

# The value of corporate voting rights and control: A cross-country analysis<sup>☆</sup>

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Received 15 March 2001; received in revised form 7 March 2002

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## Abstract

This paper measures the value of corporate voting rights, specifically of the control block of votes, in a sample of 661 dual-class firms in 18 countries, in 1997. A consistent measure across countries is proposed. The measure is adjusted for takeover probability, block-holding costs, and dividend and liquidity differences between the share classes. The value of controlblock votes varies widely across countries. It is close to half of firm market value in South Korea, and close to zero in Finland. The value of control-block votes is interpreted as a lower bound for actual private benefits of the controlling shareholder. The legal environment, law enforcement, investor protection, takeover regulations, and power-concentrating corporate charter provisions explain 68% of the cross-country variation in the value of control-block votes.

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*JEL classification:* G30, G32, G34, G38, K22

*Keywords:* Corporate control; Voting premium; Dual-class firms; Takeover laws; Investor protection

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## 1. Introduction

Parties in control of a corporation are in a position to extract private benefits of control that do not accrue to dispersed shareholders. Theoretical work on private benefits of control is well developed. Early work such as [Berle and Means \(1932\)](#) and

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<sup>☆</sup>I am grateful to Alexandre Aganine, Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, Mike Lubrano, Elena Ranguelova, Andrei Shleifer, and Daniel Wolfenzon, for helpful suggestions and insightful comments.

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Jensen and Meckling (1976) emphasizes the agency problem between managers and shareholders.

Private benefits of control by dominant firm owners are the focus of Grossman and Hart (1988), Bebchuk (1999) and Shleifer and Wolfenzon (2002), among others. Examples of such benefits are influence over who is elected on the Board of Directors or in the CEO position, the power to build business empires, and the ability to transfer assets on nonmarket terms to related parties or consume perquisites at the expense of the firm. The corporate finance literature has proven the existence of private benefits using diverse approaches and data. Section 2 in Shleifer and Vishny (1997) overviews this subject matter. Examples are studies of returns around proxy fights (Dodd and Warner 1983) and studies of legal cases (Johnson et al., 2000). Empirical work has then proceeded to identify a measure of the magnitude of private benefits, in studies of block trades and vote premium studies.<sup>1</sup>

This paper focuses on the vote-value approach to private benefits. The value of a vote is linked to the extraction of private benefits by controlling shareholders in Zingales (1994), Rydqvist (1996) and Modigliani and Perotti (1998). The logic is that a controlling shareholder competing for control is willing to pay to minority vote-owners a positive price for their votes at the time of a control contest, up to her expected value of control. The restrictive assumptions of this argument may render the researcher uncomfortable with the empirical link between private benefits and vote value. In that case, vote value can permit the identification of a lower bound of control benefits.

Empirical investigations of vote value exist only for individual countries, in view of the country-level divergence in security-voting and legal structures. However, a country-specific setup foregoes country-level determinants of the value of control-block votes, such as laws and regulations, which can have important explanatory power. This work proposes a consistent approach to cross-country data and is careful in assuring the comparability of the vote-value measure cross-country.

The cross-country approach to vote value makes it possible to study the effect of the differences in legal environment and investor protection on the value received by minority investors. The issue fits into the law and finance literature summarized by La Porta et al. (2000b). La Porta et al. (1997), (1998) provides evidence on the link between laws and financial development, while Claessens et al. (2000) discusses the effect of laws on ownership structures. La Porta et al. (2000a), (2002) describe the impact of the legal environment on dividend policies and corporate valuation, respectively. One of the early works illustrating the link between vote value and investor protection is Modigliani and Perotti (1997). Using the few available vote premium measures from existing single-country studies, the authors find a strong negative correlation between stock market development and the investment-related

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<sup>1</sup>Examples of block trade studies are Barclay and Holderness (1989), and Dyck and Zingales (2002). Vote value studies exist for Canada (Jog and Riding, 1986; Robinson and White, 1995; Smith and Amoako-Adu, 1995), Israel (Levy, 1982), Italy (Zingales, 1994), South Korea (Chung and Kim, 1999), Sweden (Rydqvist, 1996; Bergstrom and Rydqvist, 1990, 1992), Switzerland (Horner, 1988), UK (Megginson, 1990), and US (Lease, McConnell, and Mikkelsen, 1983; Zingales, 1995).

laws reflected in the vote premium. The present work explores in depth the relation between the legal framework and vote and control value.

This paper measures the total value of all votes composing the control block (assumed to be 50% of the voting power). This quantity will be referred to as “the value of control-block votes” for short. The market value of a marginal corporate vote is calculated implicitly from multiple- and limited-voting share prices. I further isolate sources of corporate share value not related to the vote, e.g., dividend payment differences and liquidity differences between the two classes of shares. The sample includes all dual-class firms listed on the 30 largest national capital markets in the world. [Table 1](#) summarizes the list of countries and the number of sample firms from each country. Dual-class firms are frequent in Brazil, Canada, Denmark, Finland, Germany, Italy, Norway, Korea, Mexico, Sweden, and Switzerland. A smaller proportion of listed firms have dual-class structure in Australia, Chile, France, Hong-Kong, South Africa, the UK, and the US. Dual-class firms are also allowed by law in India, but none is covered in DATASTREAM, the database used in this paper. Differentiation in voting rights is forbidden by law in Belgium, China, Japan, Singapore, and Spain. In China foreign-owned shares lose their voting power. In Spain, different classes of shares are allowed, but the voting power needs to be proportional to cash flows. In the Netherlands nonvoting shares must be convertible into voting. Preferred shares in Indonesia, Malaysia, Philippines, Taiwan, and Thailand have a fixed dividend and are redeemable. In other words, they are closer to debt than equity.

The value of control-block votes is significant in magnitude and varies widely across countries. Control-block votes are valued at more than a quarter of company market capitalization in Brazil, Chile, France, Italy, Mexico, and South Korea. In contrast, the value of control-block votes in Scandinavian and Anglo-Saxon countries is close to zero. Germanic countries such as Switzerland and Germany exhibit a value of control-block votes of around 10% to 15% of company market value. Since value of control-block votes is a lower bound for actual private benefits of the controlling shareholder, the latter are even higher. In Brazil, for example, a 50% vote-owner can hold as little as one-sixth of the total cash-flow rights, but the expected benefit from control is at least double that amount (33.3% of the value of the firm) on average.

Control-block votes are significantly less valuable given a stricter legal environment. To illustrate, the average (unadjusted) value of control-block votes is 4.5% in common law countries and 25.4% in French legal origin countries, where investor protection is weaker. This finding is consistent with the hypothesis that parties in control of a corporation can extract private benefits to the exclusion of dispersed shareholders. The weaker laws lower expropriation costs thus encouraging higher control benefits, which in turn pushes up the value of control-block votes. Quality of investor protection, takeover rules on pricing and mandatory offers, corporate charter provisions, and the extent of law enforcement explain 68% of the systematic variation in the value of control-block votes. The impact of investor protection laws and control transfer regulations are of comparable magnitude, but proper enforcement is key. For example, the value of control-block votes is 48% of

Table 1

## Sample composition by country

Countries are listed by stock market capitalization in 1995 in millions of US\$. The third column gives the number of firms included in the sample by country, which comply with the following conditions: (1) there are at least two publicly traded share classes, with unequal voting per cash-flow rights; (2) both classes are listed on a domestic exchange and traded during the period January 1 to December 31, 1997; (3) the limited-voting class is not convertible into the multiple-voting class; and (4) neither class receives a fixed dividend, independent of that of the other class nor is redeemable or callable at the option of the firm at a pre-set price.

Country	Stock market capitalization	DATASTREAM dual-class firms
United States	6,857,622	39
Japan	3,667,292	0
United Kingdom	1,407,737	27
Germany	577,365	65
France	522,053	9
Switzerland	433,621	37
Canada	366,344	65
Netherlands	356,481	0
Hong Kong	303,705	5
South Africa	280,526	22
Australia	245,218	3
Malaysia	222,729	0
Italy	209,522	62
Spain	197,788	0
Taiwan	187,206	0
Korea (Rep. Of)	181,955	65
Sweden	178,049	43
Singapore	148,004	0
Brazil	147,636	141
Thailand	141,507	0
India	127,515	0
Belgium	104,960	0
Mexico	90,694	5
Chile	73,860	7
Indonesia	66,585	0
Philippines	58,859	0
Denmark	56,233	30
Norway	44,587	15
Finland	44,138	21
China	42,055	0
Saudi Arabia	40,961	0
Argentina	37,783	0
Israel	36,399	0
Austria	32,513	13
New Zealand	31,950	2
Luxembourg	30,443	1
Ireland	25,817	0
Turkey	20,772	1

firm value on average in the case of a widely held firm that operates in a “worst case” legal environment (i.e., where the four legal variables take their lowest in-sample values). An improvement of law enforcement from the lowest to the highest in-sample value decreases the value of control-block votes to 31%. This figure drops further down to 20% if investor protection is raised from lowest to highest in-sample value. The same improvement in takeover rules takes the value of control-block votes down to 8%. Finally, moving from full to no use of power-concentrating charter provisions takes the value of controlblock votes down to 5%.

