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One Share-One Vote: New Empirical Evidence¹

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Abstract. Shares with more voting rights than cash flow rights provide their owners with a disproportional influence that is often found to destroy the value of outside equity. This is taken as evidence of discretionary use of power. However, concentration of power does not necessarily result from control enhancing mechanisms; it could also be that some shareholders retain a large block in a one share-one vote structure. In this paper, we develop a methodology to disentangle disproportionality, which allows us to test the effect of deviations from one share-one vote more precisely. Our empirical findings add to the existing literature.

Keywords: Ownership structure, one share-one vote, proportionality, performance, entrenchment

JEL Classification Numbers: G32; G34

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1. Introduction

It is widely recognized that dispersed share ownership aggravates governance problems from conflicts of interests by creating a collective action problem among shareholders. Sheer numbers may rob shareholders of their power vis-à-vis the firm's management. One way to solve or at least alleviate this problem is to have a concentrated ownership structure with at least one large shareholder who has both an interest in monitoring and the power to implement changes. Jensen and Meckling (1976) show that ownership concentration has positive effect on firm value. In many firms around the world and not least in Europe, control enhancing mechanisms such as dual-class shares, pyramids, or cross-holdings promote this way of shareholder influence. At the same time concerns exist about the costs of the disproportional influence introduced by this system as it may lead to entrenchment problems (Claessens et al., 2002; Lins, 2003; Morck et al., 2005; Bennedsen and Nielsen, 2010; Gompers et al., 2010).

Reviewing the theoretical literature, Burkart and Lee (2008, p. 1) conclude that it is “an open question whether mandating one share-one vote would improve the quality of corporate governance, notably in systems that so far relied on active owners.” By the same token, Adams and Ferreira (2008, p. 84-85) conclude that “findings from the empirical literature on ownership disproportionality often disagree” but that “overall, there is some support in the literature for the hypothesis that deviations from one share-one vote affect the value of outside equity negatively.” A common presumption in this literature is to ascribe the value discount to disproportionality between voting rights and cash flow rights.

In this paper, we use this outset to study the premise of one share-one vote. Coates (2003) questions its necessity by noting that the main part of the concentration of voting power among EU firms does not result from disproportionality between cash flow rights and voting rights, but from

the fact that controlling shareholders retain a control block in a one share-one vote structure. First, we therefore develop a framework to disentangle disproportionality from a one share-one vote structure and disproportionality from control enhancing mechanisms specifically. We do this by transforming the ownership structure in firms with control enhancing mechanisms to a hypothetical one share-one vote structure and focusing on the difference between disproportionality in this structure and disproportionality in the actual ownership structure. The generality of this approach makes it readily available for all firms regardless of control enhancing mechanisms and ownership concentration as such, thus also the important US and UK markets. Second, we operationalize this framework and study the effect on the value of outside equity. To this end we use the power index developed by Shapley and Shubik (1954).

We find that disproportionality from the one share-one vote structure on average is about the same in firms with control enhancing mechanisms as in firms without, which suggests that one share-one vote can give a false sense of proportionality. However, control enhancing mechanisms do add considerable to aggregate disproportionality. In firms with such mechanisms, the aggregate disproportionality is more than doubled and the largest shareholder's influence is about three times that warranted by its investment. More important, we find that dual-class shares and pyramids significantly reduce the value of outside equity but that disproportionality from the one share-one vote structure reduces the value of outside equity much more than disproportionality from control enhancing mechanisms. The latter is an interesting finding insofar as it suggests that a uniform distribution of ownership is preferable. We also find that strong institutions alleviate these negative effects, sometimes even eliminate them.

Our results rest on the notion that proportional influence requires shareholders to have power according to their investment, which is not necessarily the case in a one share-one vote structure. Depending on the specific structure of ownership, the same voting weight can carry

different power, and disproportional influence can exist independently of control enhancing mechanisms. This is different from the one share-one vote notion of proportionality, because it emphasizes the difference between voting rights and voting power. We consider this a richer framework, but it also calls for an explicit model of the relation between voting rights and voting power. The game theoretic concept of power indices can be regarded as such a model.

