WHAT DETERMINES THE VALUE OF CORPORATE VOTES?*

LUIGI ZINGALES

This paper studies the determinants of the value of voting rights in U.S. corporations. Results support the hypothesis that the price of a vote is determined by the expected additional payment vote holders will receive for their votes in case of a control contest. The size of this differential payment is a function of the probability that a vote is pivotal in a control contest and the magnitude of the private benefits obtainable by controlling the company. Simple proxies for these two factors explain up to 30 percent of the variation of the voting premium across companies and through time. My findings also suggest that the value of managerial perquisites are, at least partially, reflected in the price of votes.

A growing literature emphasizes that corporate shareholders do not receive benefits in proportion to their fractional ownership, but that holders of large blocks of shares receive a disproportionate amount of corporate benefits (so-called private benefits). Consistent with this view, Barclay and Holderness [1989] find that in private negotiations large blocks of stock trade at a premium to the exchange price, and they convincingly argue that such premiums reflect the value of private benefits of control.

However, the purchase of a large block is not the only way to achieve control. Common shares traded on the exchange have voting rights too, and control can be achieved by assembling a large block in a series of small open-market transactions. As a result, as long as there is competition among parties interested in control, the exchange price of common stock should include a "vote component." Lease, McConnell, and Mikkelsen [1983, 1984] document that, when a company has two classes of common stock outstanding, which differ only in their voting rights, superior voting shares generally trade at a small premium (5 percent) above their inferior voting counterparts. However, they also document that this premium is not always positive and changes over time.

*An earlier version of this paper appeared under the title, "The Value of Voting Rights in the United States." I wish to thank Oliver Hart, Daniel Haevner, Steven Kaplan, Lawrence Katz, James Poterba, Andrei Shleifer, Robert Vishny, an anonymous referee, and seminar participants at the Universities of Rochester and Alberta for their useful comments. Enrique Navarrete and Andy Pruitt provided excellent research assistance. The Bradley Foundation and the George and T. M. Shultz Fund for graduate dissertations paid for the research expenses. While writing this paper, the author was on a fellowship from the Istituto Bancario San Paolo di Torino.

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The Quarterly Journal of Economics, November 1995
This begs the question of what determines the differences and the movements in the value of voting rights.

This paper develops and tests a model that explains to what extent and when the value of private benefits is reflected in the exchange price of a vote. I show that the value of a vote is determined by two factors: the likelihood that the vote will be pivotal in a contest for control and the price it will fetch in case of such a contest.

I use Grossman and Hart's [1988] and Harris and Raviv's [1988] models to formally link the price of votes and the value of private benefits of control. The voting premium reflects the expectation that voting rights become valuable in case of a battle for control. If an acquisition is contested, the superior voting shares should receive a differential premium that is a function of the size of the private benefits of control and of the proportion of superior voting shares outstanding. However, the probability of a contested acquisition is very much influenced by the existing ownership structure. The ownership structure should therefore affect the voting premium through its effects on the probability of a contested acquisition, as I show in three case studies of unexpected changes in the distribution of ownership.

I then test this relationship on a panel of U. S. companies having two classes of common stock between 1984 and 1990. As a proxy for the cost, and thus the probability, of an acquisition, I use the total market capitalization of a company. As a proxy for the marginal value of a vote in a control contest, I use the Shapley value, which measures the probability that a vote not held by holders of large blocks is pivotal. Both these proxies are statistically significant and can explain 14 percent of the cross-sectional and time series variability of the premium.

Thus far, the analysis is carried out under the assumption that private benefits of control are a similar proportion of the value of future dividends in all the companies considered. Because this proportion is likely to vary across companies, I use the level of cash salary paid to the largest shareholder (in excess of what the company's size would predict) as a proxy for differences in control benefits. This proxy is positively correlated with the unexplained component in the voting premium. This suggests that the value of managerial perquisites is, at least partially, reflected in the price of votes.

Although testing the model is by necessity limited to the small set of companies whose differential-voting stock is traded (so that
the price of voting rights can easily be estimated), the implications of my results are much more far-reaching. The price of any common stock includes a vote component, even if, in most publicly traded companies, this value cannot be directly measured. Although under "normal conditions" the fluctuations in this vote component are small enough to be neglected, this is not always the case. Voting premiums can fluctuate widely, and voting rights can sometimes become as valuable as cash-flow rights. In particular, when an event alters the distribution of ownership or the expectation of a contested acquisition, a fraction of the private benefits of control may be reflected in the stock price and may affect its variability in a substantial way. This suggests that it is inappropriate to automatically interpret an increase in the price of a stock as an increase in the value of expected future cash flow; it can simply be a change in the price of votes. It also suggests that this paper’s methodology might help future research distinguish between the two explanations.

This paper is organized as follows. Section I contains three case studies showing how drastic changes in the ownership structure affect voting premiums. Section II shows why the voting premium is equal to the expected differential premium in case of a contested acquisition, and links this differential payment to private benefits of control. Section III presents the empirical analysis. Section IV discusses the implications of my findings and concludes.

I. THE EFFECTS OF OWNERSHIP ON THE VOTE VALUE

If the value of a vote is determined by the fact that control can be achieved by assembling a large block of stock in a series of small open-market transactions, then the price of a vote should rise at the announcement of any major and unexpected change in the ownership distribution that would facilitate a takeover. By reviewing the proxy statements of companies with two classes of common stock that were trading during the 1980s, I identified six cases in which there was an exogenous change in the ownership of the controlling block. In three cases the controlling block was inherited by members of the same family, who succeeded in keeping their voting power united by using trusts. Therefore, I focus on the three other cases, where there were substantial changes in the distribution of voting power.1 Figures Ia, Ib, and Ic illustrate the behavior

1. Details of all these cases are in Zingales [1992].
of the premium of the superior voting stock in these three companies around the respective relevant events.²

In the case of Resorts International (Figure Ia), the event is the unexpected death of the largest shareholder (William Crosby),

² The premium of the superior voting stock is simply the difference in price between the superior and the inferior voting stock divided by the price of the inferior voting stock. Later in the paper I refine this measure.
c: Moog Inc.