The paper transfers focus from the value of a single vote, the voting premium, to the value of control-block votes in the aggregate. The link between the two magnitudes can depend on regulations in the market for corporate control, as well as on the general legal environment and firm-specific charter provisions. I make those factors explicit by proposing a list of institutional, regulatory, as well as firm-level determinants of the value of control-block votes. The paper provides a comprehensive description of several relevant regulations of the market for corporate control, as well as a taxonomy of relevant firm-level corporate charter provisions. The study considerably expands the number of countries where vote premiums are measured. Finally, the results demonstrate that differences in dividend payouts, liquidity, and other nonvote-related characteristics of the two classes of shares have a significant effect on the measurement of vote value and failure to use proper controls can lead to biases.

The paper proceeds as follows. Section 2 discusses the estimation of the value of controlblock votes and identifies the appropriate control variables. Section 3 presents and tests determinants of the value of control-block votes. Section 4 concludes.

## 2. Valuation of control-block votes and identification of control variables

The estimation of vote value is based on the general theoretical framework put forth by Grossman and Hart (1988) and extended for the case of dual-class firms by several studies, such as Zingales (1994, 1995), Rydqvist (1996), and Nenova (2001).

A marginal vote does not confer any control rights to a dispersed shareholder, due to coordination issues, asymmetric information, etc. Yet a marginal voting share will be valued higher than the verifiable cash-flow rights it confers, provided two things. First, that control is valuable to a large shareholder. Second, there is a positive probability that such a block-holder will demand marginal votes in order to attain control. In other words, vote value can be realized when the vote is sold to a shareholder for whom control carries a positive value. Control typically means the ownership of a sufficient voting power to take decisions on important company matters. Here the threshold is assumed (without loss of generality) to be 50% of the votes. The market value of a marginal vote at any time equals the expected discounted equilibrium value of a vote at the time of a control contest. The expectation is taken with respect to the probability of a differentiated bid-control contest where a given marginal vote is actually sold to a contestant.

A simple example can be used to illustrate the valuation of a marginal vote. Assume a widely held firm has a verifiable cash flow of one thousand dollars and one hundred shares, half of which carry one vote each and the remaining half carry no voting power. In the absence of private benefits, each share, regardless of its vote, will trade at \$10. Let the firm exist for two periods, no discounting. In period two, there are two contestants for the control of that firm, who value control at \$100, over and above the verifiable cash flow of the firm. In this case the optimal control-winning bid is \$350 for 50% of the voting shares (25 shares with a total verifiable cash flow of \$250). An owner of a marginal voting share will receive \$14 per share in period two. Let the probability that such a contest happens in period two be 100%. A voting share is demanded by a control contestant in period two with a 50% probability. Therefore, in period one a vote is valued at \$2, voting shares trade for \$12, whereas nonvoting shares are priced at \$10.

Note that the value of a vote itself is not directly observable, but needs to be backed out from the prices of multiple- and limited-voting shares. In this simple example, the two classes of shares carry exactly the same verifiable cash flows per share of \$10. One could envisage that in reality each class pays a specific dividend, different from that of the other class. The liquidity of the classes will differ as well, thereby introducing further cash flow differences. Other potential controls are discussed in Section 2.3. Once I control for such nonvote-related differences in the characteristics of the share classes, I can use the market price of a nonvoting share as a measure of the verifiable cash flows of a voting share, or \$10. The premium value of a voting share over and above \$10 is interpreted as the expected discounted vote value, \$2. Possibly the most significant empirical challenge is to correctly control for the probability of a differentiated-bid control contest. This correction permits us to back out the per-share vote value at control contest time, \$4. Aggregating vote values across the control block is then trivial (25 votes are needed for control, valued at \$4 each), to arrive at the total value of control of \$100.

In order to link the vote to control benefits as this example does, one needs to assume a competitive control market, a firm with dispersed ownership, and a fixed mechanism for control changes. In that case, the control contestants pay for control up to their expected private benefits from control, and each vote demanded in the control contest receives an equilibrium price equal to total private benefits per control-block vote. Several vote-value studies adopt this interpretation. The assumptions required for this result are restrictive, however, and the discussion at the end of this section relaxes some of the assumptions. A more conservative viewpoint will claim that vote value permits the identification of a lower bound of the benefits of control, since a control contestant would never pay for control more than their expected control benefits.

In sum, the value of control-block votes, backed out from multiple- and limited-voting share prices, is identified after controlling for the probability of the votes being demanded during a control change, and nonvote-related sources of share value, e.g., block-holding costs, dividend payment, and liquidity differences between the shares classes. The vote-value measure and the controls are discussed below.

### 2.1. The value of control-block votes

The sample includes all listed dual-class firms covered by DATASTREAM in the 30 countries with largest stock markets by 1995 market capitalization, 661 firms. Dual-class firms are defined in Table 2. DATASTREAM is a financial information service with wide international coverage of firms. Firm-level data is collected from company sources (annual reports, filings with the national stock exchange, business data gathering agencies).<sup>2</sup>

The value of control-block votes is calculated from the prices of multiple- and limited-voting shares, adjusted to comprise 50% of the voting power, and scaled by the firm market value. The computation formula is given in Table 2, and is derived in Nenova (2001). There are three sample firms, all in Switzerland, with more than two listed classes of shares, each class with different voting power. In those three cases, I select the bearer class and the nonvoting class, and drop the registered class, in view of ownership and transferability restrictions on the latter.

The vote value measure aggregates votes, instead of focusing on a single vote, since comparisons of the value of a single vote are not informative across firms and countries. In particular, the value of a marginal vote is not independent of the concentration of voting power in each multiple-voting share, of the relative number of shares in each class, and of the size of the corporation. To illustrate the first of the three issues, take again the example of a firm where the votes of the control block are worth \$100. In the original example there are 50 voting and 50 nonvoting shares, control is achieved with 25 votes, and each of those votes is valued at \$4. Compare that to a case where there are only ten voting and 90 nonvoting shares, so that control is achieved with five votes and each vote is worth \$20. Therefore, a correct comparison requires the computation of the value of all votes in the control block. This overall measure of the value of voting power needs to be further scaled, for example, by firm market value, in order to get a quantity independent of firm size and other characteristics. This approach focuses attention on the substantial determinants of the value of control-block votes, rather than the mechanical determinants such as the number of multiple-voting shares that the company happens to have issued.

Table 3 summarizes the value of control-block votes as a share of total firm value across all sample countries. Since some countries are overrepresented in the sample, and can have undue influence on the results, I test using medians. Except for the smallest country samples, the median value of control-block votes is significantly different from zero in all countries. Median value of control-block votes in Canada, Denmark, Finland, Sweden, and the US is below 1% of the total value of the company. On the other end of the spectrum, median value of control-block votes in Australia, France, Italy, South Korea, and Mexico is around one quarter or more of company value. The value for Australia is an outlier for common law countries; however, the estimate is based on three firms and should be treated with caution. The simple average value of Hong Kong control-block

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<sup>2</sup>A list of all sources by country is available from the author upon request.

