

The Value of the Voting Right: A Study of the Milan Stock Exchange Experience

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I study the large premium (82 percent) attributed to voting shares on the Milan Stock Exchange. The premium varies according to the ownership structure and the concentration of the voting rights, and it can be rationalized in the presence of enormous private benefits of control. A case study seems to indicate that in Italy private benefits of control can easily be worth more than 60 percent of the value of nonvoting equity. A tentative explanation for these findings is provided.

Traditional finance theory disregards the value of voting rights in pricing common stock. In most cases this omission does not seem harmful. Many studies of differential voting stocks in different countries have indicated that voting rights are generally worth between 10 percent and 20 percent of the value of common stock.¹ The Italian evidence I present differs sharply from this view. In Italy voting shares that have inferior dividend rights trade at an average premium

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¹Lease, McConnell, and Mikkelsen (1983) find an average premium of 5.4 percent in the United States, Rydqvist (1987) finds 6.5 percent in Sweden, Horner (1988) about 20 percent in Switzerland, Megginson (1990) 13.3 percent in England, Robinson and White (1990) 23.3 percent in Canada. Only Levy (1982) finds a large premium for Israel (45.5 percent); however, this is just half of the one observed in Italy.

of 82 percent above nonvoting shares. This figure does not take into account that nonvoting shares are entitled to an additional dividend. By taking this privilege into account, the average premium rises to more than 90 percent. In other words, the right to vote is worth approximately as much as the right to receive dividends.

This fact alone makes Italy an interesting case to analyze. Such a large premium cannot be dismissed as a temporary mispricing. Average premia of this size have been observed for years, and they involve one-third of the companies listed on the Milan Stock Exchange (MSE), accounting for more than 57 percent of the total market capitalization. The size of the premium has led some Italian economists to doubt the rationality of the market valuation [e.g., Castellino (1989) and Penati and Di Corato (1989)]. The purpose of this study is to provide a rational explanation for the magnitude of the premium attributed to voting shares (voting premium) and to identify its determinants.

The right to control a corporation is valuable *per se* because it guarantees the owner of this right some unique benefits. Votes allocate control. Therefore, even if outside shareholders do not enjoy these private benefits they may attribute some value to voting rights as long as there is competition among different management teams to acquire those votes. In particular, votes held by small outside shareholders become very valuable when they are pivotal, that is, when they are decisive in attributing control to any of the management teams fighting for it. Therefore, the observed size of the voting premium is related to the size of private benefits and to the degree of competition in the market for corporate control. In order to justify the Italian evidence I have to show that Italy stands out in both dimensions: private benefits are particularly large and competition for control is particularly intense. This article is designed to substantiate this conjecture.

If there were no private benefits, there would be no reasons to hold large blocks of share in any one company. Therefore, the high level of concentration of ownership in Italian companies is by itself an indication of the large value of control. At the same time, the presence of many large shareholders (and not just one) suggests an intense competition for control. I study the relationship between ownership structure and level of the voting premium by using various measures of ownership concentration, and find some remarkable regularities.

The existence of a majority shareholder dwarfs any possible competitor for control. Consistent with this view is the fact that companies controlled by a majority shareholder have a significantly smaller voting premium. The premium becomes even smaller if the control of a company is not expected to change hands. This is the case of state-controlled companies during the sample period.

In contrast, outside shareholders may expect to receive more when competition for control is more intense. The intensity of competition is higher when many shareholders have a large stake but none has locked in control with a majority position. In such cases, to measure the strategic value of voting rights in the hands of small shareholders, I use, as Rydqvist (1987), the Shapley value of small shareholders' votes. This variable turns out to be a significant explanatory variable of the cross-sectional and time-series variations in the voting premia.

The estimates obtained in the panel data analysis indicate that the value of control is extremely high in Italy, as valuable as the right to receive dividends. To confirm this result I estimate the value of control in a highly visible case. The premium paid for voting shares by whoever acquires a controlling block represents a lower bound on the level of his private benefits. Therefore, by looking at the increase in the price differential between voting and nonvoting shares at the time the decision to sell a state-controlled company is announced, I am able to obtain a lower bound estimate for the private benefits of control of the potential acquirer. The estimate suggests that the value in controlling a corporation is well above 60 percent of the value of equity.

These results leave open the question of why private benefits are so large in Italy. I propose that one possible reason is that whoever controls a company can dilute minority property rights to a greater extent in Italy than in other countries. To support this conjecture I present a case in which even a state-owned company allegedly diluted minority property rights.

The rest of the paper proceeds as follows. Section 1 introduces the characteristics of the securities studied in the paper. Section 2 describes the sample used and provides some summary statistics. The sample includes all the companies having both voting and nonvoting stock traded on the Milan Stock Exchange between 1987 and 1990. Section 3 contains the results of the regression analysis. Different measures of ownership concentration are used as explanatory variables in a panel data analysis of the voting premium. Section 4 presents an alternative estimate of private benefits of control, which confirms how large they are in Italy. Finally, Section 5 conjectures why private benefits should be larger in Italy and presents an example supporting this view. The last section summarizes the results and indicates the directions for future research.

1. The Institutional Background

The purpose of this section is to provide a brief description of the important features of the Italian securities studied in this article. In

Italy, besides a one share-one vote common stock, companies can issue a nonvoting stock called *savings shares* (*azioni di risparmio*).² Multiple voting shares were outlawed in 1942.³

Savings shares are entitled to a minimum dividend, equal to 5 percent of the par value. In addition, whenever a dividend is paid to common stock, savings shares are entitled to receive an equal dividend plus 2 percent of the par value. In the case of liquidation, savings shares enjoy seniority over other shares at an amount equal to the par value, and they have equal rights over what is left after redeeming the par value of all shareholders.⁴ However, savings shares do not have any voting rights.

The issuance of savings shares was introduced by a special law in 1974 intended to promote stock ownership among small investors. The law specified the minimum features with respect to dividends and preferred claims. Issuing companies are allowed to increase them but not to reduce them.

All these features are stated in terms of the shares' par value, which is the legal lower bound for the subscription price. However, most of the shares are issued at a multiple of the par value, and almost all of them are traded at a multiple. For example, at the beginning of 1990 the market value of a nonvoting share was on the average 5.6 times as much as the par value, and the average size of the extra dividend privilege, in terms of the market value of the shares, was 0.87 percent.