The rest of the paper is organized as follows. Section 2 introduces the incentive and entrenchment effects before moving on to disentangling disproportionality. The section includes a related discussion of voting power theory. Section 3 describes the data sources from which our sample is constructed and the variables used in our empirical analyses. Section 4 presents our results and section 5 concludes.

2. Disentangling the Incentive and Entrenchment Effects

Jensen and Meckling (1976) show that as the ownership stake of owner-managers increase so does their incentives to minimize agency costs. Outside shareholders' anticipation of entrenchment effects is enough to discipline the owner-manager. This effect is often referred to as the incentive effect of ownership. In mature firms, large shareholders also have the incentive to collect information and monitor the management (Shleifer and Vishny, 1997). However, Stultz (1988) argue that as the ownership stake of owner-managers increase so does their ability to preclude takeovers, i.e., to extract private benefits of control. This effect is often referred to as the entrenchment effect of ownership. Consistent with both these effects, Morck et al. (1988) and McConnell and Servaes (1990) find a non-monotonic relationship between management ownership and firm value.

Control enhancing mechanism is a way of concentrating ownership by reducing the cost of control that this early literature does not take into account. As pointed out by Adams and Ferreira (2008), the underlying hypothesis in most of the later empirical literature is that deviations from one share-one vote reduce the value of outside equity because they allow controlling shareholders to extract private benefits, and Morck et al. (2005) note that in some instances this may even impede macroeconomic growth. Claessens et al. (2002) find that firm value increases with the cash flow rights of the largest shareholder but decreases with the wedge between voting rights and cash flow rights. Lins (2003), Bennedsen and Nielsen (2010), and Gompers et al. (2010) confirm this relationship. Studies of deviations from one share-one vote and in particular of dual-class shares allow a more clear separation of the incentive and entrenchment effect because ownership does not have to comprise both effects. Cash flow rights proxy the incentive effect and the wedge between voting rights and cash flow rights proxy the entrenchment effect.

What this approach seems not to adopt from the early studies is that even in a one share-one vote structure concentrated ownership (uneven distribution of ownership) may lead to entrenchment problems. An even more clear separation of the two effects would therefore disentangle disproportionality from the one share-one vote structure and disproportionality from the control enhancing mechanism.

2.1 DISENTANGLING DISPROPORTIONALITY

A central notion to our methodological contribution is the following: *Proportionality requires shareholders to have voting power instead of voting rights according to their investment.* With this notion we want to emphasize the difference between voting rights and voting power. It is tempting to jump to the conclusion that the power of a shareholder is proportional to her voting weight, but

there are fallacies of equating voting weight with voting power. For one thing, voting weight does not consider the relationships that are made in the course of co-operation; it ignores decision making where the outcome depends on the decisions of two or more autonomous players. For another thing, power is asymmetric. In most instances, a simple majority is sufficient to control the decision-making process. In this section, we develop a methodology based on simple weighted voting games that addresses this complexity and allows us to disentangle disproportionality from a one share-one vote capital structure and disproportionality from separating mechanisms specifically.

We begin by an example. Assume there are three shareholders, A, B and C, which share the voting rights in a firm by 45 %, 35 %, and 20 %. It seems unlikely that the distribution of power coincides with the distribution of votes when binary decisions are made by a simple majority. A quick assessment might suggest that shareholder C is the least powerful. But consider the four possible ways in which a decision can be made. Since it takes a simple majority of the votes to make a decision, shareholder A and B can vote together (80 %), shareholder A can vote with shareholder C (65 %), shareholder B can vote with shareholder C (55 %), or they can vote unanimously (100 %). Shareholder C is a member of as many winning coalitions as shareholder A and B. If we consider only the three coalitions without a redundant member, we see that because of the character of this voting system, any two of the shareholders can decide on a proposal. Even though shareholder C has fewer votes, it has as much influence over outcomes as the other shareholders. The power index of each shareholder equals 0.33 and disproportionality exists independently of control enhancing mechanisms.

2.1.1 Voting Power

Our choice of power index is motivated by the notion of power as the expected relative share of benefits available to the controlling coalition of shareholders (Felsenthal and Machover, 1998). The Shapley and Shubik (1954) power index supports this notion; it is analogous to stating that if a coalition is large enough to win, it should avoid accepting additional shareholders, since these new shareholders will demand a share of the payout without contributing essential votes to the coalition. In other words, a smaller winning coalition is preferable, because it has a larger group of shareholders from whom to expropriate. Hence, the index captures the idea of a coalition formation effect introduced in Bennedsen and Wolfenzon (2000).

