The Value of Voting Rights to Majority Shareholders: Evidence from Dual Class Stock Unifications

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Abstract

We study 84 dual class stock unifications, where superior vote shareholders gave up their superior voting status (all firm stocks became "one share one vote") and received (in most cases) compensation in the form of additional shares. Unifications are essentially intra-firm transactions of voting rights, and afford observation of the intra-firm assessed price of vote. The price of vote in unifications: 1) increases with the percentage vote lost by the majority shareholders, 2) is higher in family-controlled firms, 3) decreases with institutional investor holdings, and 4) is similar to the "outside" price of vote implicit in the market prices of stocks.

Keywords: Value of vote, majority shareholders, dual class stocks, closely held companies

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The value of voting rights is an intriguing topic that has attracted extensive academic and practitioner interest before. Most of the existing evidence comes from examinations of dual class stocks. In the dual class stock system, the firm issues two classes of common stock: superior- and inferior-vote stocks. Previous research documents a price premium of superior vote (over inferior vote) stocks, which illustrates the positive value of voting rights.[1]

In recent years, many dual class firms decided to recapitalize their equity into single class stocks. This was done by transforming all common stock classes into "one share one vote". The "unification" of stock classes trend is evidenced in Canada [Amoako-Adu and Smith (2001)], and is gaining momentum in Europe as well. (Nokia and Lufthanza are recent examples.)

We examine 84 dual class share unifications on the Tel Aviv Stock Exchange. Unifications are essentially sales of voting power from one class of investors to another. By monitoring the prices of these transactions, i.e., by examining the compensation paid for the loss of the superior-vote status, we hope to provide relatively direct inferences on the value of vote.

Our main findings are: 1) The price of vote strongly depends on the position and perspectives of the majority shareholders. For example, the higher is the vote loss of majority holders the higher is the marginal price of vote. 2) Compensation for vote loss is offered even when majority holders retain control of the firm. Vote appears valuable even beyond the 50% absolute majority point. 3) Institutional investors also play a role – the compensation to majority holders is lower in firms with institutional holdings. 4) On average, the unification price of vote is about equal to the price of vote implicit in the market price premiums on superior vote stocks.

[1] The price premium ranges from 5%-10% in the U.S. [Lease, McConnell and Mikkelson (1983) and Cox and Roden (2002)] to 82% in Italy [Zingales (1994)], with a typical value of 10%-20%.

The paper is organized as follows. Section 1 provides background on the research issues. Section 2 describes the sample. Section 3 reports the empirical findings, and section 4 concludes.

1. Background and research issues

1.1 The "inside" and "outside" view of the value of voting rights

The value of voting rights has been approached from two directions: the value to a small shareholder from outside, and the value to "inside" majority holders. The value to a small outside shareholder is closely related to the chance that the voting right will become pivotal, for example, in a control contest [Zingales (1995)]. On the other hand, the value to (inside) majority holders is related to the superior cash flows they (the majority shareholders) can generate for the firm (providing they are in control), and to the private benefits they can extract – see the analysis in Grossman and Hart (1988) and Harris and Raviv (1988). Recent literature [e.g. Burkart, Gromb and Panunzi (1998)] further proposes that dual class capitalization helps majority holders achieve higher bid prices for the firm.

In this study we observe both the "outside" price of vote (implicit in the market price premiums on superior vote stocks), and an intra-firm negotiated price of vote. We estimate the intra-firm price of vote from intra-firm transactions of voting power. In our sample of 84 dual class stock unifications, superior vote stocks surrender their superior vote status, and receive (in most cases) additional shares as compensation. These direct and "pure" exchanges of voting power for additional shares, initiated within the firm, offer a glimpse at the intra-firm assessed value of vote. Previous empirical work such as Barclay and Holderness (1989) and Dyck and

Zingales (2001) estimate the "insider" value of vote from block trades that typically transfer control. It is interesting to compare the block-trade, unification, and market prices of vote.[2]

1.2 Dual class capitalization and unification

Dual class stocks are prevalent in majority-controlled firms across the globe. For example, Bergstrom and Rydqvist (1990) report that in the late 1980's over 70% of the stocks listed on the Stockholm Stock Exchange were dual class, and Zingales (1994) reports that about 40% of the firms on the Milan Stock Exchange had dual class stocks. The dual class system facilitates investors' segmentation. The majority shareholders can concentrate on superior vote stocks and establish a majority vote at low costs (sometimes without even owning a majority of equity) – see DeAngelo and DeAngelo (1985). Other ("outside") public investors, who are less interested in control, hold inferior vote stocks primarily, yet receive a fair share of the dividends.