Table 2  
Description of variables

Dual-class firm	A dual-class firm complies with the following conditions. First, there are at least two publicly traded share classes, with unequal voting per cash-flow rights. Second, both classes are listed on a domestic exchange, and traded during the period January 1 to December 31, 1997. Third, the limited-voting class is not convertible into the multiple-voting class. Convertibility in the reverse direction is allowed, since the multiple-voting class typically trades at a premium, so the convertibility option from multiple-voting is out-of-the-money. Fourth, neither class receives a fixed dividend, independent of that of the other class nor is redeemable or callable at the option of the firm at a preset price (such securities look like debt).
Total value of control-block votes as a share of firm market value	$= [P_M(t) - P_L(t)] / (1 - k) * ([N_M + N_L * k] / 2) / [N_M * P_M(t) + N_L * P_L(t)]$ , averaged over all $t$ (52 weekly observations). $P_M(t)$ and $P_L(t)$ are the weekly prices of the multiple and limited-voting shares, $N_M$ and $N_L$ are the number of multiple and limited-voting shares, and $k$ is the ratio of the voting power of a limited- to a multiple-voting share. Prices are Friday close, January 1 to December 31, 1997, from DATASTREAM, from the last trade or an official price fix from the main domestic exchange. For shares not listed on the main exchange, I use regional market prices. Prices are adjusted for subsequent capital changes. I accommodate restructuring of security-voting arrangements during the sample period by using only the data prior and up to the acquisition or share withdrawal.
Rule of law	Assessment of the law and order tradition in the country produced by the country risk-rating agency <i>International Country Risk</i> (ICR), 1982 to 1995. Rescaled 0 to 1, with higher values indicating stricter rule of law. Source: La Porta et al. (1998).
Investor protection	Averages six indicator variables of general investor protection: (1) 1 if shareholders are allowed to mail their proxy votes, (2) 1 if the shares are blocked before a general shareholder meeting, (3) 1 if cumulative voting is allowed in the law, (4) 1 if oppressed minority provisions are incorporated in the law, (5) 1 if shareholders enjoy a preemptive right over future issues, and (6) 1 if the vote percentage required to convene an extraordinary shareholder meeting is at or below 10%. Higher values indicating better protection. Source: La Porta et al. (1998).
Takeover regulations	Averages three variables of investor protection during a corporate control contest: (1) 1 if the legal code requires a control contestant to offer all classes the same tender price, zero otherwise; (2) 1 if the legal code requires a buyer of a large or majority block to pay minority shareholders the same price as for the block shares by share class, zero otherwise; and (3) 1 minus the level of ownership at which a dominant vote-owner is legally required to make an open market bid for all shares, zero if there is no such provision in the law. Higher values indicate stricter takeover law. Sources: International Society of Securities Administrators (1997), Takeover code, Company Law, Securities Law, Economist Intelligence Unit 1997.
Charter provisions	Aggregates six charter provisions that concentrate power in the hands of dominant shareholders: (1) golden shares, i.e., special decision-making rights of dominant shareholders; (2) coattails, i.e., a provision that the limited-voting shares become convertible into multiple-voting at the time of a control change; (3) poison pills, i.e., provisions that make it costly for outsiders to purchase large stakes; (4) voting caps, i.e., an upper limit on the votes that a single shareholder can cast; (5) the right of the Board of Directors to limit transfer of shares; and (6) the right of limited-voting shares to attain full voting power in

Table 2. (Continued)

	case of dividend nonpayment, sale of assets, or excessive concentration of voting power to cash-flow rights. Rescaled from 0 to 1, with higher values indicating less power concentration with the controlling party. Source: company filings, stock exchange publications, Moody's.
Shapley value	The Shapley value measure is the continuous version for oceanic games (Milnor and Shapley 1978). The Shapley value solution of a voting game reflects the payoff or value of participating players, measured as the extent to which each player is pivotal to the voted decision. The ownership data is for all shareholders with 5% of the shares or more. Reporting requirements in some countries are higher than 5% (e.g., 25% in Germany), however, the sources for all sample countries usually identify all block owners. For example, in Germany the median firm blockholders hold 75% of the voting power. Company ownership structures data is from company filings, stock exchange publications, Moody's.
Firm size	= $\ln$ {firm market value/stock market capitalization of the corresponding country}.
Dividend ratio	The excess dividend payment to a limited- over a multiple-voting share, scaled by the total dividend to a limited-voting share. In 37 cases firms do not announce a dividend policy, so I extrapolate from past dividend history. Data from Annual Reports, stock exchange data, Moody's, Worldscope.
Cumulative LV dividend	= 1 if dividend payments to a limited-voting share are cumulative.
Registration costs for MV	= 1 if the multiple-voting class has registration costs which do not apply to the limited-voting class.
Log difference in Turnover	= $\ln$ (limited-voting turnover/multiple-voting turnover). Turnover is the ratio of the average daily trading volume of the class over all business days, to the number of shares outstanding in 1996. The Datastream data refer to shares traded on the main exchange, except in the US, where volumes are summed over all exchanges on which the shares are listed. Sources: Datastream, Bloomberg (Finland, South Africa).

votes is negative. The vote value measured in Table 3 is unadjusted and scaled by the probability of a control change. All Hong Kong firms are majority owned, and their probability of control change is low (or zero). Thus, the unadjusted measure of vote value will be low (or zero). In fact, the Hong Kong vote value is impossible to estimate after controlling for firm characteristics (this is done in Table 4), since the probability measure used in this work, the Shapley value, has a value of zero.

Table 3 presents the sample countries divided by legal origin, as defined in La Porta et al. (1998). Median value of control-block votes is highest in French civil law countries (22.6%), followed by German civil law countries (11.0%). Common law and Scandinavian civil law countries score the lowest, with 1.6% and 0.5%, respectively. Such low value of control-block votes in Scandinavian countries can seem surprising, considering the civil origin of the law. Agnblad et al. (2001) advance the following explanation for the case of Sweden. They state that controlling parties are law-abiding, so that “concerns about reputation and social status have a

Table 3

Comparison of mean value of control-block votes to firm market value, raw figures

Mean and median value of control-block votes as a share of firm value, 661 firms, 1997, by legal origin.

Significance:  $a = 1\%$ ;  $b = 5\%$ ;  $c = 10\%$ .

		Value of control-block votes/Firm value Mean (two-tailed $t$ -statistic)	Median	Number of observations
<i>Common law</i>	Australia	0.2320 <sup>c</sup> (3.5384)	0.2594	3
	Canada	0.0276 <sup>a</sup> (3.2704)	0.0047 <sup>a</sup>	65
	Hong Kong	-0.0288 (1.9353)	-0.0152	5
	South Africa	0.0672 <sup>b</sup> (2.4586)	0.0308 <sup>a</sup>	22
	UK	0.0957 <sup>a</sup> (5.0751)	0.0721 <sup>a</sup>	27
	US	0.0201 <sup>b</sup> (2.4051)	0.0071 <sup>a</sup>	39
<i>Common law average</i>		0.0447 <sup>a</sup> (6.3352)	0.0157 <sup>a</sup>	161
<i>French civil law</i>	Brazil	0.2319 <sup>a</sup> (12.5585)	0.1475 <sup>a</sup>	141
	Chile	0.2314 <sup>c</sup> (1.6466)	0.0257	7
	France	0.2805 <sup>a</sup> (6.5915)	0.2747 <sup>a</sup>	9
	Italy	0.2936 <sup>a</sup> (13.8837)	0.2993 <sup>a</sup>	62
	Mexico	0.3642 <sup>a</sup> (37.5729)	0.3652 <sup>b</sup>	5
<i>French origin average</i>		0.2539 <sup>a</sup> (18.2927)	0.2261 <sup>a</sup>	224
<i>Scandinavian civil law</i>	Denmark	0.0084 <sup>c</sup> (1.7556)	0.0029 <sup>b</sup>	30
	Finland	-0.0503 (0.8749)	0.0052 <sup>c</sup>	21
	Norway	0.0583 <sup>b</sup> (2.9655)	0.0438 <sup>a</sup>	15
	Sweden	0.0104 <sup>b</sup> (2.3211)	0.0043 <sup>a</sup>	43
<i>Scandinavian origin average</i>		0.0048 <sup>c</sup> (0.4037)	0.0052 <sup>a</sup>	109
<i>German civil law</i>	Germany	0.0950 <sup>a</sup> (6.5319)	0.0493 <sup>a</sup>	65
	Korea (Rep. of)	0.2894 <sup>c</sup> (1.9620)	0.6000 <sup>a</sup>	65
	Switzerland	0.0544 <sup>b</sup> (2.3675)	0.0147 <sup>b</sup>	37

Table 3. (Continued)

<i>German origin average</i>		<i>0.1616<sup>a</sup></i> <i>(2.7780)</i>	<i>0.1103<sup>a</sup></i>	<i>167</i>
Tests of equality of distributions (medians), <i>T</i> -statistics:				
English vs. French	–11.732 <sup>a</sup>	French vs. Scandinavian	12.294 <sup>a</sup>	
English vs. Scandinavian	3.399 <sup>a</sup>	French vs. German	–1.751 <sup>a</sup>	
English vs. German	–6.571 <sup>a</sup>	German vs. Scandinavian	–7.813 <sup>a</sup>	

disciplining effect on their behavior, discouraging minority abuse.” The value of control-block votes in all four groups of countries is significantly different from zero. Table 3 presents tests of equality of distributions among the value of control-block votes in the four groups of countries. Median values of control-block votes in all groups are significantly different from one another.

## 2.2. The probability of a control contest

The simple example at the beginning of this section illustrates the need to control for the probability of the votes being demanded during a control change, as well as nonvote-related sources of share value, in order to correctly back out the value of control-block votes from multiple- and limited-voting share prices. This section focuses on empirical difficulties in measuring and controlling for the probability of a control contest. Section 2.3 discusses dividends, liquidity, and block-holding costs. Section 2.4 addresses some further empirical problems such as survivorship bias and the time behavior of vote value. Finally, Section 2.5 undertakes the estimation of the value of control-block votes.