Formally, shareholder i 's Shapley and Shubik (1954) power index is

$$\phi_i = \sum_{S \subseteq N, i \in S} \frac{(s-1)!(n-s)!}{n!} [v(S) - v(S \setminus \{i\})], \quad (1)$$

where s is the number of shareholders in the controlling coalition S , and n is the number of shareholders in the firm. The characteristic function v indicates the value of S in decisions that require a simple majority. We can say that shareholder i is pivotal for a particular sequence if i 's joining the coalition of all shareholders preceding i in the sequence turns this coalition from a non-winning to a winning one. The index can then be interpreted as the proportion among all such sequences ($n!$) for which shareholder i is pivotal.

2.1.2 Disproportionality

To disentangle disproportionality, we define aggregate disproportionality and its two components as follows.

$$\begin{aligned}
\text{Aggregate} &\equiv \frac{\phi_1^v}{c} \\
\text{Structural} &\equiv \frac{\phi_1^c}{c} \\
\text{Non - structural} &\equiv \frac{\phi_1^v}{c} - \frac{\phi_1^c}{c} .
\end{aligned}
\tag{2}$$

ϕ_1^v is the largest shareholder's voting power calculated from the vector of voting rights, ϕ_1^c is the largest shareholder's voting power calculated from the vector of cash flow rights and c is the cash flow rights. Voting power from voting rights considers the actual ownership structure whereas voting power from cash flow rights is constructed to consider the ownership structure had there been no separating mechanisms. Note that $\phi_1^v = \phi_1^c$ if there are no separating mechanisms. We use cash flow rights to define structural disproportionality because, in terms of voting power, this is the proper characterization of a one share-one vote structure. In line with our notion of proportionality, voting power is always divided by cash flow rights to reflect relative voting power. As we have defined disproportionality, it is by construction a proxy of the entrenchment effect. When the relative voting power is higher than 1, the largest shareholder's influence is higher than what is warranted by her investment, meaning that she does not bear all the costs of entrenched decisions.

Returning to our previous example with three shareholders (A, B and C) owning 45 %, 35 % and 20 %, respectively, we will show how the disentanglement works in the case of a firm with dual class shares. In the example, demonstrating a firm with a one share-one vote capital structure, the power index of each shareholder equaled 0.33, meaning that the largest shareholder's relative voting power equals $0.33/0.45=0.73$. Now assume that the firm has two share classes; there are 10 superior shares with 10 votes to each share and there are 100 inferior shares with 1 vote to each share (110 shares and 200 votes in total). The largest shareholder, A, owns 100 % of the superior

shares and 40 % of the inferior votes. This totals 45 % of the cash flow rights and 70 % of the voting rights. B and C own 35 % and 20 % of the cash flow rights, respectively, but only 19 % and 11 % of the voting rights. With this distribution of votes, A's power index is 1.00, meaning that A's relative voting power (aggregate disproportionality) now equals $1.00/0.45=2.22$. In other words, the largest shareholder's influence is now more than double that warranted by its investment. Disentangling this disproportionality yields a structural disproportionality equal to 0.73 and a non-structural disproportionality equal to $2.22-0.73=1.49$.

3. Data and Variables

Our ownership structure data is obtained from Faccio and Lang (2002), who record the ownership structure and control enhancing mechanisms of a large cross section of public European firms in the period from 1996 to 1999. All ownership variables used here are defined as in this database. Faccio and Lang (2002) use the weakest link principle to trace the ultimate ownership stake for those shareholders with voting weights above the country specific disclosure threshold (typically 5 %). The largest shareholder is said to be the ultimate owner if she controls 20 % directly or through a vertical chain that exceeds 20 % at all levels. In other words, they take into account the vertical ownership structure when they record the horizontal ownership structure, and this is an important characteristic of the data since many European firms use separating mechanisms such as pyramids and multiple control chains.

Our financial data is obtained from the Worldscope database. We have used firm names to match the two datasets. Accuracy of the matching procedure is enhanced by checking for changes in firm names. We have full ownership and financial data for 2,868 firms covering Austria, Belgium,

Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland and the UK. All financial variables are averages of the period from 1996 to 1998.