**Figure I**

Effects on the Voting Premium of Sudden Changes in Ownership

The voting premium is measured as

\[ VP = \frac{(P_S - P_I)}{P_I} \times 100, \]

where \( P_S \) is the price of the superior voting share and \( P_I \) is the price of the inferior voting share. These voting premiums are observed around large and sudden changes in the distribution of voting power. For Resorts International (Figure Ia) the relevant event is the sudden death of the largest shareholder, that was announced on April 14, 1986. For Wang Laboratories (Figure Ib) the relevant event is the outbreak of a conflict within the Wang family, that was announced on August 9, 1989. For Moog Inc. (Figure Ic) the relevant event is the largest shareholder’s decision to swap his holdings for some assets because of differences of opinion with the board. This decision was announced on February 3, 1988.

who at that time controlled 48 percent of the votes. Before his death, given the impossibility of a takeover, the premium was close to zero. At the time the death was announced (April 14, 1986), the premium rose sharply: +39 percent. This increase is significantly different from zero at the 99 percent level.\(^3\) Crosby did not have children, and the *Wall Street Journal* reported that there were rumors that a big part of Crosby’s estate was reserved for his companion, who was outside the group of family members. This

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3. The statistical significance is established by looking at the standard deviation of daily variations in the voting premium in the year before the event.
possibility (later realized) of a fragmentation of the controlling block increased the likelihood of a control contest.

In the case of Wang Laboratories (Figure Ib), the event is represented by the outbreak of a family fight. The Wang family controlled 38 percent of the voting power and a majority of the superior voting class shares (at Wang any merger requires approval of each class voting separately). On August 9 An Wang, founder of the company and majority stockholder of the family shares, forced his son to step down as president, and announced his intention to search for an outside manager. On that day the premium jumped from 5 percent to 62 percent, an increase significant at the 99 percent level. The solidarity of Wang control over the company was broken, and the market immediately reflected the change.

In the case of Moog Inc. (Figure Ic), the change in the distribution of ownership was triggered by the decision of William C. Moog, founder, chairman, and president of the company, to swap his stock holdings for some assets of the company. The stated reason is “difference of opinion with the board” [New York Times, February 3, 1988]. Before this decision Moog owned about 30 percent of the superior voting stock and was part of a voting agreement inside the Moog family. After his departure the company’s largest shareholder became the Moog Inc. Retirement Trust Plan, which owned 13 percent of the superior voting stock. In the two days around the announcement (February 2, 1988), the voting premium jumped from 5 percent to 22 percent, an increase significant at the 99 percent level. After the event the voting premium remained significantly higher. The swap made a change in control likely, and the voting premium reflects this.

All three case studies show a direct causal link between the changes in the distribution of ownership and the voting premium. The existence (or lack of) of a controlling block, and the cohesion inside this block, appear to be the crucial factors in determining the magnitude of the premium. These are the features that the model in the next section attempts to formalize.

II. The Source of the Voting Premium

Superior voting shares are bound by their corporate charters to receive no more dividends than inferior voting shares. The positive premium, then, can be explained only by arguing that superior voting shareholders receive benefits other than dividends. While it is possible that a large shareholder of a company might get
some private benefits of control (e.g., he can divert to his own advantage some corporate resources), the same cannot be said for a small outside shareholder, who has no control over the company’s assets and no way to benefit from them. Market prices reflect the value of shares to the marginal investor. If, as is likely, the marginal investor is a small shareholder not directly involved in control, then the voting premium can only reflect the expectation that superior voting shares will receive a larger premium in case of a takeover.

In order to understand what drives the expectation of a large premium in case of a takeover, I explain why a buyer may end up paying a differential premium in favor of superior voting shares. For this purpose, I consider a model along the lines of Grossman and Hart [1988] and Harris and Raviv [1980] to determine the optimal bidding strategy in the presence of multiple classes of differential voting shares. A similar application was independently developed by Ridqvist [1992].

II.1. A Model of the Differential Premium

For simplicity, I consider that there are only two parties interested in control and that any bid must involve all the company’s securities, even if different classes may receive different prices. I consider only the case in which inferior voting shares have no voting power at all. The reasoning can be extended to consider the case in which both stocks have voting rights, but in different proportions.

Define as $B_i$ the private benefits of control obtained by $i$ if he gets control, where $i = 1, 2$. Similarly, $y_i$ represents the cash flow produced by $i$ if he runs the company. While private benefits are enjoyed only by the party in control, the cash flow produced is divided equally among shareholders in proportion to the number of shares owned. Let us assume that party 1 has the highest valuation for the company and will prevail. Then, in designing the optimal tender offer, he should consider two constraints: the optimal bid should induce outside shareholders to tender their shares, and it should be high enough to outbid the opponent.

The first requirement corresponds to the following constraints:

$P_o \geq y_1/N$

4. Similar results can be obtained if restricted offers are allowed, as long as oversubscribed offers are allocated pro rata.
and

\[ P_{nv} = y_1/N, \]

where

\[ P_v(P_{nv}) = \text{winning bid price per voting (nonvoting) share}, \]

\[ N = \text{total number of shares}. \]

The first inequality represents the incentive constraint for outside shareholders. If they do not tender their shares, they will receive their fraction \((1/N)\) of the income produced by the winning management team \((y_1)\). Therefore, they will never tender below that price. Independent of whether or not they are tendered, nonvoting shares are entitled to a certain fraction of the cash flow produced by the winning management. Equation (2) formalizes this constraint.

The second requirement for a winning bid corresponds to

\[ P_v \geq y_2/N + B_2/N_v, \]

where \(N_v\) is the number of voting shares. The bid for voting shares should at least be equal to the maximum price the other potential contender is prepared to pay for those shares. The contender's reservation price for all the voting shares is given by the fraction of income he obtains if he runs the company \((N_v/Ny_2)\), plus his private benefits of control \((B_2)\). This corresponds to a price per share equal to \(y_2/N + B_2/N_v\).

If there is only one bidder interested in the company, then the winning bid has only to overcome the "free-rider" problem [Grossman and Hart 1980], that is, the smallest bid satisfying constraints (1) and (2). In this case the bid will be

\[ P_v = y_1/N \quad \text{and} \quad P_{nv} = y_1/N, \]

and the takeover price per share will be equal across classes.

On the other hand, whenever there is another potential bidder with a reservation value higher than the bidder's cash flow \((y_1)\), the binding constraint in the voting class bid is given by inequality (3). As a result, the bid will be at the following prices:

\[ P_v = y_2/N + B_2/N_v \quad \text{and} \quad P_{nv} = y_1/N. \]

Therefore, as long as

\[ y_2/N + B_2/N_v \geq y_1/N, \]
the differential premium will be equal to

\[ P_v - P_{nv} = \frac{y_2 - y_1}{N} + \frac{B_2}{N_v}. \]

Condition (6) corresponds to the idea that the winning bidder faces potential competition from other parties who value control. In fact, if this condition is violated, the bidder will not face any real competition: he is able to produce so much cash flow that he dwarfs any contender. The model, then, predicts differential premiums only when there is more than one potential bidder interested in control.