In the absence of any privileged treatment in terms of dividends or liquidation, the price estimate of a voting right would simply be the difference between the price of a voting share and the price of a nonvoting (savings) share. Therefore, the proportional voting premium of company i (VP_i) would be

$$VP_i = (P'_{vt} - P'_{nvt}) / P'_{nvt}, \quad (1)$$

where P'_{vt} (P'_{nvt}) is the price of a voting (nonvoting) share.

Because of the differential dividend rights, a correction is required. To disentangle the value of a pure nonvoting stock from the value of the dividend privilege, I consider savings shares as composed of three elements: a common share without voting rights, the right to an additional dividend (equal to 2 percent or more of the par value), and the right to receive up to 3 percent of the par value dividend,

² There is also a third type of shares called preferred shares. They are not very widespread (only 13 companies have them), and they do not provide an easy instrument to estimate the value of voting rights. For this reason my analysis will focus only on savings shares. The interested reader can find the characteristics of this class of stock in Zingales (1992a).

³ The Civil Code of 1942 exempted multiple voting shares in existence at that time. Only one company (Saffa) still has a trivial amount (0.4 percent) of multiple voting shares.

⁴ The par value of voting and nonvoting shares is the same

when “normal” common stock dividend is less than 3 percent of the par value.⁵ In the sample the right to a minimum dividend provided a differential payment only 6 percent of the firm-years. The payment corresponded to less than 1 percent of the market price of a nonvoting share, because the par value is equal, on average, to 18 percent of the market price of a nonvoting share. In other words, this right has little economic value. Thus, in the subsequent analysis I take into account the extra dividend right of the savings shares, but I overlook the value of the minimum dividend. The effect of this choice is to underestimate the value of the voting right, but the effect should be minor.

Therefore, the estimated voting premium ($\widehat{VP}_i$) is equal to the true voting premium minus the additional dividend yield of nonvoting shares:

$$\widehat{VP}_i = VP_i - \epsilon' / (\rho' P_{nvt}'), \quad (2)$$

where ϵ' is the amount of the additional dividend attributed to nonvoting shares (generally an order of magnitude of 2 to 5 cents per year), and ρ' is the appropriate discount factor.

Nonvoting shareholders also have a small fiscal advantage, because they can choose between two different tax treatments for their dividend income. In Italy dividends of voting shares are taxed as ordinary income, after receiving a credit for the taxes paid at a corporate level. In contrast, nonvoting shareholders have the right to choose between this tax treatment or a fixed 15 percent tax, independent of their income. In this last case they lose the corporate tax credit. This second option becomes valuable only for people in the very high income brackets (marginal tax rate above 45.6 percent). However, these people have an alternative instrument to minimize their tax liability: trading around the ex dividend day.⁶ In addition, dividend yields are fairly low (2.7 percent). Therefore, the value of the option to choose between the two tax treatments is likely to be very small, and I decided to overlook it. Again, this omission underestimates the voting premium, but only by a small amount relative to the size of the premia in my sample.

2. Data

The sample consists of all the companies having both a voting and nonvoting stock traded on the MSE between 1987 and 1990.⁷ Non-

⁵In practice, a nonvoting share pays $(d_i + 2\% \text{ par} \mid d_i > 3\% \text{ par}) + (5\% \text{ par} \mid d_i \leq 3\%)$, where d_i is the dividend paid to all shareholders. This can be rewritten as the right to receive $d_i + 2\% \text{ par} + (3\% \text{ par} - d_i \mid d_i \leq 3\% \text{ par})$.

⁶Michaely and Murgia (1992) show a substantially higher volume in ordinary shares around the ex dividend day that they attribute to a tax avoidance strategy.

⁷Only companies listed on a stock exchange can issue nonvoting shares. The law provides an

voting shares convertible into voting shares are excluded until expiration of their conversion right.⁸

The spread of nonvoting shares on the MSE is a recent phenomenon. Although nonvoting shares have been allowed on the MSE since 1974, at the beginning of 1980 only six minor companies had introduced a nonvoting class of common stock. Only in the mid-1980s did this option become really popular. In particular, during 1985 and 1986, 44 companies introduced a new class of nonvoting shares.⁹

For this reason, my sample starts at the beginning of 1987, when there were 64 dual-class stock companies listed on the MSE. The sample ends at the beginning of 1990, when 84 out of 206 companies had nonvoting shares outstanding. The total sample includes 301 firm-years.¹⁰ The data on the ownership structure, the number of shares outstanding, and the dividend privilege are taken from a stock exchange handbook, *Il Taccuino dell'Azionista*. In two cases the ownership structure is not reported, which leaves 299 firm-years in the sample.

Il Taccuino dell'Azionista is an annual publication issued in January of each year listing the most current data as of December 31. For this reason I consider the price data in the first five trading days of each year. These are taken from a financial weekly publication, *Milano Finanza*. The voting premium is quite stable over a short period. In contrast, it is impossible to recover the ownership structure during the year.¹¹ For this reason, I prefer to avoid time averaging the premia across long periods because this would have incorrectly measured the effect of ownership on the voting premia. A comparison between the price differentials at the beginning of 1990 and an average over the first half of 1990 fails to show significant differences.

2.1 Summary statistics

Table 1 presents the general characteristics of this sample. These characteristics are similar to those found in other companies on the MSE. The average capitalization (\$931 million) is larger than the average across all companies on the MSE in 1989 (\$661 million). This

automatic enlistment of the nonvoting share In the stock exchange In which Its voting counterpart is traded.

⁸The price differential between voting shares and convertible nonvoting shares is roughly zero.

⁹Between 1974 and 1984 the performance of the MSE was dismal, and equity issues were very rare. During the stock market boom of the mid-1980s, many companies decided to issue stock. At that time they started to issue nonvoting shares as well.

¹⁰The total number of companies is 96. Companies are added when they introduce a nonvoting class or if their nonvoting class ceases being convertible. Firms are deleted if they are delisted, because of a merger or acquisition.

¹¹Major shareholders are obliged to report their trades within 30 days to the Italian equivalent of the SEC (CONSOB), but this agency does not release them to the public.