Traditionally, the vote-value literature proxies the probability of a takeover using ownership-based variables. Studies of acquisition likelihood have advanced other major determinants, however, in addition to ownership structure. These additional determinants could include performance and firm-level characteristics (e.g., industry indicators) and specifics of the takeover setup (e.g., takeover rules and takeover defenses).

The probability of a control contest is inversely related to the ownership concentration of the firm. A typical measure of the control-change probability is the voting stake of the largest or several dominant vote-owners. That fails to account for the number, composition, and interaction between the vote-holders. A Herfindahl index controls for the number and composition of owners, but the Shapley value measure in addition corrects for vote-holder interaction (Milnor and Shapley, 1978). The reported results use the Shapley value control. I repeat all tests with a Herfindahl index of ownership concentration, the voting stake of the incumbent dominant vote-owner, the cumulative voting stake of the five largest vote-owners, and a majority ownership dummy. The results are not sensitive

Table 4

Cross-country estimation of mean value of control-block votes to firm market value

OLS regressions with country dummies, I–IV include all firms, V includes only firms with nonvoting shares; VI includes only firms with equal dividends for both classes. The dependent variable is value of control-block votes to firm market value. Variables are defined in Table 2. The controls are expressed in deviations from their respective country means. Huber/White errors in parentheses. Significance:  $a = 1\%$ ;  $b = 5\%$ ;  $c = 10\%$ . Data for 618 firms, 1997.

	I.	II.	III.	IV.	V.
Australia	0.2320 <sup>a</sup> (0.0356)	0.2320 <sup>a</sup> (0.0373)	0.2320 <sup>a</sup> (0.0355)	0.2320 <sup>a</sup> (0.0200)	
Brazil	0.2301 <sup>a</sup> (0.0183)	0.2301 <sup>a</sup> (0.0183)	0.2301 <sup>a</sup> (0.0183)	0.2305 <sup>a</sup> (0.0179)	
Canada	0.0275 <sup>a</sup> (0.0081)	0.0275 <sup>a</sup> (0.0080)	0.0275 <sup>a</sup> (0.0081)	0.0323 <sup>b</sup> (0.0149)	0.0251 <sup>a</sup> (0.0087)
Chile	0.2314 <sup>c</sup> (0.1331)	0.2314 <sup>c</sup> (0.1332)	0.2314 <sup>c</sup> (0.1332)	0.1567 (0.1137)	0.2314 <sup>c</sup> (0.1336)
Denmark	0.0084 (0.0058)	0.0084 (0.0058)	0.0084 (0.0059)		0.0092 (0.0068)
Finland	-0.0002 (0.0236)	-0.0003 (0.0238)	-0.0002 (0.0237)		0.0207 (0.0205)
France	0.2805 <sup>a</sup> (0.0399)	0.2805 <sup>a</sup> (0.0406)	0.2805 <sup>a</sup> (0.0401)	0.2805 <sup>a</sup> (0.0395)	0.2665 <sup>a</sup> (0.0417)
Germany	0.0949 <sup>a</sup> (0.0145)	0.0949 <sup>a</sup> (0.0145)	0.0949 <sup>a</sup> (0.0145)	0.0949 <sup>a</sup> (0.0145)	0.0747 <sup>a</sup> (0.0252)
Hong Kong	-0.0288 <sup>b</sup> (0.0132)	-0.0288 <sup>b</sup> (0.0132)	-0.0288 <sup>b</sup> (0.0132)		-0.0550 <sup>a</sup> (0.0203)
Italy	0.2887 <sup>a</sup> (0.0211)	0.2888 <sup>a</sup> (0.0211)	0.2887 <sup>a</sup> (0.0211)	0.2884 <sup>a</sup> (0.0212)	
Korea (Rep. of)	0.4772 <sup>a</sup> (0.0669)	0.4772 <sup>a</sup> (0.0670)	0.4772 <sup>a</sup> (0.0670)	0.4758 <sup>a</sup> (0.0673)	
Mexico	0.3642 <sup>a</sup> (0.0098)	0.3642 <sup>a</sup> (0.0098)	0.3642 <sup>a</sup> (0.0099)	0.3642 <sup>a</sup> (0.0104)	
Norway	0.0630 <sup>a</sup> (0.0200)	0.0630 <sup>a</sup> (0.0201)	0.0630 <sup>a</sup> (0.0201)	0.0625 <sup>a</sup> (0.0203)	0.0461 <sup>a</sup> (0.0096)
South Africa	0.0672 <sup>a</sup> (0.0244)	0.0672 <sup>a</sup> (0.0244)	0.0672 <sup>a</sup> (0.0244)	0.0591 <sup>a</sup> (0.0177)	0.0594 <sup>b</sup> (0.0231)
Sweden	0.0104 <sup>b</sup> (0.0046)	0.0104 <sup>b</sup> (0.0046)	0.0104 <sup>b</sup> (0.0046)		0.0104 <sup>b</sup> (0.0051)
Switzerland	0.0561 <sup>b</sup> (0.0234)	0.0561 <sup>b</sup> (0.0235)	0.0567 <sup>b</sup> (0.0229)	0.1215 <sup>a</sup> (0.0381)	0.0568 <sup>b</sup> (0.0234)
UK	0.0957 <sup>a</sup> (0.0172)	0.0957 <sup>a</sup> (0.0172)	0.0957 <sup>a</sup> (0.0172)	0.1067 <sup>a</sup> (0.0210)	0.0921 <sup>a</sup> (0.0179)
US	0.0201 <sup>b</sup> (0.0079)	0.0201 <sup>b</sup> (0.0079)	0.0201 <sup>b</sup> (0.0079)	0.0162 (0.0125)	0.0164 <sup>b</sup> (0.0082)
Shapley value	0.0640 <sup>b</sup> (0.0307)	0.0641 <sup>b</sup> (0.0307)	0.0658 <sup>b</sup> (0.0309)	0.0884 <sup>c</sup> (0.0468)	0.0580 <sup>b</sup> (0.0251)
Firm size	-0.0024 (0.0041)	-0.0023 (0.0041)	-0.0024 (0.0041)	0.0001 (0.0053)	-0.0096 <sup>a</sup> (0.0031)
Log difference in turnover	-0.0152 <sup>a</sup> (0.0040)	-0.0153 <sup>a</sup> (0.0041)	-0.0152 <sup>a</sup> (0.0040)	-0.0147 <sup>a</sup> (0.0041)	-0.3792 (0.4156)
Dividend ratio	-0.2176 <sup>a</sup> (0.0548)	-0.2192 <sup>a</sup> (0.0552)	-0.2175 <sup>a</sup> (0.0549)	-0.4986 <sup>a</sup> (0.0924)	

Table 4. (Continued)

Cumulative dividend for limited-voting			–0.0134 (0.0311)		
Registration costs for multiple-voting			–0.0326 (0.0370)		
Number of Observations	618	618	618	425	286
Adjusted R squared	57.28%	57.21%	57.22%	59.37%	34.61%

to the choice of probability control. Alternatively, I use an extended set of probability controls, which includes ROE, sales growth, leverage, and industry dummies (not reported). This list of controls for probability is based on empirical results from [Palepu \(1986\)](#), [Billett \(1996\)](#), [Barber et al. \(1999\)](#), [Nuttall \(1999\)](#), and [Cudd and Duggal \(2000\)](#). While none of the extra measures are significant, the results are maintained. The effect of takeover specifics on takeover probability is captured in the tests below by the takeover variable. This effect is examined in [Malatesta and Walkling \(1988\)](#), and [Harris and Raviv \(1988\)](#). As a second approach to identifying the independent effect of takeover probability, I run a fixed effects (within) regression to eliminate the effect of takeover rules (which are the same within each country).

[Walkling \(1985\)](#) finds that a bidder's toehold increases the probability of takeover success. In this sample, the voting stake of the second largest stakeholder has an insignificant effect on vote value. [Meeker and Joy \(1980\)](#) suggest that an unstable controlling coalition will increase the likelihood of a change in control. I test this proposition on coalitions among all family members who hold shares in the firm, but the results lack significance (not reported). The tests are inconclusive, since the data identifying coalition members in the sample countries is incomplete. The relation between ownership and takeover likelihood could be nonlinear, since high vote ownership also increases the control contest premium that the incumbent can afford to pay (or bargain for). In this sample there are no significant nonlinearities, however (tests not reported).