In particular, if the two contenders have, on average, the same ability to produce income \((y_1 = y_2)\), then the price differential is equal to the per share value of private benefits of the incumbent. In this case, dividing both sides of equation (7) by the price of a nonvoting share \((P_{nv} = y_1/N)\) yields

\[ \frac{P_v - P_{nv}}{P_{nv}} = \frac{B_2}{y_1 N_v} = \frac{B_2}{y_1 \pi}, \]

where \(\pi\) is the proportion of voting shares outstanding.

Equation (8) suggests that when a differential premium for superior voting shares is paid, this should be equal to the relative size of private benefits of control divided by the proportion of voting shares outstanding.

II.2. Evidence on Differential Premiums

What is the evidence on the differential premium paid to superior voting shares in case of an acquisition? De Angelo and De Angelo [1985] look at acquisitions among all dual-class companies (not just companies with both classes traded) between 1960 and 1980. An additional premium to superior voting shares is paid 40 percent of the time, but they find no case of differential payment among companies with both classes traded.

According to the theory outlined above, it is the existence of another party interested in control that should determine the characteristics of the bid. The model refers to potential, rather than actual, competition. In fact, in the absence of informational asymmetries, one should never expect more than one bid. However, in real-world situations, the best proxy for the existence of potential competitors is the realization of alternative bids. In this respect, the two groups differ remarkably.

In the group where no premium was paid, there is only one
company in which an alternative bidder appears. In all the other cases, there is no record of an alternative bid. By contrast, in the two cases where a differential payment did take place, there was always at least one other bidder involved.

Another proxy for the possibility of competition is agreement with the incumbent management. A preexisting agreement with the incumbent management generally guarantees the bidder a large block of votes. Moreover, it gives him a large informational advantage (see Novaes [1993]). In this case the criterion exactly divides the two groups. The first ten acquisitions happened with the consent of the incumbent board. In the other two cases, the board rejected the offer of the first bidder and only afterward joined one of the contenders.

In sum, the empirical evidence suggests that a differential premium is paid if, and only if, a change in control is contested. The next question, then, is whether the expectation of a differential premium can explain the time series and cross-sectional variations in the price ratios of differential voting shares.

III. The Determinants of the Voting Premium

This section explores whether there is any correlation between changes in the expected differential premium in case of a takeover and lower frequency movements of the voting premium. In order to do that, I need to construct a sample of dual-class companies and identify the appropriate measure for the expectation of a differential premium.

III.1. Data

I searched the Center for Research in Security Prices (CRSP) database for all the companies with multiple classes of common stock which had differential voting power and were contemporaneously traded on the same stock exchange between 1984 and 1990. The sample starts in 1984 because this is the first year for which I was able to obtain data on 5 percent shareholders through Spectrum 5, a monthly publication that collects the level of ownership.

5. The only exception is Mobile Communications, in which, after the initial bid by BellSouth, a mysterious second bidder, whose terms were undisclosed, appeared. As a consequence, BellSouth withdrew its bid and came back only after the undisclosed contender had disappeared. Therefore, it was not really a contested acquisition.
as mandatorily disclosed by shareholders owning more than 5 percent of a publicly traded company (13-G and 13-D filings).

In all cases the articles of incorporation prohibit any differential payment in favor of the superior voting class. However, in a majority of cases it allows or prescribes a preferential dividend to the inferior voting shares. For example, Pittway class A should receive 2.5 cents per share more than its common stock in each quarter in which a cash dividend is paid. This additional dividend right is generally very small, and is easily controlled for in a regression. Therefore, I maintained in the sample companies with similar, although not identical, dividend rights. However, I eliminated companies where the differential voting shares have claims on different cash flows, such as classes E and H of General Motors. I also eliminated companies for which fewer than six months of data were available. There were 49 such companies in 1984. In 1990, after adjusting for new listings and delisted companies, the number is 70. Overall, there are 94 different dual-class companies where both classes were traded for at least six months during the sample period.

The characteristics of the companies identified are summarized in Table I. Only 21 companies have nonvoting common stock. In all other cases both classes are voting, but their voting power differs. The majority of companies (57) attribute ten votes to the superior voting class and one to the inferior voting class. This clustering is probably due to the influence of the American Stock Exchange (AMEX) rules. In 1976 in the process of admitting Wang Laboratories to its listing, AMEX elaborated its policy toward differential voting shares, which became known as the "Wang formula." This formula required, among other things, that the voting ratio between the two classes not be greater than 10:1, and inferior voting shares have the right to elect a minority of directors. In 46 companies the inferior voting shareholders elect a minority (25 percent) of directors.

These differences in relative voting power create some problems in the cross-sectional comparisons. In the case of a voting and a nonvoting class, the voting premium, defined by the left-hand side of equation (8), represents the value of a voting right relative to the value of a cash-flow right. This definition should be adjusted to account for differential voting shares. Let $A$ denote superior voting shares, $B$ be inferior voting ones, and $r$ the relative number of votes of an inferior voting share versus a superior voting one. The price of a voting right is, then, given by $(P_A - P_B)/(1 - r)$,
TABLE I

SAMPLE CHARACTERISTICS

The voting ratio is the number of votes per share of the inferior voting class divided by the number of votes per share of the superior voting class. When the two classes differ only in the number of directors they can elect, then the company is reported under the last column. By contrast, if the two classes differ for both the number of directors they elect and their voting power, then the company is reported under the column of the corresponding voting power ratio. In panel B no difference in dividends implies that the two classes are constrained to pay the same dividend. When the Article of Incorporation allows the possibility of a larger payment to the inferior voting class but does not require it, then the company is reported under column 2. When the inferior voting class pays a multiple of the dividend paid to the superior voting class, then the company is reported under column 3. The last column reports the companies that establish the dollar amount of the quarterly (annual) differential dividend.