Voting power is the key variable for operationalizing our notion of disproportionality. Calculating the voting power of shareholders requires a complete account of the distribution of votes, but the ownership structure data only includes those shareholders with voting weights above the country specific disclosure threshold. We therefore have to make an assumption about the small shareholders unaccounted for. Two procedures can be found in the literature. One assumes that the small shareholders are not influential (they free ride because the cost of participation is too large), and the other assumes that they are influential with some positive probability. We do not want to inflict powerlessness on small shareholders by construction and thus use a finite representation, such as the one proposed by Guedes and Loureiro (2002) to approximate the actual distribution of votes.³ It simply assumes that each small shareholder holds one percent of the votes and then adds shareholders until the joint votes of all shareholders add up to one hundred percent. Calculations are carried out using a generating function algorithm as described in Leech (2002).

Table I presents descriptive statistics for the ownership structure data. On average, the voting weight of the largest shareholder is too small to control the decision-making process singlehanded. Given the structure of ownership in this sample, a 37 % voting weight translates to a 53 % probability of being pivotal. On average, the largest shareholder is thus unable to control the firm singlehanded. This is a somewhat different assessment of the largest shareholder's influence than the commonly used thresholds, which states that the largest shareholder controls the firm if she owns more than for instance 20 % of the voting rights. In our data, the largest shareholder has control in 32 % of the firms when defined as voting power equal to 1 and in 66 % of the firms when defined as more than 20 %. Table I also shows the ratio of cash flow rights to voting rights. If a firm

³ This procedure is challenged in our section on robustness.

uses separating mechanisms, this ratio is less than one, and the largest shareholders should be more influential.

Please insert Table I around here

Table II shows the result of disentangling disproportionality. We are particularly interested in non-structural disproportionality, since this is within immediate reach of the regulator. Structural disproportionality is unaffected by the control enhancing mechanisms; it is merely a consequence of the ownership structure per se. First, we see that structural disproportionality is about the same in the two sub-samples, although the difference is significantly different from zero, i.e., the hypothetical one share-one vote structure in firms with control enhancing mechanisms is more uniform than the actual structure in firms without. Second, we see that in firms with control enhancing mechanisms aggregate disproportionality is considerably increased; the influence of the largest shareholder is 2.83 times the investment compared to 1.36 in other firms, which is also a significant difference.

Please insert Table II around here

We also run a number of regressions with the market-to-book measure of Tobin's Q as our dependent variable. We calculate market-to-book as the sum of the market value of common stocks, the book value of total debt, and preferred stock, all divided by book value of total assets. Besides disentangling disproportionality, i.e., entrenchment effects, disentangling incentive and entrenchment effects is also important. The largest shareholder's wealth holding is our proxy for the incentive effect (Gugler et al., 2008). We calculate this as the largest shareholder's relative share of

cash flow rights times the market value of equity. Burkart and Lee (2008) and Adams and Ferreira (2008) also underscore the significance of institutional systems when analyzing the value effects of deviations from one share-one vote. To control for this we include the anti-director index by La Porta et al. (1998).⁴

In our regressions we also include a set of financial control variables. Morck et al. (1988) and McConnell and Servaes (1990) find that a firm's intangible assets (indicating growth opportunities) are positively related to Tobin's Q. The inverse implication must be that tangible assets are negatively related to Q. The tax argument in Modigliani and Miller (1963), the leverage-signaling argument in Ross (1977), and the free cash flow argument in Jensen (1986) all suggest that leverage is positively related to Tobin's Q. Agrawal and Knoeber (1996) find that growth opportunities and Tobin's Q are lower for larger firms, and Demsetz and Lehn (1985) find that firms' ownership structures are highly industry-depend and that Tobin's Q is highly correlated within industries. Table III presents descriptive statistics.

Please insert Table III around here

On average, firms with no control enhancing mechanisms are valued higher than firms with mechanisms. This is interesting to note prior to the multivariate analysis. As expected, the largest shareholder's wealth holding is larger in firms with no control enhancing mechanism. Finally, firms with control enhancing mechanism are bigger and belong to weaker institutional systems. There is no statistically significant difference in leverage, which is different from the US evidence presented in Gompers et al. (2010), tangibility, or sales growth.