The Shapley value is defined in [Table 2](#). A higher cumulative Shapley value of all dispersed shares, i.e., a lower ownership concentration, increases the likelihood of a control contest. The measure takes a value of zero in a majority controlled firm and one in a widely held firm. In a firm with a single 30% owner the Shapley value of the float is 0.57 instead of 0.70, capturing coordination costs of dispersed voters. Another appealing property of the Shapley value of the free float is that it increases as the stakes of the major shareholders become comparable. Shapley value averages by country are given in the last column of [Table 5](#) and range from zero in Hong Kong (i.e., all companies are majority owned) to 0.73 in South Korea, where there are legal restrictions on ownership. Shapley values are higher in Anglo-Saxon and Scandinavian countries, since ownership is relatively more dispersed.

Table 5  
Country-level legal environment and takeover provisions  
The takeover rules index is defined in Table 2 and is based on the values of the indicators in columns 2 to 4. Charter rules and Shapley values are averaged over all sample firms in the country (columns 6 and 7). The value of the charter provision index decreases with power concentration in the hands of the incumbent.

	Mandatory offer threshold	Same price for all classes in a tender offer?	In a tender offer, does the minority get the same price as the control block, by class?	Takeover Rules Index	Charter Provision Index	Shapley value
<i>Common law countries</i>						
Australia	20%	0	0	0.20	0.50	0.18
Canada	20%	1	1	0.70	0.53	0.31
Hong Kong	35%	1	1	0.66	0.50	0.00
South Africa	30%	1	1	0.68	0.50	0.17
UK	30%	0	1	0.43	0.50	0.23
US	None	0	0	0.00	0.62	0.23
<i>Common law average</i>	—	0.50	0.83	0.44	0.52	0.25
<i>French tradition civil law countries</i>						
Brazil	None	0	0	0.00	0.34	0.08
Chile	None	0	0	0.00	0.36	0.05
France	33%	0	1	0.42	0.33	0.15
Italy	10%	0	0	0.23	0.36	0.23
Mexico	None	0	0	0.00	0.30	0.15
<i>French average</i>	—	0.00	0.20	0.13	0.34	0.13
<i>Scandinavian tradition civil law countries</i>						
Denmark	50%	1	1	0.63	0.60	0.20
Finland	67%	1	0	0.33	0.57	0.42
Norway	45%	0	1	0.39	0.50	0.45
Sweden	None	0	1	0.25	0.58	0.38
<i>Scandinavian average</i>	—	0.50	0.75	0.40	0.56	0.35
<i>German tradition civil law countries</i>						
Germany	50%	0	0	0.13	0.52	0.10
Korea (Rep. Of)	10%	0	0	0.23	0.08	0.73
Switzerland	33%	0	0	0.17	0.54	0.27
<i>German average</i>	—	0.00	0.00	0.17	0.38	0.32

### 2.3. Block-holding costs and security-value differences between the share classes

A further determinant of the value of control-block votes are the costs associated with financing a large block, participating in a control contest, and bearing idiosyncratic risk when holding a large stake in the firm. Those costs increase with firm size and are negatively related to the value of control-block votes. Firm size could also have an independent effect on vote value since, for example, larger firms are more scrutinized and it is costlier to extract private benefits. The measure of firm size used here is company market value relative to the national stock market size (defined in Table 2).

Differences in dividends and liquidity can cause mis-measurement of vote value. For example, if the limited-voting class receives higher dividends than the multiple-voting class, the price difference between the two classes is smaller compared to the case of equal dividend payments, all else constant. Definitions of the dividend and liquidity controls are in Table 2. I also explore (and report some results) on foreign ownership restrictions, tax treatment, costs of share registration, and convertibility provisions for multiple- into limited-voting shares. Note that convertibility in the opposite direction is not allowed in the sample.

### 2.4. Survivorship bias and time behavior of vote value

The sample represents a snapshot of dual-class companies at a point in time, which raises concerns about survivorship bias. Specifically, companies that delist may systematically differ in their vote value (e.g., the firms with most valuable control eventually delist). To alleviate survivorship bias, the sample includes companies or classes withdrawn from the market between January 1, 1997 and January 1999 (the date of constructing the sample). If those firms systematically differ from the sample, adding them back reduces the bias. A more compelling correction would be to use all dual-class firms listed over a long period of time. DATASTREAM data availability prior to 1995 is constrained to few countries, however.

This study adopts a cross-sectional perspective in its examination of the relationship between the value of control-block votes and its legal and ownership structure determinants, due to the time stability of both regulations and block-holdings. The lack of a time dimension begs the question of the time behavior of vote value. The issue has not been extensively covered in the previous literature. However, indicative results suggest that, on the country level, vote values are stable in time. Megginson (1990) examines 152 listed dual-class UK firms during 1955 to 1982 and finds that the vote premium is stable in time. Individual firm vote-values, on the other hand, increase at the time of a contest over company control, due to the higher probability of a marginal investor to realize the value of the votes owned. Rydqvist (1996) presents data on the surge in vote value in four Swedish dual-class listed companies that are subject to a takeover during 1983 to 1990. Proper control for the probability of a takeover is called for. Country-level results will further alleviate the problem, provided takeover activity is uncorrelated across firms and industries.

The second factor that is advanced in the literature as affecting the time behavior of vote values are legal and regulatory changes. Smith and Amoako-Adu (1995) find that around the time of the reform in Toronto Stock Exchange regulations, which imposes mandatory coattail provisions for all listed firms in 1987, the average vote value of listed Toronto firms increases from 4.2% in the period 1981 to 1986 to 6.4% in the period 1998 to 1992. Nenova (2000) examines the jump in average control value of listed Brazilian firms in response to the 1997 reform of the corporations law and finds that control value doubles. Since this work focuses on the relation between control value and laws, I assure the contemporaneous correspondence of the two measures.

### 2.5. Estimation of the value of control-block votes

Table 3 does not control for takeover probability, block-holding costs, and security value between the multiple- and limited-voting classes. Table 4 presents adjusted vote value, and for comparability to Table 3, the controls are expressed as deviations from the respective country means. The value of control-block votes is significant in magnitude, and varies widely across countries. The highest average value of control-block votes are in South Korea (48% of firm value) and Mexico (36%). If one adopts the view that the value of control-block votes is at least as high as the private benefits of control, then on average, South Korean controlling shareholders appropriate close to one-half of the value of the company. Similarly, high average value of control-block votes is found in Australia (23%), Brazil (23%), Chile (16% to 23%), France (27% to 28%), and Italy (29%).<sup>3</sup> In Scandinavian and Anglo-Saxon countries, control-block votes are of very little value. In Denmark, Finland, and Sweden, the value of control-block votes is 1% or less of the market capitalization of firms. The value of control-block votes goes up to 4% in the US and up to 7% in Canada. The Hong Kong estimate is discussed in detail above in the comments on Table 3. The estimates are generally significant, with the exception of Denmark and Finland, where vote value is almost zero.

The controls are of the expected signs, and significant, with the exception of firm size. Alternative controls for security-value differences, namely the indicators for cumulative dividend and for registration costs of multiple-voting shares, do not prove to be of statistical significance, and render virtually unchanged results (Regressions II and III). The results are similar if one includes indicators for guaranteed minimum dividend for the limited-voting class, preference of limited-voting shares, or convertibility for multiple-voting shares (not reported). The bid-ask spread proxy for liquidity differences (not reported) limits severely the sample size due to missing values, but otherwise renders similar results. The effect of foreign ownership restrictions is insignificant in country-level tests (not reported). Country-wide foreign ownership restrictions on the multiple-voting class are in force in Brazil, Chile, France, South Korea, and Mexico. Firms in Australia, Norway, and Switzerland are allowed to impose foreign ownership restrictions at will. In the

<sup>3</sup>Note that the estimate for Australia is based on 3 observations and therefore precision suffers.

regressions to follow, I keep only the excess dividend ratio and the liquidity controls since they capture security value differences well.

The remaining regressions perform robustness checks. Regression IV restricts the sample to firms whose limited-voting shares carry no vote. In this case, the specification of the value of control-block votes measure hinges minimally on assumptions. Regression V isolates firms with equal dividend policies for the two classes. The coefficients remain stable.

Available vote-value measures in the literature are not strictly comparable to the measure used in this work. As noted, existing studies measure the value of a single vote, as opposed to the value of control-block votes. Thus Italy and the US have vote-value measures of 82.7% and 12.5%, respectively, controlling for takeover probability, dividends, liquidity, and firm size (Zingales 1994 and 1995).<sup>4</sup> One needs to make heavy assumptions in order to render these numbers comparable to the results in Table 4. Going through such an exercise, the single vote-value measures quoted above correspond to values of control-block votes of 39% for Italy and 2.9% to 4.6% for the US. The corresponding measures in Table 4 are 28% and 1%.