### Panel A: Voting arrangements

<table>
<thead>
<tr>
<th>Stock exchange</th>
<th>One class nonvoting</th>
<th>Voting ratio 1:10</th>
<th>Voting ratio &gt; 1:10</th>
<th>Voting ratio &lt; 1:10</th>
<th>Difference only no. of directors</th>
<th>Total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMEX</td>
<td>3</td>
<td>32</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>46</td>
</tr>
<tr>
<td>NASDAQ</td>
<td>15</td>
<td>22</td>
<td>7</td>
<td>—</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>NYSE</td>
<td>1</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>57</td>
<td>10</td>
<td>3</td>
<td>5</td>
<td>94</td>
</tr>
</tbody>
</table>

### Panel B: Dividend characteristics of the two classes

<table>
<thead>
<tr>
<th>Stock exchange</th>
<th>No difference in dividends</th>
<th>Inf. class dividend may be larger</th>
<th>Additional div. proportionately larger</th>
<th>Additional dividend in fixed sum</th>
<th>Total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMEX</td>
<td>15</td>
<td>11</td>
<td>5</td>
<td>13</td>
<td>44</td>
</tr>
<tr>
<td>NASDAQ</td>
<td>22</td>
<td>10</td>
<td>6</td>
<td>8</td>
<td>46</td>
</tr>
<tr>
<td>NYSE</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>22</td>
<td>12</td>
<td>22</td>
<td>94</td>
</tr>
</tbody>
</table>

and the price of a cash-flow right is given by \((P_B - rP_A)/(1 - r)\). Then, for consistency the voting premium is defined as the ratio between one voting right and one cash-flow right and is given by

\[
VP = (P_A - P_B)/(P_B - rP_A).
\]

This definition makes voting premiums comparable across companies with different voting arrangements.

In five cases the two classes differ only in the number of directors they can elect. The superior voting class elects a majority of directors (generally 75 percent), while the inferior voting class elects the rest. Given that in those cases the only possible way to
achieve control is by owning a majority of the superior voting shares, I treat those inferior voting shares as nonvoting stock.

III.2. Summary Statistics

Table II presents summary statistics on the panel data set. Each year the voting premium is computed as the average of the daily premium defined by equation (9). The grand median of the annual average of the daily voting premiums is equal to 3 percent. The grand mean (10.5 percent) is about twice the average level found by Lease, McConnell, and Mikkelsen [1983, 1984] (5.4 percent). The difference is partly explained by the different definition of voting premium: Lease, McConnell, and Mikkelsen define as voting premium \((P_A - P_B)/P_B\), where \(P_A\) is the price of the superior voting shares and \(P_B\) the price of the inferior voting shares. It should also be noted that Lease, McConnell, and Mikkelsen limited their attention to dual classes with identical dividend rights. However, the average premium for companies with equal dividend rights is only slightly larger than the mean of the whole sample.

The level of the voting premium in the United States is comparable to the level found in Sweden (6.5 percent) and the United Kingdom (13.3 percent). However, it is below the value found in Canada (23.3 percent) and Switzerland (about 27 percent), and it is well below those in Israel (45.5 percent) and Italy (81 percent).

Another important datum is the volume of daily trading. I computed the average daily volume for both classes in each year. Then I defined the relative volume as the ratio between the average trading volume in the superior voting class, divided by the average trading volume in the inferior voting class. CRSP data on volumes were available from 1982 for companies listed in the NASDAQ system, but only from 1986 for AMEX and NYSE companies. On average, the volume in the superior stock is slightly less than half (0.44) the volume in the inferior stock. However, the median is only 0.2, and there are huge cross-sectional differences.

6. This sample excludes two outliers (918 percent and -9,424 percent) corresponding to the last days of trading of the superior voting class during the takeover of Resorts International in 1988 and to the last days of trading of Merchants Capital Corp in 1990, just before its insolvency and subsequent liquidation.


8. This average is obviously different from the average of the daily relative trading volumes. This definition was chosen because the trading volume may be equal to zero on certain dates, making the ratio not defined.
TABLE II

SUMMARY STATISTICS

Given a class A of shares with a votes and a class B of shares with b votes, let \( r = b/a \). Then the voting premium is defined as

\[
VP = \frac{P_A - P_B}{P_B - rP_A}.
\]

The voting premium variable is the annual average of voting premium, as defined above. Relative volume is the ratio between the annual average number of superior voting shares traded every day divided by the annual average number of inferior voting shares traded. All the data come from CRSP. The probability that market votes are pivotal is equal to the Shapley value of the market votes in a simple majority game. The fraction of votes held by small shareholders is the voting power held by shareholders with less than 5 percent of votes. The proportion of voting shares is the ratio between the total normalized number of votes (obtained by attributing one vote to each superior voting share and \( r \) of a vote to each inferior voting shares) and the total number of outstanding shares. The size of the biggest shareholder is the percentage of votes controlled by the largest shareholder. All the ownership data come from Spectrum 5. Difference in dividends is a dummy variable taking value one for every company-year in which the inferior voting shares paid a larger dividend than the superior voting shares. Conversion right is a dummy variable taking the value one for every company-year in which the superior voting shares were convertible into inferior voting shares at the holder’s will. The large shareholder salary is the cash salary (in thousands of dollars) received by the largest shareholder in each company-year as reported by the proxy statements. The data for net sales are obtained from Lotus Onesource. Total market value is the market capitalization (in millions of dollars) of both classes of stock combined, measured at the end of the previous calendar year.

<table>
<thead>
<tr>
<th>Series</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
<th>Obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voting premium</td>
<td>10.47</td>
<td>3.02</td>
<td>23.70</td>
<td>-18.94</td>
<td>221.83</td>
<td>396</td>
</tr>
<tr>
<td>Relative volume</td>
<td>0.44</td>
<td>0.18</td>
<td>0.69</td>
<td>0.00</td>
<td>4.98</td>
<td>348</td>
</tr>
<tr>
<td>Fraction of votes held by small</td>
<td>0.55</td>
<td>0.51</td>
<td>0.22</td>
<td>0.03</td>
<td>1</td>
<td>396</td>
</tr>
<tr>
<td>shareholders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion voting shares</td>
<td>0.43</td>
<td>0.44</td>
<td>0.17</td>
<td>0.08</td>
<td>0.88</td>
<td>396</td>
</tr>
<tr>
<td>Size biggest shareholder</td>
<td>32.33</td>
<td>28.38</td>
<td>19.74</td>
<td>0.77</td>
<td>85.85</td>
<td>396</td>
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<tr>
<td>Probability market votes are</td>
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<td>0.41</td>
<td>0.31</td>
<td>0</td>
<td>1</td>
<td>396</td>
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<td>pivotal</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference in dividends</td>
<td>0.38</td>
<td>0</td>
<td>0.49</td>
<td>0.00</td>
<td>1</td>
<td>396</td>
</tr>
<tr>
<td>Conversion right</td>
<td>0.61</td>
<td>1</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
<td>396</td>
</tr>
<tr>
<td>Large shareholder salary (’000)</td>
<td>378.7</td>
<td>320</td>
<td>258.8</td>
<td>0</td>
<td>1,559</td>
<td>337</td>
</tr>
<tr>
<td>Logarithm net sales (’000)</td>
<td>12.8</td>
<td>12.13</td>
<td>1.66</td>
<td>1.95</td>
<td>15.53</td>
<td>354</td>
</tr>
<tr>
<td>Total market value (M)</td>
<td>355.9</td>
<td>92.3</td>
<td>769.0</td>
<td>1.54</td>
<td>6,329.4</td>
<td>355</td>
</tr>
</tbody>
</table>

A measure of the concentration of voting power is given by the proportion of voting shares outstanding (fourth line, Table II). For firms with only voting and nonvoting shares, this figure is literally the fraction of voting shares outstanding. For the entire sample, it represents the ratio between the number of votes and the number
of shares. On average, all the voting power is concentrated in 43 percent of the common stock.