At the end of 1989, about 40% of the firms traded on the Tel-Aviv Stock Exchange (TASE) had dual class stocks. The superior vote stocks were always "one share one vote" stocks, while the inferior vote stocks were typically "five shares one vote" stocks. In all cases, superior and inferior vote stocks had identical per-share dividend distributions.

On October 1989 the TASE together with the Israel Securities Authority (the Israeli counterpart of the U.S. SEC) banned new issues of inferior vote stocks. Companies wishing to raise capital could only issue superior class (i.e., "one share one vote") stocks. The new regulation

[2] We are the first to analyze the terms of the unifications and infer from them the value of vote. Other studies that mention unifications [Amoako-Adu and Smith (2001), for example] focus on the reasons for unifications – disputes between superior and inferior vote shareholders that diminish investor interest in dual class stocks.

entered into effect on January 1990, and since then more than eighty firms decided to unify their dual class stocks. The unifications frequently preceded a seasoned equity offer.[3]

Since superior vote stocks were already "one share one vote" stocks, unification proceeded by transforming inferior vote stocks into superior vote stocks. Each inferior vote stock became a "one share one vote" stock at no cost to its owner. Sometimes though, the superior vote shareholders received compensation for agreeing to the stock unification. This compensation, when granted, was always in the form of additional "one share one vote" stocks issued by the company and distributed to superior vote shareholders free of charge.

An example can be useful. Suppose firm X has two superior vote stocks (with "one share one vote") owned by the majority shareholders, and five inferior vote stocks (with "five shares one vote") owned by the public. Upon unification, each inferior vote stock becomes a "one share one vote" stock, and the superior vote stocks remain "one share one vote". If the unification proceeds with no compensation, the voting power of the majority holders (who held all superior vote stocks before the unification) declines from 2/3 to 2/7 while their share in equity remains 2/7. If compensation is offered, say by granting (via private placement and for free) one additional "one share one vote" stock to the majority holders, their share in vote drops from 2/3 to 3/8 while their share in equity increases from 2/7 to 3/8.

It is noteworthy that a unification with compensation required ratification by the Israel Securities Authority (because it involved issuing more stocks), and a supermajority (75%) approval in several shareholder meetings, including a meeting of inferior-vote shareholders only. The Israel Securities Authority (ISA) asked the company for a small prospectus-like document

[3] Interestingly, since the new regulation inception on January 1990, there were no issues of superior-vote stocks. That

(that usually accompanies private placements) and an expert opinion on the compensation proposed. In many cases there were objections to the unification proposals, and the company had to cut compensation. The "troublemakers" were always institutional investors, primarily mutual funds.[4] Thus, often the process of unification with compensation took almost a year. In contrast, unifications without compensation were completed within a couple of months, and required only approval in shareholder meetings, and filing a short standard "Immediate Report" on firm's decision to the ISA and TASE.

1.3 Measuring the value of voting rights

1.3.1 Inferring the value of vote from the market prices of dual class stocks

The price of vote can be estimated from the price premium of superior (over inferior) vote stocks. Let i be an index for stock class: i=1 for the superior vote stocks, and i=2 for the inferior vote stocks; N_i be the number of shares in stock class i, γ be the number of inferior vote stocks needed for one vote; and P_i be the market price of stock class i. An investor who swaps stock class 1 for stock class 2 experiences the following changes:

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is, all dual-class companies that raised equity unified their stocks before the seasoned equity offering.

[4] For example, in the unification of Supersol, a large supermarket chain firm, the expert recommended a compensation of 15% to superior-vote shareholders. Several mutual funds expressed discontent, hence the board hired another expert. Following this second expert opinion report, the board decided to propose a compensation of 10.75%. In the final shareholder meetings a few mutual funds revolted again and the company compromised on a compensation of 9.75%.