Table 1
Summary statistics

Variable	Mean	Median	SD	Min.	Max.
Voting premium (%)	81.5	73.7	64.9	-44.4	435.0
Differential div. (%)	1.0	0.8	0.9	0.1	6.1
Fraction voting shares (π)	0.74	0.74	0.14	0.50	0.99
Size largest shareholder (%)	51.7	52.0	16.7	5.2	92.0
Size second largest shareholder (%)	6.3	0.0	8.2	0.0	43.2
RSV	0.2	0.0	0.4	0.0	3.6
E-P ratio (%)	5.6	5.6	4.2	0.0	22.3
Market cap. (million \$)	931	348	1866	12	17,899

The voting premium is the grand average of VP_{it} , where VP_{it} is the percentage premium of voting over nonvoting shares for company i at the beginning (first five trading days) of year t . The dividend privilege is the percentage size of the additional dividend yield of the nonvoting shares at the beginning of each year. π is the fraction of voting shares over total number of shares in company i at the beginning of each year. The size of the largest (second largest) shareholder is computed as the percentage of the voting shares held at the beginning of each year by the largest (second largest) shareholder. RSV is the Shapley value of votes held by small shareholders (those who own less than 5 percent of the votes) divided by the fraction of votes they hold. Earnings to price ratios are 1990 data computed using voting shares prices. Market capitalization is in million U.S. \$ ($1\$ = 1500$ Lit.). Total number of observations 299.

is consistent with the fact that many large companies such as Olivetti (a computer maker), Montedison (a chemistry company), and Fiat (a car maker and the largest company for market capitalization in the sample) issued nonvoting shares. Although not all large companies have a nonvoting stock,¹² it is interesting that nonvoting stocks are not concentrated in smaller companies, as in the United States.

In 1990 the average price-earning ratio for the companies in the sample is 17.9, slightly higher than the average price-earning ratio of the MSE in the same year (16.5). The average additional dividend paid to nonvoting shares (1.06 percent) represents 40 percent of the average dividend yield across all MSE companies (2.73 percent in 1989). Therefore, on the average, nonvoting shares have a dividend yield 1.4 times as large as the average dividend yield on the MSE. For this reason the size of the price differential is even more striking.

The average size of the largest shareholder in my sample (52.2 percent) is roughly equal to the average size across all Italian companies—for example, 56.7 percent in 1987 and 55.5 percent in 1990. This might seem a very large number. The Italian corporate sector, though, is characterized by a very concentrated ownership structure.

Ownership concentration does not seem very different from that observed by DeAngelo and DeAngelo (1985) in dual-class companies in the United States (55 percent of the superior voting stock owned by insiders). However, in the United States dual-class companies are

¹² For example, Assicurazioni Generali, an insurance company of approximately the same market capitalization as Fiat, has none.

relatively small companies, and large companies have a much more diffuse ownership [Shleifer and Vishny (1986)]. In addition, DeAngelo and DeAngelo's figures refer to the total ownership by insiders. On the contrary, my data refer only to the largest shareholder. Italy is characterized by a presence of additional large shareholders beyond the largest one. The five largest shareholders control 81 percent of the voting power in Italy. As I will show, this intense competition for control can partially account for the size of the voting premium.

2.2 Ownership data

I report the ownership data as presented by the stock exchange handbook with two exceptions. First, I combine the holdings of different companies in a subsidiary whenever these companies are majority controlled by the same parent company. For example, I consider IFIL corporation to own 54.1 percent of the Toro corporation, because the two majority-owned subsidiaries of IFIL (Sicind and Spafind) own 32.9 percent and 21.1 percent, respectively, of Toro voting shares. This approach is conservative in the sense that it tends to underestimate the actual concentration of ownership.¹³ Nevertheless, more than 50 percent of the companies in the sample are majority owned.

The second exception concerns voting trusts (*Patti di Sindacato*). Whenever the shares of the members of a voting trust are not deposited in a holding company, I prefer to report the holdings separately. The legal status of voting trusts is not clear. To be legal, voting trusts should not totally bind the voting power of their members. Furthermore, these agreements should be limited in time to a few years. Therefore, even if the actual voting power is somehow constrained, the future bargaining power, at the next renewal, will depend on the individual holdings. For these reasons I prefer to divide voting trust holdings into the separate individual holdings of their members.

I follow the handbook's convention for family holdings. When the handbook divides family holdings among the family members, so do I. Otherwise, family holdings are reported as a unique block. In particular, the votes are reported as a unique block whenever a family established a holding company to keep its member votes together. It is generally true that family members tend to vote together. However, it is not unusual that disagreements within the family create contests over control. Anticipating possible dissidence, many families create a family holding company, whose only purpose is to maintain the controlling block of shares. In this way possible disagreements

¹³ In fact, in some cases effective control is exercised even with smaller blocks. Suppose that IFIL had 49 percent in one of the two subsidiaries that owned shares in Toro Corp. According to the above definition, Toro would be nonmajority owned, but IFIL would probably be in control.

arise inside the privately held holding company and not inside the public company. In this last case it is certainly correct to consider all the shares as a block. In the other cases I follow the guidelines of the handbook.

There is very little data on who owns the nonvoting shares. Most of them are issued in bearer form in which there is no reporting requirement. Some clues may come from mutual funds that are obliged to report their composition every quarter. Their holdings, as a proportion of the outstanding number of shares of each class, are tilted toward nonvoting shares. However, they maintain a large proportion of voting shares too. For example, at the end of 1988 all the mutual funds together owned 13.4 percent of Fiat common stock, 22.13 percent of Fiat preferred stock, and 17.81 percent of Fiat nonvoting stock. In the case of Montedison they owned only 3.84 percent of the outstanding voting stock and 22.53 percent of the outstanding nonvoting one. The law requires that the number of outstanding voting shares be always greater than the sum of the outstanding preferred and nonvoting shares. Therefore, even if they had equal prices, the market capitalization of voting shares would be larger. For this reason the tilt is completely reversed if I look at the amount of dollars (or lire) invested by mutual funds in each type of securities. For example, until the end of 1988 mutual funds as a whole invested twice as much money in voting Fiat shares as they did in Fiat preferred shares, and 5.8 times as much money as in nonvoting Fiat shares.

2.3 Liquidity

It is difficult to judge the liquidity of the two classes. There are always more voting than nonvoting shares outstanding. However, a larger proportion of voting shares are held in block and never traded. As a result, the turnover (number of shares traded over number of shares outstanding) is generally larger for nonvoting shares. However, the number of shares traded and the total value of transactions are generally higher for voting shares. Pagano and Roell (1990) compute the Roll (1984) measure of bid-ask spread implicit in the weekly returns of Italian stocks.¹⁴ The voting shares have a slightly larger bid-ask spread than the nonvoting shares (0.2 percent more).¹⁵ This suggests that the large discount of nonvoting shares is not caused by an inferior liquidity. Furthermore, convertible nonvoting shares are traded even

¹⁴On the MSE the trading mechanism is an open outcry. Therefore, there are no measures of actual bid-ask spread.