The next two variables in Table II are ownership variables. The size of the largest shareholder is the percentage of votes controlled by the largest shareholder in a company. The average size of the largest shareholder is 32.3 percent, roughly twice the average size of the largest shareholders reported by Shleifer and Vishny [1986] for large U.S. corporations. The voting power controlled by the five largest shareholders averages 47.2 percent, versus the 28.8 percent reported by Shleifer and Vishny.

These differences may just be the effect of the smaller size of the companies in this sample. However, it is worth noticing that despite the larger size of the largest shareholder, the total voting power controlled by the additional four largest shareholders is roughly the same in the two samples (14.4 percent in this sample, 17.3 percent in the Shleifer and Vishny sample). Thus, dual-class arrangements help the largest shareholder increase voting control, but do not modify the average stake of the other large shareholders.

III.3. Expected Premium and Realized Premium

Equation (8) suggests that in the case of a control contest, the voting premium should be equal to the ratio between the value of the private benefits of control and the value of cash-flow rights divided by the proportion of voting shares outstanding:

$$ V_{PCC} = (B/y)(1/\pi), $$

where the subscripts are suppressed to simplify the notation.

However, this is the value of the voting premium only in the event that different contenders fight to reach a control position. The voting premium observed in daily transactions should reflect the expectation of this differential payment in the case of such an event. Therefore, the daily voting premium equals the voting premium during a control contest times the probability ($\Phi$) that a control contest will take place:

$$ VP = \Phi V_{PCC} = \Phi(B/y)(1/\pi). $$

To apply this specification, I need a proxy for $\Phi$.

---

9. The number of votes is the total number of votes when the number of votes of each superior voting share is set equal to one.

10. This specification is correct only if $P_{nv}$ is not a random variable. Otherwise, it should be considered an approximation.
It is not easy to establish a priori what the determinants of the probability of a contested acquisition are. For this reason, I start by analyzing whether the market correctly anticipated the outcome of acquisitions that took place during my sample period. In those cases, I attempt to identify some indicators to use in forecasting this outcome.

For all the companies involved in a control change, Table III computes the average premium of superior voting shares in the year before the first announcement of a tender offer. The mean premium across the first group of companies is 3.28 percent. By contrast, the mean of the two companies that experienced a differential payment is more than ten times greater (38.25 percent). Even if it is difficult to talk about statistical significance with

<table>
<thead>
<tr>
<th>Company</th>
<th>Average voting premium in the year before the tender offer</th>
<th>Differential payment at the time of the tender offer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Corp.</td>
<td>1.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Home Oil</td>
<td>-5.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Int. Bank of Washington</td>
<td>15.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Invest. Diversified</td>
<td>0.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Mobile Comm.</td>
<td>-0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Nielsen</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Pasquale Foods</td>
<td>7.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Saunders</td>
<td>3.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Universal Telephone</td>
<td>4.3</td>
<td>0.0</td>
</tr>
<tr>
<td>V.G.C.</td>
<td>4.7</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>3.28</strong></td>
<td><strong>0.0</strong></td>
</tr>
<tr>
<td><strong>st. dev.</strong></td>
<td><strong>5.22</strong></td>
<td></td>
</tr>
<tr>
<td>Dickenson Mines</td>
<td>34.3</td>
<td>26.0</td>
</tr>
<tr>
<td>Resorts International</td>
<td>42.2</td>
<td>137.0</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>38.25</strong></td>
<td><strong>81.5</strong></td>
</tr>
<tr>
<td><strong>st. dev.</strong></td>
<td><strong>3.95</strong></td>
<td></td>
</tr>
</tbody>
</table>
such a small number, a test of the equality of the two means can be rejected at the 99 percent level. Therefore, there is some evidence that the everyday premium of superior voting shares reflects the magnitude of the actual differential payment in case of a takeover.

III.4. The Cross-Sectional Specification

What determines the probability of a contested acquisition? The market seems to be accurate in anticipating the actual outcome. What then is different in the last two companies compared with the previous ones? Both companies that experienced a contested acquisition had a more diffused ownership structure. When only one individual controls a majority of votes, we should expect the probability of a contested acquisition to be close to zero. When there is only one large shareholder who owns a minority of votes, then we can expect this probability to be low, but not nil. By contrast, we expect this probability to be high when there are multiple large shareholders with similar stakes.

A way of formalizing this idea is to assume that large shareholders form coalitions to control a company, and that a control contest corresponds to the event in which votes held by dispersed shareholders are decisive in allocating control; that is, that a dispersed shareholder is pivotal. In the presence of a finite number of players, the probability of being pivotal is nothing but the Shapley value of the votes held by small shareholders.

In public corporations, in addition to a small number of large shareholders, there are a large number of small, outside shareholders. Milnor and Shapley [1978] derived a modified version of the Shapley value by approximating the small players with a continuum of infinitesimal players. This modified version of the Shapley value, first applied to this type of problem by Rydqvist [1987], gives the probability that the votes of small outside shareholders are pivotal in forming a majority coalition. Therefore, I use the Shapley value measure as a proxy for the probability $\Phi$ that there will be a battle for control. The actual number is

11. In Dickenson Mines there were three large shareholders, none of whom owned a controlling block. In Resorts International the controlling block was divided among the heirs of the late William Crosby. In nine out of ten companies that received no differential premium for superior voting shares, a family or another company held a controlling block of approximately 50 percent of the vote.

12. Assume that coalitions are formed by repeated random drawings of shareholders. A shareholder is pivotal if his joining turns the coalition from a minority to a majority one. In this context, $\Phi$ represents the total probability mass that the pivotal shareholder is a small one. For more details on the construction of this measure, see Milnor and Shapley [1978].
computed by using the ownership data from *Spectrum* 5. I classified as "large" any shareholder who owned more than 5 percent of the votes.\(^{13}\) Table II reports the average value of this probability in the sample.