	Cash flow	Change in % Equity	Change in % Vote
Sell 1 Stock 1	P_1	$-\frac{1}{N_1+N_2}$	$-\frac{1}{N_1+N_2/\gamma}$
Buy $\frac{P_1}{P_2}$ Stock 2	$-P_1$	$\left(\frac{P_1}{P_2}\right)\frac{1}{N_1+N_2}$	$\left(\frac{P_1}{P_2}\right)\frac{1/\gamma}{N_1+N_2/\gamma}$
Total	--	$\left(\frac{P_1}{P_2}-1\right)\frac{1}{N_1+N_2}$	$\left(\frac{P_1}{P_2\gamma}-1\right)\frac{1}{N_1+N_2/\gamma}$

The price of vote implicit in these market transactions is denoted MPVR, and

$$MPVR=-\frac{\Delta Equity}{\Delta Vote}=\frac{\left(\frac{P_1}{P_2}-1\right)\cdot\left(\frac{1}{N_1+N_2}\right)}{\left(1-\frac{P_1}{P_2\gamma}\right)\cdot\left(\frac{1}{N_1+N_2/\gamma}\right)} \quad (1)$$

The above MPVR formula assesses the price of vote in terms of firm equity, that is, assesses, at the margin, how many % of firm equity does a 1% of firm vote cost. MPVR has the same measurement units (*ΔEquity/ΔVote*) as the price of vote estimates that can be extracted from unifications and from block trades. Thus, it is particularly suitable for comparisons with other value of vote measures.

1.3.2 Unification based estimates of the value of vote

Dual class stock unifications can be perceived as simple sales of voting rights by superior vote to inferior vote shareholders. Alternatively, since voting rights are particularly important to majority shareholders, dual class unifications can also be perceived as sales of voting rights by majority

shareholders to the rest of the shareholders. To clarify, majority shareholders are the control group of the firm, i.e., the group of large shareholders who together dominate vote in the firm.

Consider the majority shareholders, and let, in addition to the previous definitions, COMP = total number of class 1 stocks granted as compensation, α_i = the share of majority holders in stock class i, v_c = the proportion of total vote controlled by the majority holders, and e_c = the proportion of total equity owned by the majority holders. The Price of Voting Rights as perceived by the majority shareholders (PVR_c) is their gain in equity divided by their loss in vote:

$$PVR_c = -\frac{\Delta e_c}{\Delta v_c} = \frac{e_c(after) - e_c(before)}{v_c(before) - v_c(after)} = \frac{\frac{[\alpha_1(N_1 + COMP) + \alpha_2 N_2]}{(N_1 + N_2 + COMP)} - \frac{(\alpha_1 N_1 + \alpha_2 N_2)}{(N_1 + N_2)}}{\frac{(\alpha_1 N_1 + \alpha_2 N_2 / \gamma)}{(N_1 + N_2 / \gamma)} - \frac{[\alpha_1(N_1 + COMP) + \alpha_2 N_2]}{(N_1 + N_2 + COMP)}} \quad (2)$$

The analysis can be repeated from the perspective of superior vote shareholders, simply by setting α_1=1 and α_2=0 in the equations above. Interestingly, it can be shown that the price of vote paid to superior vote shareholders $PVR_1=\Delta e_1/\Delta v_1= PVR_c$, the price of vote that majority holders receive. That is, the price of vote is independent on whose perspective we take.[5]

1.4 Who determines the unification price of vote?

Another interesting question is who determines the price of vote in unifications: all superior vote shareholders as a group, or the majority shareholders alone?

The properties of Δv_c, the change in majority shareholders' voting power upon unification, are different than those of Δv_1, the corresponding change in class 1 (superior vote)

[5] The only exception is when $\alpha_1= \alpha_2$, in which case PVR_c is undefined while PVR_1 is well defined.

shareholders' voting power. This is best illustrated by considering the case of $\alpha_1 = \alpha_2$. If $\alpha_1 = \alpha_2$, that is if the majority shareholders hold equal proportions of superior and inferior vote stocks, then Δv_c is zero regardless of the compensation to the superior vote (class 1) stocks. For example, if the majority group holds 70% of the inferior vote stocks and 70% of the superior vote stocks, its share in firm vote and equity remains 70%, regardless of the compensation paid.

In such a case (of $\alpha_1 = \alpha_2$), the majority shareholders definitely prefer zero compensation because they would not lose any voting power and because unifications with zero compensation are quicker and cheaper.[6] Unifications without compensation also receive better public relations because of the public's impression that the majority owners gave up one of their superior rights for free.