¹⁵The Pagano and Roell (1990) sample includes 69 companies, 26 of which have dual-class shares. However, in 1988 (the last complete year in their sample) the estimated spread of the voting and that of the nonvoting shares are jointly positive only in 12 cases. Therefore, the comparison is limited to these 12 cases.

less than nonvoting shares; nevertheless, they generally sell at a premium with respect to voting shares.¹⁶

2.4 Proxies for the allocation of control

The Shapley value of votes held by small shareholders is the main proxy for the control value of these votes. This can be thought of as the probability that those votes are pivotal in a random coalition formation. Dividing this probability by the fraction of votes held by small shareholders yields the relative Shapley value (RSV). The value of RSV in the presence of only two large shareholders is shown in Figure 1.

To compute the Shapley value, I arbitrarily defined as large players those who owned 5 percent or more of a company's voting shares. This cutoff is not crucial since the value per vote of a major shareholder approaches the value per vote of dispersed shareholders as the large shareholder's stake tends to zero [Milnor and Shapley (1961, Theorem 4)]. By using this cutoff, I never obtained more than eight large shareholders. By dividing the Shapley value by the fraction of votes held by small shareholders, I obtained RSV. Summary statistics for RSV are presented in Table 1.

An alternative proxy used is a dummy (DCONTR) equal to unity when one shareholder owns a majority of stock and equal to zero otherwise. In the sample 197 company-years are characterized by a majority ownership. I also constructed a dummy equal to unity if there were at least two large shareholders (i.e., those owning more than 5 percent of votes), but none controlled a majority of the votes. This dummy is intended to capture the probability of an internal dispute for control. Overall 79 company-years fell in this category.

3. Empirical Analysis of the Determination of the voting Premium

This section explains the time-series and cross-sectional changes in the voting premium based on the idea that voting rights are valuable because they give access to private benefits of control.

3.1 The empirical specification

A company's income is assumed to be divided into a verifiable component and a nonverifiable component (private benefits of control). The first component (V) belongs to all shareholders in equal amounts. The second component (B) belongs only to those in control. How-

¹⁶For example, I computed the average premium of voting shares with respect to convertible nonvoting shares for the companies included in my sample. In the period 1987-1990 this premium was -3.1 percent.

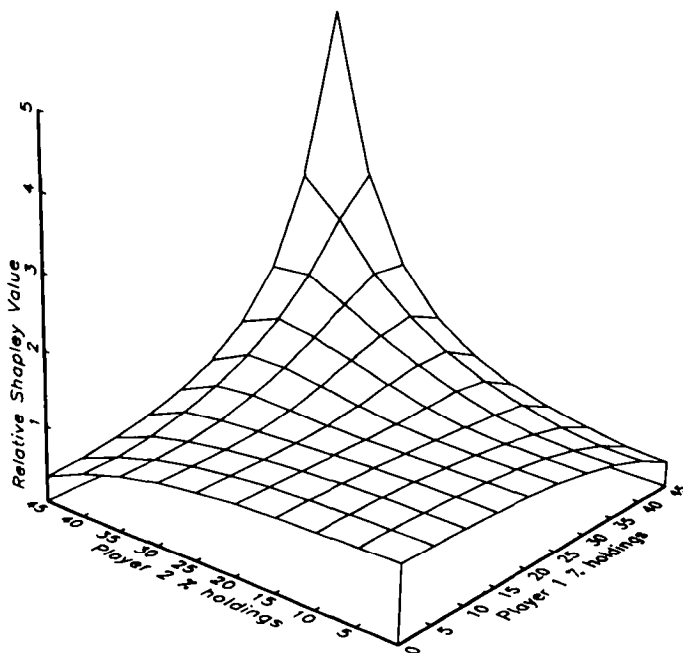


Figure 1

Relative Shapley value of small shareholders in the presence of two large shareholders

The relative Shapley value is the Shapley value of the block of shares held by small shareholders divided by the total size of their block (RSV). In the figure 1 represent this value for a game with only two large shareholders.

ever, in a competitive market for control, outside voting shareholders may expect to obtain part of these benefits. Let β be the ratio of the two components ($\beta = B/V$).

The present value of the verifiable income is equal to the price of a nonvoting share times the number of shares outstanding: $V = P_{nv}N$. Assume for the sake of exposition that private benefits of control are allocated evenly among voting shareholders. Then the private-benefits component would be equal to the value of one voting right (RT) times the number of voting shares outstanding (N_v):

$$B = (RT)N_v = (P_v - P_{nv})N_v.$$

Consider the voting premium as defined in Equation (1). Then if private benefits of control were evenly allocated among voting shareholders, this voting premium would be equal to the proportion of private benefits divided by the proportion of voting shares:

$$VP \equiv \frac{P_v - P_{nv}}{P_{nv}} = \frac{RT}{V/N} = \frac{B}{N_v V} = \frac{\beta}{\pi}, \quad (3)$$

where π is the proportion of voting shares and $P_{nv} = V/N$.

In practice one should consider two problems. First, private benefits are not equally distributed among shareholders, and therefore not all voting rights are worth the same. Second, the prices observed reflect transactions among small outside shareholders. Therefore, the recorded voting premium should reflect the fraction of private benefits allocated to voting rights owned by outside shareholders.

By framing the problem of allocation of control as a majority game in a cooperative context it is possible to express the expected value of the private benefits attributed to outside shareholders as the Shapley value of the votes held by small shareholders divided by the fraction of voting shares they hold.¹⁷ In such a case the recorded voting premium should be equal to

$$VP = \beta(RSV/\pi), \quad (4)$$

where RSV indicates the relative Shapley value of votes held by small shareholders.¹⁸

The theoretical foundations of the Shapley value are not widely accepted. However, the features of the solution obtained are very sensible. As one can see in Figure 1, RSV attributes no value to votes of outside shareholders when one individual owns more than 50 percent of the votes, very little value when one shareholder owns a large but minority proportion of votes and no others hold any significant block, and very high value when two groups own large proportions of voting stocks and the pivotal votes between the two groups are held by small shareholders.