The value of a single vote in the UK is 10.6% controlling for voting power relative to cash-flow rights of the multiple-voting class, insider holdings, and firm size, but not for liquidity (Megginson 1990).<sup>5</sup> In terms of the value of control-block votes, this could translate into anything from 2% of firm value (if the limited-voting shares carry no voting rights) to 19% (if the voting power of multiple- to limited- voting shares is 3:4, for example). Average vote ratios for the UK are unavailable. The range of those estimates illustrates the demanding nature of the assumptions needed in order to render these results comparable to the single-vote studies in the literature. Using the value of a single vote instead of the value of all control-block votes impairs comparability of results, as the above figures show. Studies of other countries do not report sufficient information to compute comparable measures. Single vote values are also available for Canada, 19.3% (median 6.4%), Korea, 9.6% (median 9.3%), Sweden, 12%, and Switzerland, 1.2%.<sup>6</sup>

### 3. Determinants of the value of control-block votes

The results in Table 3 suggest a role for the legal environment in determining vote value. This paper examines the effect of investor protection generally, takeover laws, law enforcement, and corporate charter provisions that alter shareholder control rights.

<sup>4</sup>The US data is 1984 to 1990, and calculations use results in Regression III, Table 4 and summary statistics in Table 2, assuming the ratio of voting power is in the range between one to five votes and zero to one votes. For Italy, data is for 1987 to 1990, and calculations use Table 2, pooled regression, and the summary statistics in Table 1.

<sup>5</sup>Table 1, summary statistics and Table 4, regression with 1970 to 1977 prices.

<sup>6</sup>The data for Canada is based on 1988 to 1992 data, Table 1, Smith and Amoako-Adu (1995); for Korea, on 1992 to 1993 data, Table 3, Chung and Kim (1999); for Sweden, on 1983 to 1991 data, Table 1, Rydqvist (1996); and for Switzerland, on 1983 data, Table 1, Horner (1988).

### 3.1. Law enforcement

Strict law enforcement and good general investor protection laws increase the likelihood of a lawsuit and therefore a monetary or reputation loss to a controlling party who is in a position to extract private benefits. That in turn decreases the control premium that parties vying for control are willing to pay marginal vote-owners, implying a negative relationship between better laws and the value of control-block votes. I use the measure for rule of law from [La Porta et al. \(1998\)](#), and define it in [Table 2](#). The results are stable when using alternative measures of law enforcement suggested by [La Porta et al. \(1998\)](#) which include efficiency of the judiciary, accounting standards, and corruption.

### 3.2. Investor protection

Investor protection provisions, such as disclosure and accounting standards, or the availability of an oppressed minority mechanism, uphold minority investor value and are thus negatively related to the value of the control-block votes. However, some sections of the law can be expressly directed at one class (e.g., dividend pay-out rules or voting and representation rules). The effects of such rules on the voting premium can be ambiguous, since there are two forces at work. First, investor protection curbs value transfers from minority shares of that class to the controlling entity, which translates into a lower vote value. Second, there may be a certain degree of substitutability of value transfers between the two share classes, in the sense that the less protected class shoulders some of the value loss experienced by the controlling entity as a result of the tighter protection of the other class. This argument has not been explored in the literature; however, if this phenomenon is observed in practice, there is a strong case for tightening minority protection for all classes simultaneously. In the special case of both high substitutability and lower protection of the limited-voting class, vote value can increase with investor protection. I use the measure for anti-director rights from [La Porta et al. \(1998\)](#) and define it in [Table 2](#).

### 3.3. Takeover law

Takeover regulations ensure that the control premium is shared with minorities in the event of control transfer. I concentrate on three characteristics of takeover regulation: (1) equal treatment of share classes in a takeover; (2) equal treatment of minority shares and the dominant block, within each class, in a takeover; and (3) mandatory offers triggered above a certain ownership threshold ([Table 5](#)).

A large proportion of countries that allow dual-class shares have adopted equal treatment of share classes in control changes. Equal price provisions between classes can cause a zero vote value to be observed, even if the value of control-block votes is strictly positive. In practice, this is not the case, because the equal price rule does not apply for all forms of control transfer, thus leaving a positive probability for a differentiated offer at control contest time ([Smith and Amoako-Adu, 1995](#)). On the

other hand, fear of lawsuits can decrease the observed instances of differentiated bids in countries where those are permitted. Differentiated bids are allowed both in the UK and US. In the US only four out of 30 takeover bids during the period of 1960 to 1980 offer unequal prices to each class (DeAngelo and DeAngelo, 1985). In the UK, differentiated bids are frequent. In the period 1955 to 1982, 37 out of the 43 takeovers involved a differentiated offer (Meggison, 1990).

The fair price provision prescribes an equal price for minority shares and the dominant block, within each class, in the case of a control transfer. The provision is in force in four out of six common law countries and four out of 12 civil law (mostly Scandinavian) countries. Fair pricing need not be beneficial. If takeover activity is sufficiently valuable to minority multiple- or limited- voting investors, then stricter enforcement of fair-pricing rules that raises takeover costs can hurt investors.<sup>7</sup> However, markets for control are relatively inactive in this sample, casting doubt on the empirical importance of this effect. Note that in the absence of a protective law, fair pricing to minority shareholders can still occur under the threat of litigation, as the following example shows. In June 1996, Mahle GmbH bought 51% of the voting power in Metal Leve SA, Brazil, from the owner-families in a private deal. In September the same year, Mahle GmbH offered to purchase the free float voting shares (16.8% of the votes) on the open market, at the same price. Fair price offers are infrequent in Brazil, since the control transaction terms are not usually disclosed. In the case of Mahle GmbH and Metal Leve SA however, both companies had subsidiaries in the US with a large share of the piston and engine part market. The US Federal Trade Commission publicized the terms of the control transfer while investigating the matter, possibly affecting the decision of Mahle GmbH to treat the minority multiple- voting shareholders in a fair manner.

In all but five sample countries the takeover code imposes on the dominant voteholder to make a mandatory offer for all shares once a certain vote level is attained. For example, in South Africa the Securities Regulation Code on Takeovers and Mergers 1991 sets that threshold at 30% of the votes.

Takeover regulations increase the cost of control by compelling the new controlling party to share more value at takeover time with minority shareholders (of either class depending on each of the three regulations, see above). As with enforcement and investor protection laws, I would expect a negative relationship between the strictness of takeover rules and the value of control-block votes. There are three potential caveats for the enumerated takeover rules. First, the principle of protecting shareholders in a takeover can be maintained by a judge even in the absence of an explicit law, as illustrated in the examples with equal pricing. Second, enforcement of the law can differ. For example, South Africa's Rules of the Securities Regulatory Panel feature rule 34, that permits the panel to exempt investors from any control requirement that is transfer-related. Third, takeover rules change the very mechanism of the control contest, in addition to increasing the cost of a control change. A more careful approach would model faithfully the legal specifics of the environment in the spirit of Bebchuk (1994).

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<sup>7</sup>I thank a referee for raising this point.

The takeover rules index is defined in Table 2. Table 5 shows that it is highest for the common law countries (with an average of 0.45), followed by the Scandinavian civil law countries (0.40), the German civil law countries (0.17), and the French civil law countries with the lowest average (0.13).

### 3.4. Corporate charter provisions

Corporate charter provisions can be used to concentrate control in the hands of dominant shareholders, over and above control afforded by voting power. I collect information on golden shares, voting caps, limitations on transfer of shares, and poison pills. For example Stora Kopparberg Bergslags AB, Sweden, is owned 18% and controlled 22% by Mr. Wallenberg. The voting power of every other shareholder is capped at 10%, thus giving the dominant owner the upper hand. Due to the presence of a voting cap, the value of the charter provision variable for Stora will be lower, signifying the presence of power-concentration by the controlling owner. Data are gathered also on two provisions that abate the inequality of power between the dominant party and other shareholders, namely coattail provisions and provisions for enhanced voting rights of limited-voting shares in case of dividend nonpayment, sale of assets, or excessive concentration of voting power in the multiple-voting class. Control-concentrating charter provisions make it cheaper to maintain corporate control. The value of control-block votes is expected to increase with control-concentrating charter provisions and decrease with provisions that protect limited-voting shares. Charter provision adoption can intensify as a response to a strict takeover code. Further, charter provision as well as takeover codes could affect the likelihood of a control challenge (Harris and Raviv, 1988). These considerations of endogeneity are addressed below.

