and firms operating in countries with a poor record of investor protection, had significantly lower stock returns one year after the crisis. I also find a strong short-term *forced portfolio recomposition effect*: firms with presumably higher institutional investor

presence, i.e., bigger and more liquid firms, exhibited sharp short-term decreases in stock prices.

The paper provides additional evidence on the relationship between corporate governance and market efficiency. The stock prices in countries with higher *rule of law* scores incorporated the negative news about the Russian crisis much faster than stock prices in countries with lower *rule of law* scores. The data show that stock prices in good countries reached the bottom around one month after black Monday (August 17), while stock prices in bad countries continued to deteriorate for an additional five to six months.

Finally, the paper offers interesting evidence for the importance of country vs. firm effects in overcoming a crisis. I find that both firm and country level characteristics do matter; however, firm-specific characteristics play a bigger role for firms operating in countries with weak legal investor protection. There is a clear advantage of a “good country” label. During the crisis, both exposed and non-exposed firms operating in good governance countries tended to perform at least as good as, or better than, all firms in bad governance countries. Maybe that is why it took so long to realize that there are also *Enrons* in “good countries”.

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- Regelexplosionen.** Ahrne, G., Brunsson, N. (red).
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- Globalization and its Enemies**, Lundahl, M (editor).
- Hakkala, K.**, Essays on Restructuring and Production Decisions in Multi-Plant Firms.
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**Scener ur ett företag – Organiseringsteori för kunskapssamhället.** Löwstedt, J. Stymne, B.,(red).

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- Berg-Suurwee, U.**, Styrning före och efter stadsdelsnämndsreform inom kultur och fritid – Resultat från intervjuer och enkät.
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- Adler, N.**, Managing Complex Product Development.
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**Osynlig Företagsledning.** Sjöstrand, S-E., Sandberg, J., Tyrstrup, M., (red).

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