⁴ We include the original index because of its timely overlap with our data period which is 1996 to 1998. Our results are the same if we include the revised anti-director index from Claessens et al. (2008) instead.

4. Results

Before we begin our empirical analysis, we note that Bebchuk et al. (2000) show how deviations from one share-one vote can create agency costs an order of magnitude larger than the costs associated with a controlling shareholder who also has a majority of the cash flow rights. In other words, the negative valuation effects of disproportionality from control enhancing mechanisms dominate those of disproportionality from the one share-one vote structure in their model. Our methodology offers a direct test of this.

As it is often the case with market-to-book values, they are not normally distributed (here Shapiro-Wilks test at one percent level). There are several ways to deal with non-normally distributed variables. We can trim the data, apply some robust estimation technique, or transform the data. Since we have no reason to believe that the non-normality is due to errors in the data, we rule out the first option. Since we have no reason to prefer one of the remaining two options over the other, we use of both. We use iteratively reweighted least squares as our robust estimation technique (Huber, 1981). This technique uses a maximum likelihood estimator, where case-weights are calculated from scaled residuals, i.e., the weight of outliers are reduced and the median absolute deviation is used as scale. We use natural logarithm as our transformation technique. Our results are qualitatively the same for robust estimation as for transformation; hence the latter is omitted but is available on request from the authors.

As noted by Adams and Ferreira (2008, p. 76), “an interesting question is whether any value created or destroyed by deviations from one share-one vote is a function of the degree of ownership disproportionality only or whether the mechanisms used also matter.” As a first step, we

therefore examine the effect of different control enhancing mechanisms on firm value. Table IV presents the results.

Please insert Table IV around here

Because the ownership structure is an equilibrium response to the firm's operating conditions (Demsetz, 1983; Demsetz and Lehn, 1985), the choice of separating ownership and control is subject to the different institutional systems. Thus, to allow for cross-country variation, we interact dummy variables for control enhancing mechanisms with the anti-director index.⁵

In line with previous evidence in Villalonga and Amit (2010) and Bennedsen and Nielsen (2010), we find that the mechanisms used matter. Dual-class shares and pyramids have a significant negative effect on firm value and strong institutional systems alleviate this effect: with stronger institutions the benefits of control enhancing mechanisms dominate the costs. For control chains, only the interaction effect is significant. Cross holdings do not have any significant valuation effect. We conjecture that these results have to do with the origin of the mechanisms. Bennedsen and Nielsen (2010) observe that dual-class shares are often implemented through initial public offerings,⁶ whereas pyramidal structures often arise because of acquisitions. In this context, it is therefore not surprising that dual-class shares are least detrimental and pyramids and multiple control chains most detrimental. Claessens et al. (2002) argue that complex ownership structures

⁵ We cannot also control for country effects because the two variables (anti-director index and country) are highly positively correlated, in which case standard errors are higher and their slope coefficients will tend to be highly negatively correlated. We choose the anti-director index because it provides a scaling of countries that it supposed to capture differences in institutional systems.

⁶ For the U.S., Gompers et al. (2010) observe that most dual-class firms chose their structure prior to the IPO.

and group-affiliation presumably increase opportunities for the entrenchment of large shareholders – even where ownership structures are similar to those of independent corporations. In their review of the literature on determinants of ownership structures, Adams and Ferreira (2008) find that one of the main reasons why dual-class shares are chosen is the desire of controlling shareholders to retain control without having to bear excessive cash-flow risk. Lehn et al. (1990) find that firms that wish to consolidate control but have good growth prospects prefer dual-class shares, because they can maintain a cheap source of financing.

Next step is to examine the effect of disproportionality on firm valuation. As we have argued, a simple dichotomy between firms with and without control enhancing mechanisms fails to notice an important part of the aggregate disproportionality in ownership structures, i.e., structural disproportionality. Table V presents the results. First, we note that we are able to replicate previous results on the incentive effect; the largest shareholder's wealth holding is positively and significantly related to the value of the firm. Second, we note that we are also able to replicate previous results on the entrenchment effect, although differently defined.⁷ Looking at the results for the entire sample, we find that aggregate disproportionality has a significant negative effect on firm value and that strong institutional systems alleviate this effect. We also find that structural disproportionality reduces firm value much more than non-structural disproportionality. This is an important finding because it demonstrates the fallacy of equating disproportionality and entrenchment with the mere existence of control enhancing mechanisms. Moreover, it is interesting insofar as it suggests that a uniform distribution of ownership increases firm value (because structural disproportionality is an outcome of non-uniform ownership).