The charter rules index is defined in Table 2. Country means for the index are in Table 5. The index is lowest in the French and German civil law group of countries, with an average of 0.34 and 0.38, respectively. The index is the highest in the common law countries (0.52) and the Scandinavian countries (0.56). Civil law countries tend to use of the voting caps and limits on transfers of shares. Common law countries tend to use more extensively poison pills, golden shares, coattails, and increased voting power in certain events.

To sum up, the value of control-block votes is expected to decrease with the strictness of the legal environment. In particular such strictness includes better general investor protection, higher quality of law enforcement, and stricter takeover laws. The value of the control-block votes increases with the existence of charter provisions that concentrate power in the dominant vote-owner.

### 3.5. Results

Table 6 explores the link between laws and the value of control-block votes. Regressions I–IV show a negative and significant effect of tougher rule of law, stricter general investor protection laws, investor-friendly takeover laws, and the absence of power-concentrating charter provisions on the value of the control-block

votes. The magnitude of the effect is important as well. For example, going from the most lax to the toughest takeover-law score reduces the value of control-block votes of a widely held company from 23% to 10%. A move from full to median use of power-concentrating charter provisions shaves 17 percentage points off the value of control-block votes of a widely held company.

Regressions V and VI combine the four legal measures. The coefficients of the legal variables generally remain significant. The magnitudes of the effects are somewhat reduced, but remain considerable, with the exception of the takeover rules variable. Note that the legal measures are significantly correlated. The highest correlations are between enforcement and takeover rules (31.38%), takeover and general investor protections (38.18%), and charter provisions and enforcement (47.82%). The four legal variables are strongly jointly significant, with an F-statistic of 21.04. A potential econometric problem with Regression V is omitted variable bias. Ideally, a random effects regression would allay our worries about an omitted country-specific variable. The Hausman test suggests that the random effects estimator is invalid, however. Therefore, Panel A presents OLS firm-level regressions with clustered robust standard errors, to correct for possible within-country correlation. Clustered robust standard errors are similar to the Huber-White errors, but the weights are sums over each cluster, in this case each country. This adjustment corrects the standard errors, but fails to correct the coefficients. As an alternative test, Regression VI includes country dummies to gauge omitted country-level effects, and the results confirm those of Regression V. Similar conclusions can be made when repeating Regression VI with indicator controls for legal origin, or GNP per capita (not reported).

The effect of the legal measures is complementary, but proper enforcement is more powerful than both investor protection laws and takeover regulation. From Regression VI, the average widely held firm in a country with a “worst case” legal protection enjoys a value of control-block votes of up to 48%. This figure assumes no dividend or liquidity differences among the classes of shares, and uses the lowest in-sample value for the legal environment variables. Raising the value of each legal indicator in turn to the maximum in-sample value is illustrative of the link between control value and laws. The value of control-block votes drops to 31% if law enforcement quality is radically overhauled (from a minimum of 0.44 to a maximum of one). A similar improvement in general investor protection (from 0.16 to 0.83) drives the value of control-block votes further down to 20%. This figure falls to 8% after tightening takeover laws (from zero to 0.7), and finally to 5% when I move from full use of power-concentrating charter provisions to none (0.08 to 0.62). This simple exercise reveals the considerable magnitude of the effect of laws, and their proper enforcement, on the relative value of minority multiple- and limited-voting shares.

Regressions I–VI of [Table 6](#) assume that charter rules and takeover probability are exogenous. In reality, it can be argued that they both depend on the takeover rules that are in force in the country. In addition, charter provisions can affect takeover probability. The correlation of takeover probability with takeover laws and with charter rules are 15.80% and 9.29% and are not significant, however. Inasmuch as

Table 6  
 Institutional determinants of mean value of control-block votes to firm market value  
 Panel A presents OLS regressions with clustered (robust) standard errors (I–VI). Regression VII presents fixed-effects (within) estimators. Regression VI is with country dummies, which are not reported. Panel B presents (between) regressions of means value of control-block votes to firm market value, by country, on the legal variables. Rule of law, investor protection and takeover regulations are scaled 0–1 with higher values for better laws. Charter provisions are scaled 0–1 and lower values denote power concentration with the incumbent. Shapley values are scaled 0–1. Firm market value is relative to stock market capitalization. The dividend ratio is excess dividend of limited-over multiple-voting shares to total limited-voting dividend. Turnover is the log of limited- to multiple-voting average daily trading volume in 1996. Standard errors in parentheses. Significance:  $a = 1\%$ ;  $b = 5\%$ ;  $c = 10\%$ . Data are for 1997.

	I.	II.	III.	IV.	V.	VI.	VII.
Rule of law	-0.4524 <sup>b</sup> (0.0903)				-0.2978 <sup>a</sup> (0.0942)	-0.1781 (0.1303)	
Investor protection		-0.2325 <sup>b</sup> (0.0648)			-0.1677 <sup>b</sup> (0.0709)	-0.3454 <sup>c</sup> (0.1830)	
Takeover regulations			-0.1870 <sup>b</sup> (0.0653)		-0.0330 (0.0558)	-0.2616 <sup>c</sup> (0.1404)	
Charter provisions				-0.3469 <sup>b</sup> (0.1213)	-0.2325 <sup>b</sup> (0.1077)	-0.1665 <sup>b</sup> (0.0804)	-0.1628 <sup>a</sup> (0.0329)
Shapley value	0.1024 <sup>b</sup> (0.0474)	0.0998 (0.0670)	0.1145 (0.0771)	0.0664 (0.0409)	0.0900 <sup>a</sup> (0.0274)	0.0562 <sup>c</sup> (0.0290)	0.0603 <sup>b</sup> (0.0244)
Firm size	0.0031 (0.0039)	-0.0009 (0.0048)	0.0045 (0.0068)	0.0039 (0.0036)	-0.0017 (0.0035)	-0.0017 (0.0042)	-0.0016 (0.0034)
Log difference in turnover	-0.0154 <sup>a</sup> (0.0036)	-0.0112 <sup>a</sup> (0.0022)	-0.0139 <sup>a</sup> (0.0029)	-0.3245 <sup>b</sup> (0.1336)	-0.2001 <sup>c</sup> (0.1066)	-0.2255 <sup>a</sup> (0.0561)	-0.2098 <sup>a</sup> (0.0594)
Dividend ratio	-0.2603 <sup>c</sup> (0.1377)	-0.4564 <sup>b</sup> (0.1789)	-0.4094 <sup>b</sup> (0.1691)	-0.0136 <sup>a</sup> (0.0015)	-0.0137 <sup>a</sup> (0.0037)	-0.0148 <sup>a</sup> (0.0038)	-0.0149 (0.0127)

	I.	II.	III.	IV.	V.	
Constant	0.4618 <sup>a</sup> (0.0820) 618	0.2200 <sup>b</sup> (0.0699) 618	0.1130 <sup>c</sup> (0.0639) 618	0.2405 <sup>a</sup> (0.0550) 618	0.5675 <sup>a</sup> (0.0857) 618	0.6944 <sup>a</sup> (0.0844) 618
Adjusted <i>R</i> squared	31.68%	30.52%	16.91%	27.62%	35.62%	41.42%
<i>Panel B—Between Regressions</i>						
Rule of law	-0.3724 <sup>b</sup> (0.1420)			-0.3318 <sup>b</sup> (0.1232)	-0.0119 (0.1330)	
Investor protection		-0.2082 <sup>c</sup> (0.1166)		-0.1273 (0.0987)	-0.0434 (0.0787)	
Takeover regulations			-0.2688 <sup>b</sup> (0.1153)	-0.1879 <sup>c</sup> (0.1037)	-0.1341 (0.0801)	
Charter provisions (country average)					-0.6770 <sup>a</sup> (0.2005)	
Constant	0.2762 <sup>a</sup> (0.1226) 18	0.2405 <sup>a</sup> (0.0699) 18	0.2076 <sup>a</sup> (0.0441) 18	0.5326 <sup>a</sup> (0.1143) 18	0.5102 <sup>a</sup> (0.0868) 18	
Adjusted <i>R</i> squared	25.69%	11.40%	20.68%	44.94%	68.42%	

the charter rules and the takeover probability are determined by prevailing laws, their significance in the regressions could result from a cross-country correlation with the value of control-block votes, which is caused by the dependence of all three variables on the legal framework. I run a fixed-effects (within) regression, to determine a lower bound for the explanatory power of takeover probability and charter provisions for the value of control-block votes (VII, [Table 6](#)). Within countries, the legal framework is held constant, so takeover probability and charter provisions are exogenous factors in this setup. Both takeover probability and charter provisions are significant within-country determinants of the value of control-block votes.