The function of RSV is to provide a technique to compute what fraction of power is detained by outside shareholders and, correspondingly, what fraction of private benefits they may expect to receive in the form of a larger premium in the case of a contested acquisition. To highlight that the Shapley value is merely a convenient technique and that any sensible measure of the voting power of outside shareholders would provide the same results, I also test different versions of Equation (4), substituting RSV with alternative proxies for the power of outside shareholders' votes. For example, I consider a simple dummy (DCONTR) equal to unity when one shareholder owns a majority of stock and equal to zero otherwise. As Manne says, "if one person owns 51 percent of the shares of a company, nothing will be paid for the vote attached to the other shares" (1965, p. 117). As

¹⁷ See Zingales (1992a). The Shapley value used here is a modified version of the usual Shapley value. This version takes into account that in public corporation there is a large fraction of very small shareholders [see Milnor and Shapley (1961)]. The first application of this technique to pricing differential voting stock is Rydqvist (1987), followed by Robinson and White (1990).

¹⁸ The Shapley value of outside shareholders' votes is simply the probability that those votes are pivotal in a random coalition formation. Dividing this probability by the fraction of votes held by small shareholders yields RSV.

alternatives, the actual dimensions of the largest and second-largest shareholders are considered as well.

In implementing the test of Equation (4), one must notice two problems. First, the observed premium (VP) reflects also the dividend preference of nonvoting shares. Therefore, by using Equation (2) I obtain

$$\widehat{VP} = \beta(RSV/\pi) - \epsilon/(\rho P_{nv}). \quad (5)$$

The second problem concerns the time-series and cross-sectional variability of the proportion of private benefits β . To estimate Equation (5) I have to assume either that β is a constant or that its fluctuations are independent of my right-hand-side variables. Similarly, the discount rate is assumed to be constant across stocks and through time.

3.2 Results

As a starting point, I consider a specification similar to the one Rydqvist (1987) used for Sweden and Robinson and White (1990) used for Canada. I estimate the basic regression

$$\widehat{VP}_{it} = \alpha + \beta(RSV/\pi)_{it} + \gamma(\epsilon/P_{nv})_{it} + u_{it} \quad (6)$$

by OLS separately for each year, where RSV is the relative Shapley value of votes held by small shareholders, π is the proportion of voting shares outstanding, and ϵ/P_{nv} is the additional dividend yield guaranteed to nonvoting shares. The results of these regressions are reported in Table 2. The coefficient β (the average proportion of private benefits) always has the expected sign, and it is significantly different from zero at a 1 percent level in three out of four years. Therefore, in Italy private benefits of control represent between 16 percent and 37 percent of the value of the underlying assets. In Sweden, Rydqvist finds a percentage between 3 percent and 8 percent, whereas in Canada a similar model fails to show a significantly positive slope.¹⁹

The coefficient γ ($\gamma = -1/\rho$) is always negative, as expected, and is always significantly different from zero at a 10 percent level. Its size varies substantially during the different years, but it is always included in a reasonable range; that is, the implicit discount factor is included between 20 and 5 percent. The regression explains between 5 and 15 percent of the cross-sectional variability.

The last column of Table 2 presents the results of an OLS regression obtained by pooling the four years in the sample. In this case the

¹⁹ Robinson and White (1990) test a similar model among Canadian companies that do not require an equal payment to both classes of stock in case of a takeover, and reject the model. On the contrary, the model has some predictive power among companies that do require payment to both classes of stock in case of a takeover. For the interpretation of these results see Robinson and White (1990).

Table 2

Determinants of the voting premium $VP_{it} = \alpha + \beta(RSV/\pi)_{it} + \gamma Privilege_{it} + \epsilon_{it}$

	1987	1988	1989	1990	Pooled
Constant	59.2 (6.0)	89.2 (16.8)	102.9 (12.1)	85.9 (9.5)	82.7 (7.7)
RSV/ π	24.5 (7.3)	16.1 (13.8)	36.8 (15.1)	35.2 (8.9)	29.2 (7.5)
Privilege	-4.8 (2.9)	-12.7 (6.5)	-11.7 (5.9)	-21.3 (7.8)	-10.3 (3.7)
R^2 (%)	16.7	5.2	9.6	19.6	9.3
Observations	62	75	78	84	299

VP_{it} is the percentage premium of voting over nonvoting shares for company i at the beginning (first five trading days) of year t . RSV _{i} is the Shapley value of votes held by small shareholders (those who own less than 5 percent of the votes) divided by the fraction of votes they hold. Votes ownership is computed at the beginning of each year, using data updated through the end of the previous year. π is the fraction of voting shares over total number of shares in company i at the beginning of each year. The privilege is the percentage share of the additional dividend yield of the nonvoting shares at the beginning of each year. All estimates are obtained by OLS. Heteroskedasticity robust standard errors are reported in parentheses. For the pooled regression the standard errors are robust with regard to heteroskedasticity and to serial correlation between observations of the same companies.

standard errors are not only heteroskedasticity robust, but they are also corrected to account for possible serial correlation among the residuals of the same companies in different years.²⁰ The results are substantially the same. The proportion of private benefits over security benefits, represented by the slope coefficients β , is 29.2 percent, and the implicit estimate of the discount factor is 10 percent. The regression explains 9 percent of the total variability.

There is not much time variation in the ownership structure of the companies during the sample period. There is only one case of a large change in the RSV. For the holding company Cofide RSV changes from 0 to 3.57 between 1987 and 1990; meanwhile the voting premium changed from 75 to 200 percent. It would be incorrect to infer that this outlier drives the results.²¹ On the contrary, eliminating this observation only slightly reduces the significance level of the results, without affecting them in any substantial way. Therefore, all the subsequent regressions drop this observation.

The results do not change substantially if I substitute other proxies for the allocation of power to the RSV variable. Table 3 summarizes the results. Column I reports the original regression after the outlier is eliminated. Column II substitutes the majority-control dummy for RSV. The results are substantially identical to the one obtained with

²⁰ 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.

²¹ The level of the RSV for Cofide in 1990 is abnormally high—twice as much as the second-highest RSV in the sample and four times the average RSV among nonmajority-owned companies (0.9).