⁷ If we drop our measures of disproportionality and include the wedge between voting rights and cash flow rights, we also get a negative and significant coefficient.

Please insert Table V around here

Looking at aggregate disproportionality and its two components for the entire sample may be misleading since two thirds of the firms have no control enhancing mechanisms. We may have a sample-selection bias. Looking at the results for the two sum-samples also presented in table V, we do find differences in the effects, but F-tests show that they are not different from zero, neither separately nor jointly.

Returning to Bebchuk et al. (2000), they assume that the largest shareholder owns a controlling share of voting rights and investigate the agency costs of owning a disproportional share of cash flow rights. In their model, these costs increase exponentially in disproportionality, leading them to conclude that deviations from one share-one vote can create agency costs an order of magnitude larger than the costs associated with a controlling shareholder who also has a majority of the cash flow rights. We find that, on average, it is not so much the difference between cash flow rights and voting rights for a particular shareholder as the difference in cash flow rights between shareholders that matter

4.1 ROBUSTNESS

If the disproportionality effect is an entrenchment effect, we should be able to identify an effect on operational performance as well. We therefore reproduce all the above regressions with return on assets as the dependent variable. Looking at table VI, we see that our results do not change, i.e., changing focus from the value of outside equity to operation performance does not change the results. Disproportionality affects the firm negatively and structural disproportionality affects it more than non-structural disproportionality.

Finally, we have also checked that our results are robust to other institutional variables (not reported).

Please insert Table VI around here

5. Conclusion

The main contribution of our paper is that we disentangle disproportionality from the one share-one vote structure and disproportionality from control enhancing mechanisms. A central notion of this contribution is the following: Proportionality in influence requires shareholders to have power instead of voting rights according to their investment. This distinction adds to the discussion on appropriate regulation and corporate governance related recommendations of optimal capital structures by accentuating that disproportionality is not entirely due to separating mechanisms. Empowering small shareholders with one share-one vote obviously aligns cash flow rights and voting rights, but it is not sufficient to guarantee proportional influence.

Our results are based on a large data set covering thirteen European countries. In firms with one share-one vote, we find that the largest shareholder's influence is considerably higher than that warranted by her investment. Control enhancing mechanisms obviously add to the aggregate disproportionality. In firms with control enhancing mechanisms, the largest shareholder's influence is about four times that warranted by her investment. We also find that both our measures of disproportionality have negative effects on the value of outside equity. Somewhat surprising, structural disproportionality causes the largest value discount. In other words, the value destroying behavior of controlling owners is primarily due to the non-uniform distribution of ownership. The potential costs of control enhancing mechanisms are undisputable, they lever the degree of control

and thus the potential extraction of private benefits, but it appears that the potential benefits are important to remember; especially in countries with good institutional quality and high investor protection. Our results show that the value discount decreases significantly as institutional quality improves. Control enhancing mechanisms may help balance the power between shareholders and managers, but, as noted by Black and Kraakman (1996), the validity of the one vote-one share rule depends primarily on its ability to match economic incentives with voting power.

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Table I. Descriptive statistics for ownership data

This table presents mean values of four ownership characteristics. All values are for the largest shareholder. Voting (cash flow) rights is the largest shareholder's share of the voting (cash flow) rights. Voting power is the largest shareholder's Shapley value. We calculate wedge as cash flow rights/voting rights.