In principle, the value of the private benefits \(B\) could be estimated from equation (11). However, the level of \(B\) probably differs from company to company. To estimate an average value of \(B\), I must assume that private benefits of control are a constant fraction of the present value of future dividends indicated by \(V\); that is,\(^{14}\)

\[
B = \beta V. \tag{12}
\]

This implies that the voting premium is given by

\[
VP = \beta (\Phi / \tau). \tag{13}
\]

Equation (13) is the fundamental equation relating ownership structure to voting premium. In order to test this relationship, I also include some specific characteristics of the two classes of stocks. To control for differences in dividends paid to the two classes, I construct a dummy variable \(DIV\) equal to one for those company-years in which inferior voting shares received a larger dividend. In addition, I take into account that certain companies allow superior voting shares to be converted into inferior voting shares. This conversion right is potentially valuable when the inferior voting shares may pay an additional dividend. The variable \(CONV\) is a dummy variable that takes a value of one in every company-year in which the superior voting share is convertible into an inferior voting share at the holder's will, and zero otherwise. Therefore, I obtain the following empirical specification:

\[
VP_{it} = \beta_0 + \beta_1 (\Phi / \tau)_{it} + \beta_2 DIV_{it} + \beta_3 CONV_{it} + \epsilon_{it}. \tag{14}
\]

According to the model sketched above, I expect the intercept \(\beta_0\) to be zero. In fact, a correctly specified model should account for all the differences between the two classes, so that the remaining premium should be zero. The coefficient \(\beta_1\) has been defined as the

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\(^{13}\) The level of 5 percent is the threshold that triggers disclosure of ownership in the United States.

\(^{14}\) An alternative rationale for what I do is that I estimate the average relative size of private benefits. However, this interpretation requires that the idiosyncratic component in the relative size of private benefits be uncorrelated with my right-hand-side variables. In other words, I assume that \(B_t = (\beta + u_t) V_t\), where \(u\) is an independently distributed random variable with mean zero. This interpretation requires that \(E[u | \Phi] = 0\).
proportion of the value of private benefits over the cash-flow value of the company, and therefore it is expected to be positive. The coefficient $\beta_2$ represents the average premium in case the inferior stock pays a differential payment, and should be negative. The coefficient $\beta_3$ represents the value of the conversion right. This conversion right is generally attributed to superior voting shares when inferior voting shares are allowed to receive a larger dividend. If the value of the extra dividend becomes larger than the value of the superior voting power, the conversion right becomes valuable. Therefore, $\beta_3$ is expected to be positive.

### III.5. Regression Results

I estimate equation (14) by OLS.\(^{15}\) The standard errors are corrected to take into account heteroskedasticity and serial correlation of the errors across the observations of the same company in different years.\(^{16}\) Table IV (column I) presents the results. All the coefficients have the expected sign, and all but $\beta_3$ are statistically different from zero at the 95 percent level. The estimate of $\beta_1$, which represents the relative size of the private benefits of control, is 4.2 percent. This is very similar to the estimate of the private benefits of control obtained by Barclay and Holderness [1989], using large block trading data (4 percent of the total value of equity). On the contrary, it is substantially below the relative size of the private benefits of control found by Zingales [1994], applying a model similar to Italian dual-class companies (30 percent).\(^{17}\) Rydqvist [1987] runs a similar regression, using Swedish differential voting shares. He finds a coefficient of the Shapley value variable between 3 percent and 8 percent, depending on the different years.

The estimated value of the additional dividend (6 percent) suggests that ceteris paribus a stock with a dividend privilege is

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15. In the regression analysis I dropped the 1987 observation for Resorts International because the company was already involved in a control contest. This observation corresponds to the highest voting premium (222 percent).

16. These standard errors correspond to GMM standard errors, where the underlying serial correlation is assumed to be of order $N$, where $N$ is the number of companies.

17. Zingales [1994] divides the variable $\Phi/\pi$ by the fraction of voting shares held by small shareholders. This reflects the different rules prevailing in the corporate control market in that country. During the sample period, control in Italy could be acquired with open market purchases on a first-come, first-served basis. Thus, in case of a control contest the value of control was divided only among the shares not held in a block, not among all the voting shares, as occurs with a pro rata tender offer. The results are qualitatively unchanged if the same specification is used here.
TABLE IV
OLS Estimates of the Determinants of the Voting Premium

The voting premium variable is the annual average of the voting premium, as defined in equation (9) in the text. The voting power is equal to $\Phi/\pi$, and is a measure of the probability of a control contest. $\Phi$ is a proxy for the probability of a contested acquisition. It is the Shapley value of votes held by small shareholders, and represents the total probability that votes held by small shareholders are pivotal. $\pi$ is the number of votes divided by the number of shares. Dividend preference is a dummy equal to one for all those company-years in which the inferior voting stock received a larger dividend than the superior voting stock. Size is the logarithm of the total market value of equity at the end of the previous calendar year. The conversion right is a dummy variable equal to one for all those company-years in which the superior voting stock is convertible into the inferior voting one and zero otherwise. Relative volume is the ratio between the annual average number of superior voting shares traded every day divided by the annual average number of inferior voting shares traded every day. The standard errors, reported in parentheses, are robust to heteroskedasticity and serial correlation among observations of the same company in different years.

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voting premium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>5.91</td>
<td>16.62</td>
<td>12.51</td>
</tr>
<tr>
<td></td>
<td>(2.99)</td>
<td>(5.36)</td>
<td>(5.52)</td>
</tr>
<tr>
<td>Voting power</td>
<td>4.17</td>
<td>5.40</td>
<td>5.66</td>
</tr>
<tr>
<td></td>
<td>(1.02)</td>
<td>(0.92)</td>
<td>(0.93)</td>
</tr>
<tr>
<td>Difference in dividends</td>
<td>-5.91</td>
<td>-6.66</td>
<td>-6.02</td>
</tr>
<tr>
<td></td>
<td>(3.26)</td>
<td>(3.58)</td>
<td>(3.90)</td>
</tr>
<tr>
<td>Conversion right</td>
<td>1.91</td>
<td>2.43</td>
<td>4.57</td>
</tr>
<tr>
<td></td>
<td>(3.59)</td>
<td>(3.83)</td>
<td>(3.86)</td>
</tr>
<tr>
<td>Size</td>
<td>-2.60</td>
<td>-2.19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.08)</td>
<td>(1.17)</td>
<td></td>
</tr>
<tr>
<td>Relative volume</td>
<td></td>
<td></td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2.56)</td>
</tr>
<tr>
<td>$R^2$ (%)</td>
<td>8.3</td>
<td>13.7</td>
<td>14.3</td>
</tr>
<tr>
<td>Observations</td>
<td>395</td>
<td>332</td>
<td>308</td>
</tr>
</tbody>
</table>

worth 6 percent more. The estimate of the conversion right coefficient (1.9 percent) implies that the value of the privilege is halved if superior voting shareholders can exchange their shares. The limited explanatory power (just 8.3 percent) suggests that the proxy used does not fully capture the probability of a contested acquisition.