Table 3
Alternative specifications

	I	II	III	IV	V	VI	VII
Constant	82.3 (8.0)	112.5 (10.1)	92.4 (16.6)	131.5 (14.5)	89.3 (31.5)	83.5 (7.9)	79.5 (7.9)
Privilege	-10.2 (3.8)	-11.2 (3.8)	-10.5 (3.7)	-10.3 (3.8)	-10.2 (3.8)	-10.9 (3.9)	-10.2 (3.8)
RSV/ π	30.5 (9.9)		21.7 (16.6)		27.4 (19.6)		25.4 (11.2)
Majority-owned dummy		-30.2 (10.6)	-10.8 (17.0)				
Size largest shareholder				-0.77 (0.28)	-0.12 (0.54)		
Size second-larg. share-holder						1.42 (0.53)	0.70 (0.55)
R ² (%)	8.3	7.7	8.4	6.7	8.3	5.8	8.9

RSV_{*i*} is the Shapley value of votes held by small shareholders (those who own less than 5 percent of the votes) divided by the fraction of votes they hold. Votes ownership is computed at the beginning of each year, using data updated through the end of the previous year. π is the fraction of voting shares in company *i* at the beginning of each year. The majority-owned dummy takes the value of unity when one shareholder owns 50 percent or more of the votes, and zero otherwise. The size of the largest (second largest) shareholder is the fraction of votes held by the largest shareholder (second largest) in a company. All estimates are obtained by OLS and have 298 observations (one outlier dropped). The standard errors (reported in parentheses) are robust with respect to heteroskedasticity and to serial correlation among observations of the same companies.

RSV; only the explanatory power of the regression is slightly weaker. Because of the strong multicollinearity between RSV and DCONTR ($\rho = -0.73$), both variables turn out not significant in a multiple regression (column III).

Similar results are obtained if the size of the largest shareholder or second-largest shareholder is used as a proxy for the share of private benefits that outside shareholders may expect to receive (respectively, columns IV and V and columns VI and VII). When used alone these proxies have the expected sign, which is statistically significant. When jointly used with RSV, both variables lose statistical significance because of multicollinearity. If anything, the actual size of the largest shareholder adds noise with respect to the information provided by the simple dummy for control.²²

In summary, the RSV variable does only slightly better than other sensible measure of the allocation of control. In particular, most of the effect can be captured by a simple dummy for majority control. This result confirms the view that the premium is intrinsically related to the value of control via the ownership structure. However, the large

²² I also considered a dummy equal to unity if there were at least two large shareholders (i.e., shareholders owning more than 5 percent of votes) but no party controlled a majority of the votes. This dummy was supposed to capture the probability of an internal dispute for control. Its explanatory power is inferior to that of the actual size of the second-largest shareholder.

value of the intercept, which in the basic model varies between 60 and 103 percent and is always significantly different from zero, remains to be explained.

3.3 Why a positive intercept?

A positive intercept can result from two different problems: a misspecification of the entire model or a shortcoming of RSV (and the other proxies) in capturing the value of control allocated to outside shareholders. Suppose, for example, that voting shares were more valuable for other reasons not related to control (e.g., a liquidity premium or some form of mispricing). Then, a positive intercept would just be the result of the failure of the specification to account for these aspects. However, it is very unlikely that this deviation from Equation (5) will be correlated with the proportion of voting shares outstanding. A liquidity premium or some form of clientele effect is more likely to be related to the total number of outstanding shares of one class rather than to the relative quantity of the two classes.

Alternatively, the problem may arise because the proxies used do not fully capture all the aspects of the allocation of control. For example, the market might have anticipated the introduction of a new law regulating acquisitions. In January 1992 the Parliament approved a law requiring that every acquisition of more than 30 percent of the stock of one company be followed by a tender offer to all voting shares at the same price.²³ According to this law, even when a majority block changes hands, all voting shareholders should receive the same price. The law was approved after the end of my sample, but proposals in that direction were presented many years before.²⁴

Therefore, under the new law the voting premium reflects the fraction of private benefits an incumbent management is able to extract from the acquirer in case of a change in control, independent of the ownership structure. In such a case the correct expression for the voting premium is Equation (3), because the value of the private benefits embedded in the premium is equally distributed among voting shareholders.

If the possibility of the new law is considered, then before the introduction of the law the voting premium should be a weighted average of the voting premium under the two scenarios:

²³ Even though the text of the law is not clear, it has been interpreted that this requirement applies only to voting shares. In January 1993, some governmental dispositions generated the suspicion that nonvoting shares of companies to be privatized would be included in the tender offer. The possibility of this caused large price increases in nonvoting shares of companies to be privatized. These price increases were subsequently reversed when this possibility was officially denied.

²⁴ The text approved was first proposed in June 1988, but similar proposals were presented even earlier. See Balzarini (1991).

$$VP = \delta \beta p / \pi + (1 - \delta) \beta (RSV / \pi), \quad (7)$$

where δ is the probability the law is approved and p the probability that a block larger than 30 percent would change hands. Therefore, under this hypothesis deviations from Equation (4) should be proportional to the inverse of the percentage of voting shares.

Similarly, it is possible that the voting premium correctly reflects the value of voting rights, but the proxies used do not fully capture the determinants of this value. For example, all the proxies considered do not account for expectations on future events. A majority-controlled company has a zero RSV, but one might reasonably believe that voting rights are valuable if the majority control were not likely to last.²⁵ Also in this case it is possible to prove that the deviations from Equation (4) are proportional to the inverse of the percentage of voting shares.²⁶

Therefore, it is possible to distinguish whether the rejection of the model is due to a liquidity effect or to an inappropriate measure of the effective voting power of outside shareholders by inserting the variable $1/\pi$ in regression (6):

$$\widehat{VP}_i = \alpha + \beta_0 \frac{1}{\pi} + \beta_1 \left(\frac{RSV}{\pi} \right)_i + \gamma \left(\frac{\epsilon}{P_{nv}} \right)_i + u_i. \quad (8)$$

In this case $\alpha \neq 0$ implies that there is something other than control value that makes voting shares more (less) valuable.²⁷ In contrast $\beta_0 \neq 0$ means that the Shapley value measure (and the other proxies) does not fully capture the full nature of the control game.²⁸

The results of regression (8) are reported in Table 4, column II. Now the intercept α is negative and not statistically different from zero. In contrast, β_0 is positive and highly significant. Therefore, the higher the proportion of voting shares outstanding, the smaller is the voting premium. This result supports the hypothesis that the presence of a positive intercept in regression (6) is due to a failure of the

²⁵ A case is represented, for example, by a state-owned company after the announcement of a privatization plan.

²⁶ In this case the appropriate expression for the voting premium is

$$VP = \lambda \beta (RSV_i / \pi) + (1 - \lambda) \beta (RSV_0 / \pi),$$

where λ is the probability that the majority control will end, RSV_i is the relative Shapley value after the end of the majority control, and RSV_0 is the relative Shapley value before then (i.e., zero). In this case I do not know what RSV_i would be, but I know that the deviations from (4) will be proportional to $1/\pi$.