Country	N	Voting rights	Voting power	Cash flow rights	Wedge
Austria	80	0.53	0.76	0.47	0.84
Belgium	81	0.39	0.60	0.35	0.80
Finland	85	0.35	0.49	0.29	0.80
France	428	0.50	0.73	0.48	0.95
Germany	398	0.52	0.71	0.47	0.87
Ireland	45	0.23	0.31	0.21	0.81
Italy	136	0.49	0.75	0.38	0.70
Norway	105	0.28	0.40	0.23	0.82
Portugal	62	0.43	0.69	0.40	0.91
Spain	102	0.40	0.57	0.38	0.94
Sweden	171	0.27	0.38	0.21	0.78
Switzerland	123	0.48	0.73	0.36	0.75
UK	1,052	0.25	0.34	0.23	0.88
All countries	2,868	0.37	0.53	0.33	0.86

Table II. Disentangling disproportionality

This table presents mean values of structural and non-structural disproportionality for firms with and without control enhancing mechanisms. We calculate disproportionality as voting power/cash flow rights, where voting power is the largest shareholder's Shapley value and cash flow rights is the largest shareholder's share of the cash flow rights. For structural disproportionality, we use voting power from the vector of cash flow rights. For non-structural disproportionality, we use voting power from the vector of voting rights.

Country	No control enhancing mechanism			Control enhancing mechanism		
	<i>N</i>	Structural	Non-structural	<i>N</i>	Structural	Non-structural
Austria	46	1.47	0.00	33	1.42	1.79
Belgium	58	1.52	0.00	23	1.19	4.98
Finland	41	1.37	0.00	44	1.20	0.78
France	362	1.46	0.00	66	1.32	1.21
Germany	266	1.36	0.00	132	1.32	0.95
Ireland	31	1.29	0.00	14	1.07	3.51
Italy	57	1.54	0.00	79	1.31	3.01
Norway	71	1.31	0.00	34	1.19	1.57
Portugal	53	1.53	0.00	9	1.21	4.12
Spain	88	1.36	0.00	14	1.25	1.28
Sweden	108	1.29	0.00	63	1.18	1.91
Switzerland	52	1.46	0.00	71	1.39	2.10
UK	733	1.27	0.00	319	1.18	1.08
All countries	1,967	1.36	0.00	901	1.25	1.58

Table III. Descriptive statistics for financial data

This table presents mean, median, and standard deviation of financial firm characteristics. We calculate market-to-book as (market value of common stocks+total debt+preferred stock)/total assets. We calculate wealth holding as the largest shareholder's relative share of cash flow rights times the market value of equity. The anti-director index is an integer between 0 and 5. We calculate leverage as total debt/total assets and tangibility as 1-(intangible assets/total assets). Sales growth is growth in sales for the previous year.

	No mechanisms (N=1967)			Mechanisms (N=901)			Difference <i>p</i> -value
	Mean	Median	Std.	Mean	Median	Std.	Mean
Market-to-book	1.28	0.90	1.39	1.14	0.88	1.13	0.01
Wealth holding	292	30	1,779	173	22	570	0.05
Anti-director index	3.37	3.00	1.56	3.12	3.00	1.66	0.00
Sales	819	112	3,413	1,357	189	3,821	0.00
Leverage	0.23	0.19	0.19	0.22	0.20	0.20	0.54
Tangibility	0.95	1.00	0.12	0.95	1.00	0.12	0.68
Sales growth	0.57	0.11	7.35	0.45	0.10	4.82	0.67

Table IV. The effect of control enhancing mechanisms on firm value

This table reports the coefficient estimates from robust regressions of dummy variables for different control enhancing mechanisms on market-to-book. Please refer to previous tables for variable definitions. Standard errors are in parentheses. Note: ***, **, and * indicate that the coefficient estimates are statistically significantly different from zero at the 1 %, 5 %, and 10 % level.

	(1)	(2)	(3)	(4)
Dual-class shares	-0.114*** (0.042)			
Dual-class shares*anti-director index	0.037*** (0.011)			
Pyramids		-0.107*** (0.040)		
Pyramids*anti-director index		0.045*** (0.010)		
Cross-holding			-0.133 (0.153)	
Cross-holding*anti-director index			0.063 (0.069)	
Chain				-0.134 (0.084)
Chain*anti-director index				0.044** (0.021)
ln(Sales)	-0.041*** (0.004)	-0.042*** (0.004)	-0.043*** (0.004)	-0.043*** (0.004)
Leverage	0.266*** (0.043)	0.268*** (0.043)	0.260*** (0.043)	0.266*** (0.043)
Tangibility	-0.181*** (0.069)	-0.197*** (0.069)	-0.169** (0.070)	-0.176** (0.070)
Sales growth	0.001 (0.001)	0.001 (0.001)	0.000 (0.001)	0.001 (0.001)
Constant	1.363*** (0.095)	1.368*** (0.095)	1.368*** (0.096)	1.374*** (0.096)
Industry effects	Yes	Yes	Yes	Yes
Number of observations	2,868	2,868	2,868	2,868
R ²	0.187	0.191	0.182	0.183