The variable $\Phi$ is a proxy for the probability that a certain ownership structure triggers a control contest. However, there are other factors that influence the chances of a contested acquisition. For example, we know that larger companies are more difficult to
acquire [Palepu 1986]. As a proxy for the cost (and so indirectly, the probability that a company will be acquired), I use the logarithm of the total market capitalization of both classes of stock at the end of the previous calendar year. The specification expressed in equation (14) becomes

\[ VP_{it} = \beta_0 + \beta_1(\Phi/\pi)_{it} + \beta_2\text{DIV}_{it} + \beta_3\text{CONV}_{it} + \beta_4\text{SIZE}_{it} + \epsilon_{it}. \] (15)

Table IV (column II) reports the results of the OLS estimates of equation (15). As expected, a firm’s total market capitalization has a negative impact on the voting premium, and this coefficient is significantly different from zero at the 95 percent level. The explanatory power of the regression rises to 13.7 percent. The other coefficients remain substantially unchanged.

Another possible reason for a price differential between the two classes of stock is a different liquidity. The less traded class, the argument goes, should have higher trading costs. These larger costs should be reflected in a lower price of that class with respect to the more traded one. To investigate this effect, I define the relative volume \((VOL)\) as the average daily volume in the superior voting shares divided by the average trading volume in the inferior voting shares. By inserting the relative volume \(VOL\) into specification (15), I obtain

\[ VP_{it} = \beta_0 + \beta_1(\Phi/\pi)_{it} + \beta_2\text{PREF}_{it} + \beta_3\text{CONV}_{it} \]

\[ + \beta_4\text{SIZE}_{it} + \beta_5\text{VOL}_{it} + \epsilon_{it}. \] (16)

For the reasons mentioned above, the relative volume should have a positive impact on the voting premium. Table IV (column III) reports the results of regression (16). The coefficient \(\beta_5\) is indeed positive, but it is not statistically different from zero. The economic significance of this coefficient is rather small as well. If the volume of trading in superior voting shares drops to a level close to half the trading volume of inferior voting shares, the voting premium drops by only 0.5 percentage points. The \(R^2\) of the regression is equal to 14 percent.

Table V presents the fixed effect estimates of specifications (14), (15), and (16). The two proxies for the probability of a contested acquisition have the expected sign and are statistically different from zero at the 95 percent level. The estimate of \(\beta_1\), which represents the relative size of the private benefits of control,

---

18. As an alternative proxy I tried for the 1990 data the predicted probability of a takeover according to Palepu’s [1986] estimates, but it has no explanatory power.
TABLE V
FIXED EFFECT ESTIMATES OF THE DETERMINANTS OF THE VOTING PREMIUM

The voting premium variable is the annual average of the voting premium, as defined in equation (9) in the text. The voting power is equal to $\Phi/\pi$, and is a measure of the probability of a control contest. $\Phi$ is a proxy for the probability of a contested acquisition. It is the Shapley value of votes held by small shareholders, and represents the total probability that votes held by small shareholders are pivotal. $\pi$ is the number of votes divided by the number of shares. Dividend preference is a dummy equal to one for all those company-years in which the inferior voting stock received a larger dividend than the superior voting stock. Size is the logarithm of the total market value of equity at the end of the previous calendar year. The conversion right is a dummy variable equal to one for all those company-years in which the superior voting stock is convertible into the inferior voting one and zero otherwise. Relative volume is the ratio between the annual average number of superior voting shares traded every day divided by the annual average number of inferior voting shares traded every day. Firm-specific effects are present (not reported). Heteroskedasticity-robust standard errors are reported in parentheses. The $R^2$ is the incremental $R^2$ with respect to a simple regression with only fixed effects.

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voting premium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>12.17</td>
<td>46.20</td>
<td>44.62</td>
</tr>
<tr>
<td></td>
<td>(2.84)</td>
<td>(10.88)</td>
<td>(13.08)</td>
</tr>
<tr>
<td>Voting power</td>
<td>4.27</td>
<td>5.72</td>
<td>4.54</td>
</tr>
<tr>
<td></td>
<td>(1.37)</td>
<td>(2.32)</td>
<td>(2.48)</td>
</tr>
<tr>
<td>Difference in dividends</td>
<td>-16.08</td>
<td>-17.84</td>
<td>-16.15</td>
</tr>
<tr>
<td></td>
<td>(5.53)</td>
<td>(6.26)</td>
<td>(7.00)</td>
</tr>
<tr>
<td>Conversion right</td>
<td>-2.24</td>
<td>8.97</td>
<td>8.51</td>
</tr>
<tr>
<td></td>
<td>(1.70)</td>
<td>(4.50)</td>
<td>(4.83)</td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td>-9.08</td>
<td>-8.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.78)</td>
<td>(3.26)</td>
</tr>
<tr>
<td>Relative volume</td>
<td></td>
<td></td>
<td>-1.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.30)</td>
</tr>
<tr>
<td>$R^2$ (%)</td>
<td>2.7</td>
<td>5.3</td>
<td>3.9</td>
</tr>
<tr>
<td>Observations</td>
<td>395</td>
<td>332</td>
<td>290</td>
</tr>
</tbody>
</table>

is 4.3 percent (versus the 4.2 obtained through OLS). Overall, the results are remarkably close to the OLS ones, suggesting that these are not driven by unobserved firm characteristics correlated with the regressors.

III.6. Sources of Private Benefits

Thus far, the analysis has been carried out under the assumption that private benefits of control are a similar proportion of the value of future dividends in all the companies considered. However,
this proportion is likely to vary across companies. Unfortunately, it is difficult, if not impossible, to directly measure a company’s private benefits. In fact, some corporate benefits are enjoyed exclusively by the management precisely because they cannot be easily measured (and thus claimed) by minority shareholders.

One possible source of private benefits of control is the higher than normal salary that a controlling shareholder might pay to himself. In this case an outsider can easily determine the salary level, but not whether it is excessive. Thus, the board of directors retains a good deal of discretion in deciding the salary. It will not be surprising, then, that the controlling shareholder might use this discretion to his own advantage. Therefore, I will try to identify whether any abnormal level of compensation is reflected in the voting premium. It should be clear that this is not a precise measure of private benefits, but just a proxy for the large shareholder’s ability to allocate corporate resources to his personal advantage.