A potential problem with the results in Panel A of [Table 6](#) is that countries with many observations have a disproportionate weight in the regression results. Thus, it is difficult to judge whether the significance of the results comes from the fact that they hold for the countries with most observations, or because the relations generally hold. I therefore employ two additional sets of regressions as a robustness check. I run country by country regressions for all countries with more than 10 observations with similar results (not reported). As a further robustness check, Panel B of [Table 6](#) shows (between) regressions, or OLS of mean value of control-block votes, by country, on the four country-level legal measures. The four legal environment variables together explain 68% of the cross-country variation in the value of control-block votes. Note that the R squared is not affected by the collinearity problem. This large effect of laws has a very attractive interpretation if one is willing to accept the empirical validity of the relationship between vote and control value. In that light, the results show the importance of the legal framework in curbing private benefits. Adopting the more conservative empirical view, the results show that minority shareholder rights are very effectively upheld with the help of a refined legal environment, especially the rights of limited-voting shareholders which are inherently less protected due to their limited (or nonexistent) voting power.

#### **4. Conclusion**

The value of control-block votes is an important part of firm value and varies widely across countries. Average value of control-block votes ranges from 48% of firm value in South Korea to -2.88% (assuming the controls are at their mean values) in Hong Kong. Quite a few countries exhibit high vote values. The value of control-block votes in Brazil, Chile, France, Italy, and Mexico are one-quarter or more of firm market capitalization. These magnitudes are even more striking if one considers that control-block votes value is a lower bound for the value of control. Scandinavian and Anglo-Saxon countries, on the other hand, reveal a value of control-block votes of less than 10%.

A value of control-block votes ranging up to one-half of firm market capitalization brings to the fore the issue of a corporate governance mechanism capable of protecting minority shareholder value, especially that of limited-voting shares. Law enforcement, investor protection, takeover regulations, and corporate

charter provisions together explain 68% of the systematic differences in the value of control-block votes. This large effect of laws has a very attractive interpretation if one is willing to accept the empirical validity of the relationship between vote and control value. In that light, the results show the importance of the legal framework in curbing private benefits, underscoring accompanying implications about stock market development, external financing, and corporate valuation. Adopting the more conservative empirical view, the results show that minority shareholder rights are very effectively upheld by a refined legal framework.

Vote value studies provide important insight into minority protection issues and enable cross-country comparisons. The paper provides the first consistent cross-country study of vote value by transferring the focus away from the value of a single vote towards the control block as a measure of the value of voting power. The legal framework that governs the link between those two magnitudes is made explicit. The paper provides a comprehensive description of relevant corporate control market regulations, as well as a taxonomy of firm-level corporate charter provisions.

## References

- Agnblad, J., Berglof, E., Hogfeldt, P., Svancar, H., 2001. Ownership and control in Sweden: Strong owners, weak minorities, and social control. In: Barca, F., Becht, M. (Eds.), *The Control of Corporate Europe*. Oxford University Press, London, pp. 228–258.
- Barber, B., Palmer, D., Wallace, J., 1999. Determinants of conglomerate and predatory acquisitions: Evidence from the 1960s. *Journal of Corporate Finance* 1, 283–318.
- Barclay, M., Holderness, C., 1989. Private benefits from control of public corporations. *Journal of Financial Economics* 25, 371–395.
- Bebchuk, L., 1994. Efficient and inefficient sides of corporate control. *Quarterly Journal of Economics* 109, 957–993.
- Bebchuk, L., 1999. A rent-protection theory of corporate ownership and control. NBER working paper 7203. National Bureau of Economics Research, Cambridge, MA.
- Bergstrom, C., Rydqvist, K., 1990. Ownership of equity in dual-class firms. *Journal of Banking and Finance* 14, 255–269.
- Bergstrom, C., Rydqvist, K., 1992. Differentiated bids for voting and restricted voting shares in public tender offers. *Journal of Banking and Finance* 16, 97–114.
- Berle, A., Means, G., 1932. *The modern corporation and private property*. Macmillan, New York.
- Billett, M., 1996. Targeting capital structure: the relationship between risky debt and the firm's likelihood of being acquired. *Journal of Business* 69, 173–192.
- Chung, K., Kim, J., 1999. Corporate ownership and the value of a vote in an emerging market. *Journal of Corporate Finance* 5, 35–54.
- Claessens, C., Djankov, S., Lang, L., 2000. The separation of ownership and control in east asian corporations. *Journal of Financial Economics* 58, 81–112.
- Cudd, M., Duggal, R., 2000. Industry distributional characteristics of financial ratios: an acquisition theory application. *Financial Review* 35, 105–120.
- DeAngelo, H., DeAngelo, L., 1985. Managerial ownership of voting rights. *Journal of Financial Economics* 14, 33–69.
- Dodd, P., Warner, J., 1983. On corporate governance: a study of proxy contests. *Journal of Financial Economics* 11, 401–439.
- Dyck, A., Zingales, L., 2002. Private benefits of control: An international comparison. NBER working paper 8711. National Bureau of Economics Research, Cambridge, MA.

- Grossman, S., Hart, O., 1988. One share-one vote and the market for corporate control. *Journal of Financial Economics* 20, 175–202.
- Harris, M., Raviv, A., 1988. Corporate control contests and capital structure. *Journal of Financial Economics* 20, 55–86.
- Horner, M., 1988. The value of the corporate voting right: Evidence from Switzerland. *Journal of Banking and Finance* 12, 69–83.
- International Society of Securities Administrators, 1997. ISSA Handbook. Zurich, Switzerland.
- Jensen, M., Meckling, W., 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3, 305–360.
- Jog, V., Riding, A., 1986. Price effects of dual-class shares. *Financial Analysis Journal* 42, 58–67.
- Johnson, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, 2000. Tunnelling. *American Economic Review* 90, 22–27.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1997. Legal determinants of external finance. *Journal of Finance* 52, 1131–1150.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. *Journal of Political Economy* 106, 1113–1155.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000a. Agency problems and dividend policies around the world. *Journal of Finance* 55, 1–33.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2000b. Investor protection and corporate governance. *Journal of Financial Economics* 58, 3–27.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2002. Investor protection and corporate valuation. *Journal of Finance* 57, 1147–1170.
- Lease, R., McConnell, J., Mikkelsen, W., 1983. The market value of control on publicly traded corporations. *Journal of Financial Economics* 11, 439–471.
- Levy, H., 1982. Economic valuation of voting power of common stock. *Journal of Finance* 38, 79–93.
- Malatesta, P., Walkling, R., 1988. Poison pill securities: Stockholder wealth, profitability, and ownership structure. *Journal of Financial Economics* 20, 347–376.
- Meeker, L., Joy, M., 1980. Price premiums for controlling shares of closely held bank stock. *Journal of Business* 53, 297–314.
- Meggison, W., 1990. Restricted voting stock, acquisition premiums, and the market value of corporate control. *The Financial Review* 25, 175–198.
- Milnor, J., Shapley, L., 1978. Values of large games II: Oceanic games. *Mathematics of Operations Research* 3, 290–307.
- Modigliani, F., Perotti, E., 1998. Protection of minority interest and the development of security markets. *Managerial and Decision Economics* 18, 519–528.
- Nenova, T., 2000. Changes in corporate law in Brazil and the value of control. Unpublished working paper. Harvard University, Cambridge, MA.
- Nenova, T., 2001. How to dominate a firm with valuable control: Regulation, security-voting structure, and ownership patterns of dual-class firms. Unpublished working paper. Harvard University, Cambridge, MA.
- Nuttall, R., 1999. Takeover likelihood models for UK Quoted Companies. Unpublished working paper No. 6. Nuffield College, University of Oxford.
- Palepu, K., 1986. Predicting takeover targets: A methodological and empirical analysis. *Journal of Accounting and Economics* 8, 3–35.
- Robinson, C., White A., 1995. The value of a vote in the market for corporate control. Unpublished working paper, York University, Toronto, Canada.
- Rydqvist, K., 1996. Takeover bids and the relative prices of shares that differ in their voting rights. *Journal of Banking and Finance* 20, 1407–1425.
- Shleifer, A., Vishny, R., 1997. A survey of corporate governance. *Journal of Finance* 52, 737–783.
- Shleifer, A., Wolfenzon, D., 2002. Investor protection and equity markets. *Journal of Financial Economics* 66, 3–28.
- Smith, B., Amoako-Adu, B., 1995. Relative prices of dual class shares. *Journal of Financial and Quantitative Analysis* 30, 223–239.

- Walkling, R., 1985. Predicting tender offer success: a logistic analysis. *Journal of Financial and Quantitative Analysis* 20, 481–478.
- Zingales, L., 1994. The value of the voting right: a study of the milan stock exchange experience. *The Review of Financial Studies* 7, 125–148.
- Zingales, L., 1995. What determines the value of corporate votes. *The Quarterly Journal of Economics* 110, 1047–1073.