Alas, these zero-compensation unifications are always against the interests of the superior-vote (class 1) shareholders as a group because in such unifications shareholders who own only class 1 shares lose voting power without any compensation. Evidently, there exist conflicts of interest between the majority shareholders and some of the superior vote (class 1) shareholders.

If majority shareholders dominate the unification decision, there would be no compensation when the majority shareholders are not hurt at all or are not hurt much by a zero compensation unification. This happens when $\alpha_1 < \alpha_2$ (in which case the majority shareholders' voting power increases following a zero-compensation unification), when $\alpha_1 = \alpha_2$ ($\Delta v_c = 0$), and when $\alpha_1 > \alpha_2$ (majority shareholders lose vote) but the loss in voting power is not large enough to

[6] The monetary cost of a unification with compensation is assessed (by an ISA expert) to be in the order of 100 to 200 thousands dollars. Thus, the main cost of a unification with compensation is the time and energy consumed during the bargaining and unification ratification process.

justify a costly compensation process. In contrast, if unifications were sales of voting rights by class 1 shareholders, compensation would always be positive regardless of α_1 and α_2.

We hypothesize that the majority shareholders dominate the unification decision, i.e., that the correct view is that unifications are sales of vote by majority holders to the rest of the shareholders.

2. Data and sample description

In the period 1990-2000 there were 87 dual class stock unifications on the Tel-Aviv Stock Exchange, 84 of which are included in the sample. Three firms were excluded because their superior class shares had preference in vote only on a number of pre-specified issues such as takeover decisions and/or Chief Executive Officer appointments. Data on the unification date, equity structure, and compensation are extracted from the unification reports that the firms filed at the ISA. Stock price and accounting data are also taken from the databases of ISA.

Stock ownership data are collected from "Meitav Stock Guide", and from "Holdings of Interested Parties" (a more detailed Tel-Aviv Stock Exchange official publication, first appearing at the end of 1991). These publications list for each exchange-listed firm the holdings of its "interested parties". Interested parties are defined as individuals and companies owning more than 5% of the firm vote or equity, every family or business-relative of the above (for example, daughter or subsidiary), and company officials (executives and directors). The sum of all "interested party" holdings excluding institutional investor holdings, at the end of the year preceding the unification, is our measure of the majority group holdings.

The mean total assets of our sample firms is 1021 million New Israeli Shekels (about 340 million dollars, given an average exchange rate during the sample period of 3 NIS per $), but the median is 103 million NIS only. The mean leverage (debt divided by total assets) is 58%, the mean Return on Equity is -4%, and the mean market over book value of equity is 1.75 (median is 1.24).

Our sample firms are closely held. The majority shareholders control, on average, 76.0% of firm's vote and 70.3% of firm's equity. The wedge between vote and cash flow rights is not wide because majority holders also invest heavily in the inferior-vote stocks. On average, the majority holders own 85.9% of the superior vote shares and 62.6% of the inferior vote shares.[7]

3. Empirical results

3.1 Loss of voting power and compensation in unifications

Forty-six of the sample firms (55%) compensated their superior vote shareholders and 38 (45%) did not. The superior vote shareholders' average decline in voting power is 25.6%, and their average compensation in percent of book equity is 2.25%. Dividing the average compensation (2.25%) by the average loss in voting power (25.6%) we get an estimate of PVR, the price or value of voting rights, equal to 0.09. Direct estimation of PVR in each of the 84 unifications also yields an average of 0.09. Thus, in the overall sample, the average price of vote is 0.09% of firm equity per 1% of vote.

[7] The finding that the majority holders own a considerable proportion of the inferior vote shares is not unique to Israel. Bergstrom and Rydqvist (1990) report a similar result for Sweden, and interpret it as evidence against the hypothesis that majority holders simply wish to expropriate inferior-vote shareholders.

It can be argued that the value of voting rights should be calculated only from the cases where compensation was granted. In unifications without compensation, there may have been other reasons for giving up the superior vote status for free. Specifically, the tedious and time consuming process of unifications with compensation, and the positive public relations effect of unifications without compensation (especially before a new equity offer) might have convinced some firms to announce a unification without compensation. Thus, true transactions of voting power for additional equity took place only in unifications with compensation.