The summary statistics of the largest shareholder’s salary, in thousands of dollars, are contained in Table II. The sources are the proxy statements of each company. \(^{19}\) The average salary paid to the large shareholder is about $356,000 (median $320,000), with the value ranging from zero (the largest shareholder does not hold any compensated position within the company) up to $1,560,000.

Part of the cross-sectional dispersion is certainly attributable to differences in the size of the companies. Size might be relevant for two reasons. Larger companies require more effort (or more valuable talent) to operate. Therefore, a large shareholder who takes an active role in managing a company may legitimately be paid more. In addition, the relative importance of an abnormally high salary depends on the value of the company. For these reasons, before using compensation data as a proxy for the large shareholder’s ability to extract corporate resources to his own advantage, I have to make two corrections. I first compute the “abnormal” salary as the residual of a regression of salary on the logarithm of the net annual sales and a time trend. Then, for each company-year I divide these residuals (expressed in millions of dollars) by the total equity market value. The median value of the

---

19. Prior to 1993 companies disclosed neither when an option was awarded nor when an option reached maturity. This prevents me from properly computing the value of these options. Given also the limited amount of stock options held by the management of these companies, I limit my attention to the cash salary.
excess salary as a percentage of company capitalization is $-0.02$ percent, with a maximum of 1.9 percent.

This proxy for the large shareholder’s ability to extract corporate resources is then inserted into equation (15) to capture the cross-sectional variations in the relative size of private benefits. Of course, this proxy needs to be interacted with the probability of a control contest. In fact, as equation (11) suggests, the effect of the relative size of the private benefits on the voting premium should be multiplied by the probability that a vote is pivotal (i.e., $\Phi/\pi$). Table VI reports the estimates obtained using this specification. Abnormal salaries have a positively and statistically significant (at the 10 percent level) coefficient. In other words, it seems that the value of this extra compensation is reflected in the market price of votes. The magnitude of the coefficient suggests that an abnormal

**TABLE VI**
**Possible Sources of Private Benefits**

The abnormal salary is the residual of a regression of the largest shareholder’s salary on the logarithm of net sales and a time trend divided by a company’s market capitalization. The salary information is collected from the proxy statements. If the largest shareholder holds no office in the company, the salary is set to zero. The data for net sales are obtained from Lotus Onesource. The voting power is equal to $\Phi/\pi$ and is a measure of the voting power of votes traded on the market. $\Phi$ is a proxy for the probability of a contested acquisition. It is the Shapley value of votes held by small shareholders and represents the total probability that votes held by small shareholders are pivotal. $\pi$ is the number of votes divided by the number of shares. For all other variables see Table IV. The estimates are obtained by OLS. The standard errors, reported in parentheses, are robust to heteroskedasticity and serial correlation among observations of the same company in different years.

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Voting premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>14.74</td>
</tr>
<tr>
<td></td>
<td>(4.85)</td>
</tr>
<tr>
<td>Voting power</td>
<td>5.20</td>
</tr>
<tr>
<td></td>
<td>(1.20)</td>
</tr>
<tr>
<td>Difference in dividends</td>
<td>$-6.29$</td>
</tr>
<tr>
<td></td>
<td>(2.98)</td>
</tr>
<tr>
<td>Conversion right</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>(3.65)</td>
</tr>
<tr>
<td>Size</td>
<td>$-2.13$</td>
</tr>
<tr>
<td></td>
<td>(0.98)</td>
</tr>
<tr>
<td>Abnormal salary × voting power</td>
<td>4.60</td>
</tr>
<tr>
<td></td>
<td>(2.56)</td>
</tr>
<tr>
<td>$R^2$ (%):</td>
<td>29.6</td>
</tr>
<tr>
<td>Observations</td>
<td>258</td>
</tr>
</tbody>
</table>
salary equal to 1 percent of the equity value translates into a 5 percent increase in the relative value of private benefits of control. This specification can explain 30 percent of the overall variability in the voting premiums.

In sum, these results suggest that extra salary (or the conditions that lead to extra salary) might be an important component in determining the size of private benefits obtainable from a company. This also confirms the idea that the value of these private benefits is partially reflected in the stock price.

IV. Conclusions

This paper shows that the value of a vote is determined by the expected additional payments vote holders will receive if there is a control contest. It also argues that the size of this differential payment is a function of the private benefits obtainable from controlling a company. The ownership structure has an impact on the vote value via its effects on the probability of a contested acquisition. As a result, unexpected changes in the ownership structure can have a major impact on the value of votes.

Although dual-class companies are rare in the United States, this does not limit the implications of this paper's findings. The price of any common stock includes the price of its voting rights, even if in most publicly traded companies this value cannot be directly measured. When an event alters the distribution of ownership or the expectation of a contested acquisition, a fraction of the private benefits of control may begin to be reflected in the stock price and to affect its variability in a substantial way.

Further insights can be obtained by comparing the U. S. evidence with studies of the level of the voting premium in other countries. After controlling for ownership concentration, the level of the voting premium in the United States remains substantially below that of foreign countries. This suggests that voting rights are less valuable in the United States because the private benefits of control are smaller, not because ownership is less concentrated.

In the United States strict disclosure enforcement and minority shareholders' suits limit the ability of large shareholders to extract private benefits. For instance, in 1980 Playboy Enterprises (which later became a dual-class company) was charged by the Securities and Exchange Commission for "failing to make adequate disclosures about $2 million in corporate perquisites." The company was found "unable to demonstrate the precise corporate
benefits derived from such expenditures” [The Wall Street Journal, August 14, 1980]. Similarly, in the case of Resorts International, the company where the largest differential takeover premium was paid, minority shareholders sued the company’s management for waste of corporate resources. In both cases the companies chose to settle.

Such suits are unheard of, or even impossible, in many countries. For example, in Italy disclosure enforcement is, to say the least, lax, and a majority vote is required to sue the management. As a result, minority shareholders’ lawsuits are, by definition, impossible. Not surprisingly, Zingales [1994] finds that private benefits account for at least 30 percent of the value of dividends in that country.

This provides a new perspective on the importance of disclosure enforcement and shareholders’ suits. For instance, by looking at a sample of derivative suits, Romano [1991] provides a somewhat negative picture of shareholders’ litigation in the United States. What this paper suggests is that looking at what happens in those countries where such suits cannot be brought may provide a better assessment of the value of these legal institutions.

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