²⁷ Note from Table 1 that π varies between 0.5 and 0.99, with a standard deviation of 0.13. Therefore, I do not introduce another constant.

²⁸ I report the results of this analysis using RSV. Similar results can be obtained by using the other proxies.

Table 4
The sources of a positive intercept

	I	II	III
Constant	82.3 (8.0)	-13.9 (26.2)	-25.7 (24.5)
Privilege	-10.2 (3.8)	-10.4 (3.7)	-10.7 (3.7)
Inverse perc. voting shares		68.4 (17.4)	82.7 (16.2)
RSV/ π	30.5 (9.9)	31.4 (8.5)	24.4 (8.2)
State-owned dummy			-43.6 (4.7)
R^2 (%)	8.3	16.8	25.0

RSV_{*i*} is the Shapley value of votes held by small shareholders (those who own less than 5 percent). Votes ownership is computed at the beginning of each year, using data updated through the end of the previous year. π is the fraction of voting shares in company *i* at the beginning of each year. The privilege is the percentage size of the additional dividend yield of the nonvoting shares at the beginning of each year. The state-owned dummy is equal to unity if the company is majority owned by the Italian government and zero otherwise. This dummy is then multiplied by the inverse of the fraction of voting shares. All estimates are obtained by OLS and have 298 observations (one outlier dropped). The standard errors (reported in parentheses) are robust with respect to heteroskedasticity and to serial correlation among observations of the same companies.

various proxies used to properly capture the the voting power of outside shareholders.²⁹ In contrast, there is no support for the liquidity hypothesis.

The coefficients of the other two variables are unchanged with respect to the previous estimates (column I). However, the overall explanatory power of the regression is enhanced to 17 percent. The conclusion is that votes are more valuable when the control situation is unstable ($RSV > 0$), but they are still very valuable when a company is majority controlled. The relative value of control obtained by summing β_0 and β_1 is now 99.8 percent.³⁰ Therefore, on the average, voting rights are worth as much as dividend rights.

An indirect test of my interpretation of the value of the intercept can be obtained by sorting majority-controlled companies that are less likely to change hands. If my conjecture is correct, then these companies should have a β_0 coefficient much lower than that of the rest of the companies.³¹ In the sample period considered the companies less likely to change hands are certainly represented by state-

²⁹ Given that π varies between 0.5 and 0.99, specification (8) does not eliminate the positive intercept; it only provides a way to explain the determinants of that intercept.

³⁰ To be able to sum β_0 and β_1 , I have to assume that the probability of a change in control after the introduction of the law is one ($p = 1$). If I take p into consideration, then the true relative value of control will be even larger.

³¹ From (7) one can see that $b_0 = \beta \delta p$. Therefore, if one can identify companies with a lower p , this should be reflected into a smaller β_0 coefficient.

owned enterprises. Privatization became an issue only recently.³² Table 4, column III reports the result of inserting a dummy for state-controlled companies multiplied by the inverse of the fraction of voting shares.³³ This dummy has a negative coefficient, which is highly significant. Therefore, state-controlled companies do have a much smaller β_0 coefficient. The insertion of this dummy also raises the explanatory power of the entire regression to 25 percent.

In summary, the voting premium seems to be directly related to the value of control. The only disturbing feature is that the higher concentration of ownership alone cannot account for the very large size of the voting premium: the value of control must be extremely high in order to account for the observed voting premia. Therefore, before claiming that the value of control explains the Italian voting premium, I have to prove that control is indeed extremely valuable in Italy and try to explain why. This is the objective of the next two sections.

4. An Alternative Estimate of Private Benefits

In Section 3, I showed that a fraction of the variability in the voting premia can be attributed to the different degree of potential competition for control. However, the value of control necessary to justify the level of the premia seems incredibly high. In this section I support those findings by estimating the value of control through an alternative method, which does not crucially depend on the proxy used for the voting power of outside shareholders. Such an estimate was made possible by the introduction in 1992 of new legislation on acquisitions followed by a proposal of privatizing some state-owned companies.

As I mentioned in Section 3, in January 1992 the Italian Parliament approved a new law requiring that any acquisition of more than 30 percent of the shares of a company be followed by a tender offer to all voting shareholders at the same price. This feature allows me to obtain a lower-bound estimate on the value of private benefits of control whenever a change of control is announced. In fact, after an announcement of a change in control the price of nonvoting shares reflects the value of the verifiable income under the new management. Therefore, if the price paid to voting shareholders exceeds that, the difference should be attributed to the buyer's private benefits of control. In fact, a buyer is prepared to pay a premium above the value of

³² During the sample period only the Liberal Party, which had less than 3 percent of the votes, was proposing to privatize state-owned companies.

³³ All state-controlled companies happen to be majority owned.

the future verifiable cash flow (represented by the price of nonvoting shares) only if he enjoys some private benefits.

In general, the premium paid will be strictly less than the acquirer's private benefits, unless the seller succeeds in extracting the buyer's entire surplus. In other words,

$$\text{Control premium} = N_v(P_v - P_{nv}) \leq B, \quad (9)$$

where N_v is the number of voting shares outstanding and B is the acquirer's private benefits of control. Unfortunately, there has been no acquisition of a dual-class company after the introduction of the law. Nevertheless, the recent announcement of a privatization of a dual-class company allows a computation of a lower-bound estimate of the private benefits.

Figure 2 shows the behavior of the control premium, as defined in Equation (9), for Credito Italiano, a state-controlled bank, during 1992. In that summer the new government included in its program the first-time proposal of selling some state-owned companies. However, at the formation of the government it was unclear which companies (if any) would be privatized and when. At the beginning of September 1992, rumors started to spread that Credito Italiano, which was 67 percent owned by IRI, a state holding company, would be the first company to be privatized. On September 10, 1992, the government officially announced the decision to sell its stake in Credito Italiano. Over a five-day window the control premium increased by \$408 million, representing 38 percent of the value of nonvoting equity.³⁴ On November 10, 1992, the board of directors of IRI approved the plan to sell its entire stake. The announcement gave additional credibility to the privatization plan and assured the market that the sale would trigger a tender offer for all voting shares. As a result, over a five-day window the control premium went up by \$360 million, equal to 21 percent of the value of nonvoting equity.

Therefore, two different datings in the probability of privatization increased the control premium by approximately 60 percent of the value of nonvoting equity. The market anticipated that the new owner of Credito Italiano will enjoy private benefits well above 60 percent of the value of the verifiable income he will produce.