Table V. The effect of disproportionality on firm value

This table reports the coefficient estimates from robust regressions of disproportionality on market-to-book. Please refer to previous tables for variable definitions. The sample in columns (1) and (2) is all firms. The sample in column (3) is firms with no control enhancing mechanisms and in columns (4) and (5) it is firms with mechanisms. Standard errors are in parentheses. Note: ***, **, and * indicate that the coefficient estimates are statistically significantly different from zero at the 1 %, 5 %, and 10 % level.

	(1)	(2)	(3)	(4)	(5)
Aggregate	-0.021*** (0.006)			-0.017*** (0.006)	
Aggregate*anti-director index	0.011*** (0.002)			0.010*** (0.002)	
Structural		-0.140*** (0.030)	-0.127*** (0.037)		-0.207*** (0.057)
Structural*anti-director index		0.019*** (0.004)	0.016*** (0.005)		0.025*** (0.008)
Non-structural		-0.012* (0.007)			-0.009 (0.007)
Non-structural*anti-director index		0.007*** (0.003)			0.006** (0.002)
Wealth holding	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
ln(Sales)	-0.044*** (0.004)	-0.043*** (0.004)	-0.043*** (0.006)	-0.053*** (0.007)	-0.050*** (0.007)
Leverage	0.283*** (0.043)	0.291*** (0.043)	0.277*** (0.055)	0.275*** (0.070)	0.291*** (0.069)
Tangibility	-0.189*** (0.069)	-0.209*** (0.069)	-0.258*** (0.088)	-0.111 (0.113)	-0.137 (0.112)
Sales growth	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.001 (0.007)	0.002 (0.007)
Constant	1.320*** (0.095)	1.443*** (0.103)	1.507*** (0.131)	1.242*** (0.155)	1.416*** (0.175)
Industry effects	Yes	Yes	Yes	Yes	Yes
Number of observations	2,868	2,868	1,967	901	901
R^2	0.199	0.206	0.446	0.243	0.256

Table VI. The effect of disproportionality on operating performance

This table reports the coefficient estimates from robust regressions of disproportionality on return-on-assets. Please refer to previous tables for variable definitions. The sample in columns (1) and (2) is all firms. The sample in column (3) is firms with no control enhancing mechanisms and in columns (4) and (5) it is firms with mechanisms. Standard errors are in parentheses. Note: ***, **, and * indicate that the coefficient estimates are statistically significantly different from zero at the 1 %, 5 %, and 10 % level.

	(1)	(2)	(3)	(4)	(5)
Aggregate	-0.009*** (0.001)			-0.006*** (0.001)	
Aggregate*anti-director index	0.004*** (0.000)			0.003*** (0.000)	
Structural		-0.031*** (0.004)	-0.027*** (0.005)		-0.035*** (0.007)
Structural*anti-director index		0.009*** (0.001)	0.009*** (0.001)		0.011*** (0.001)
Non-structural		-0.002* (0.001)			-0.001 (0.001)
Non-structural*anti-director index		0.001*** (0.000)			0.001*** (0.000)
Wealth holding	0.000* (0.000)	0.000*** (0.000)	0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)
ln(Sales)	0.001** (0.001)	0.002*** (0.001)	0.003*** (0.001)	0.001 (0.001)	0.003*** (0.001)
Leverage	-0.057*** (0.006)	-0.051*** (0.006)	-0.060*** (0.007)	-0.041*** (0.010)	-0.036*** (0.010)
Tangibility	-0.008 (0.009)	-0.015* (0.009)	-0.031*** (0.012)	0.019 (0.015)	0.011 (0.014)
Sales growth	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)	-0.000 (0.001)
Constant	0.046*** (0.013)	0.048*** (0.013)	0.059*** (0.017)	0.023 (0.020)	0.018 (0.021)
Industry effects	Yes	Yes	Yes	Yes	Yes
Number of observations	2,868	2,868	1,967	901	901
R^2	0.180	0.228	0.204	0.248	0.339