This estimate is extremely high by international standards. Barclay and Holderness (1989) estimate the value of control in the United States to be about 4 percent of the value of equity. They infer this value by using the premium paid in control block transactions. In no case did they find a premium exceeding 56 percent of the value of

³⁴ At the announcement of the plan, trading in the two classes of stock was suspended for two days. The five-day window includes three days before the suspension and two days afterward.

Control Premium in Credito Italiano

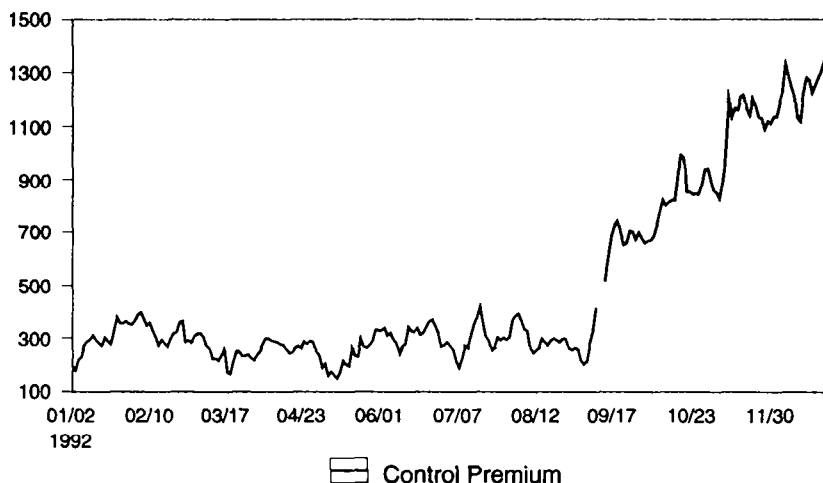


Figure 2

Control premium in Credito Italiano

The control premium is expressed in million U.S. \$ (1\$ = 1500 Lit.) and is computed as

$$\text{Control premium} = (P_v - P_{nv})N_v$$

where P_v (P_{nv}) is the price of a voting (nonvoting) share and N_v is the number of voting shares. The Italian government announced the decision to sell Credito Italiano to private investors on September 9, 1992. The decision to sell the whole stake owned by the government was approved by the board of directors of IRI, the state holding company controlling Credito Italiano, on November 10, 1992.

equity. In the Italian case, merely increased expectations of a change in control generated a control premium equal to 60 percent of the value of equity.

Therefore, different methods give the same answer: private benefits of control are particularly high in Italy. The natural question then is why private benefits of control are so large. My conjecture is that these benefits are particularly large because the legal system is very ineffective in preventing exploitation of a control position. This is also the view of Modigliani and Perotti (1991), who attribute to this cause the underdevelopment of the Italian security market. To substantiate this claim, I will present an episode in which this exploitation seems to have taken place.

5. Dilution as a Source of Private Benefits

By their very nature private benefits of control are difficult to measure. If they were easily quantifiable, then these benefits would not be private (i.e., accruing only to the control group) any longer because outside shareholders would claim them in court. For this reason, it

is hard to obtain any direct evidence on the sources of these benefits. In this section I can only provide a clue of where these benefits come from and why they may be larger in Italy than in other countries.

One of the most likely sources of private benefits is dilution of minority property rights [Grossman and Hart (1980)]. To justify the enormous size of private benefits in Italy, I have to prove that dilution is tolerated to a greater extent there than in other countries.³⁵ I do so by showing that in Italy even state-owned companies are suspected of diluting minority property rights.³⁶

The most recent case of alleged dilution took place in October 1992. IRI decided to sell its majority stake (83.3 percent) in a software company (Finsiel) to the state-owned telecommunication group (STET), controlled by IRI as well. This intragroup transfer would have been a simple accounting gimmick except for the fact that 47 percent of STET was owned by small private investors, while IRI is 100 percent state owned.

The mere fact that such a transfer took place generates suspicions about its real motives. These suspicions become more serious when we look at the price paid. The 700 billion lire price (about \$450 million) corresponds to 50 times the company's earnings, when the international price-earning ratio for similar companies is between 20 and 30. In addition, 76 percent of the revenues of Finsiel come from state contracts. This monopoly was destined to disappear at the end of 1992 as a result of the new EEC regulations, which open up state contracts to international competition.

To confirm the suspicion of overpricing, I mention that Olivetti, a private computer maker, offered 266 billion lire for the same stake the previous year. The offer was probably low and was not accepted, but the price eventually paid is almost three times as much. Both the voting and the nonvoting stock of STET lost more than 20 percent of their value at the announcement of the deal against a stock market drop of only 2 percent.

The big market drop and the presence of international investors in STET generated sharp criticisms about this transfer.³⁷ Nevertheless, I am not aware of any legal suit brought against STET. As I said, it cannot be easily proved that the price was inflated. However, a likely estimate based on international comparison gives the value of the

³⁵ One might think that there is a contradiction in my claims that minority shareholders get very little of the verifiable income but get a large fraction of the private benefits of control. However, the enforcement mechanisms are completely different. The only chance for a minority shareholder to receive a fraction of the verifiable income is given by the protection offered by the legal system. On the contrary, the value of voting rights is protected by competition for control.

³⁶ The underlying assumption is that state-owned companies should be less likely to circumvent the law because of the political cost of such an action.

³⁷ See the *Wall Street Journal*, October 6, 1992.

Finsiel stake at 350 billion lire. According to this estimate, with a single operation IRI would have diluted minority property rights by \$110 million, equal to 7 percent of the value of equity owned by outside shareholders.³⁸

These intragroup reallocations of ownership are quite frequent in Italy. The difficulties in challenging these transactions in court and the apparent tolerance of the financial and political environment may then explain the large value of control in Italy.

6. Conclusions

On the MSE, voting rights are worth almost as much as dividend rights. The evidence presented here suggests that this valuation is not necessarily a mispricing but can be attributed to the very large value of control in Italy. This value of control can be explained in terms of different levels of protection of minority property rights in that country.

These findings should be taken into serious consideration whenever different financial systems are compared. Large private benefits of control can have a significant impact on the leverage decision [Harris and Raviv (1988)], on the ownership structure [Zwiebel (1991)], and on the decision of an entrepreneur to bring his company public [Zingales (1992b)]. As in Italy, other countries may have large private benefits of control. Whether the size of private benefits alone can account for the observed differences in financing patterns around the world is a subject of future research.

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³⁸The figure comes from $0.47(700 - 350) = 165$ billion lire, approximately \$110 million.

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