In the 46 unifications with compensation, the average compensation to superior vote shareholders is 4.12% and their average loss in voting power is 23.7%, which yields a PVR estimate of 0.17. Direct estimation finds an average PVR of 0.17, a median of 0.12, an interquartile range of 0.03 to 0.24, and a maximum PVR of 0.86.

Three further comments are noteworthy. First, one may argue that since (almost all) majority holders in our sample retain control of their firms, there should not exist any compensation; majority holders receive the same private benefits before and after the unification. This hypothesis is probably too extreme. In our sample majority holders are compensated even though they do not lose control. We suggest an alternative hypothesis: reducing majority holders' vote in the firm, via unification, shortens the duration of majority holders' rule, and decreases the present value of their private benefits. Majority may be lost as soon as the next public offering. Hence, compensation is required. The alternative hypothesis is interesting because it supports two other important propositions: a) that vote is beneficial to majority holders even beyond the 50% mark, and b) that the present value of the private benefits of control increases monotonically with the vote commanded.

Second, it can be argued that the value of vote in our sample is downward biased. The firms that did not unify their stocks are probably the firms where it was difficult to contract on the compensation for vote. It is likely that firms with low values of vote successfully completed the unification, while firms with high values of vote delayed the painful operation. Thus, our sample probably includes a higher proportion of relatively low value of vote firms, which leads to a downward bias in our estimated price of vote. To counter this criticism we note the possibility of an opposite bias. Only about 40% of the firms on the TASE had dual class shares. If dual class firms have higher private benefits and higher values of vote, then the fact that our sample comprises dual class stocks only generates an upward bias in our price of vote estimate.

Last, we have five (nine) firms before (after) the unification with "majority holders" controlling less than 50% of the vote. In the empirical analysis we do not observe any special behavior of these firms, which implies that control is practically achieved even with less than 50% of the vote.

3.2 The market price of vote and its comparison to the unification price of vote

The market price of vote (MPVR), i.e., the price of vote implied by the price ratio of superior to inferior vote stocks is calculated using equation (1) based on stock prices one week before the unification announcement. Since estimating MPVR requires data on the prices of both classes of stocks, it can be computed only in the subsample of 53 firms with both stock classes traded on the exchange. For 46 of these 53 firms, we find the first announcement date by reviewing newspaper reports and firm reports to the ISA. For 7 firms we could not identify a reasonably clear first announcement date because in these firms there were many potentially revealing rumors published over a period of several months before the official unification announcement.

The analysis results are shown in Table 1. The mean market price of vote (MPVR) is 0.20% equity per 1% vote. This mean MPVR is significantly higher than the corresponding mean unification price of vote (0.10% equity per 1% vote), and the proportion of firms where the market price of vote exceeds the unification price of vote is relatively high (35/46). Nevertheless, the correlation between the unification price of vote and the market price of vote is 0.51 (p-value of 0.0003), indicating that market and intra-firm prices of vote are related.

(Insert Table 1 about here)

Table 1 also distinguishes between unifications with and without compensation. The firms that unified their stocks without compensation might have transacted voting rights below their value. Indeed, in the subsample of unifications with compensation, the market and unification prices of vote become similar – the mean (median) MPVR is 0.34% (0.20%) equity per 1% vote and the mean (median) unification PVR is 0.25% (0.21%) equity per 1% vote. Thus, in the subsample of firms where the unification price of vote was negotiated, it is insignificantly different from the market price of vote. On reflection, our unification price of vote estimates the value of vote in small non-control-transfer block trades. (The average vote-block sold by majority holders in unifications is about 5%.) Thus, we are not surprised that it is close to MPVR, the marginal price of vote in the market.

In sum, we believe that a fair estimate of the marginal price of vote in Israeli firms is about 0.2% equity per 1% vote. The 0.2% estimate is based on the mean unifications-with-compensation price of vote and on the mean market price of vote (Table 1). Notably, Dyck and Zingales' (2001) Table 2 classifies Israel on the verge of the top quartile of private benefits, which suggests that typical prices of vote in developed economies are lower than in our sample.

3.3 Tests of the majority holders' dominance hypothesis: When is compensation offered?

Table 2 contrasts firms that compensated superior vote shareholders with those that did not. General firm characteristics such as size, leverage and profitability are not significantly different between compensating and non-compensating firms. The main apparent difference is in the governance structure. In firms with compensation, majority shareholders owned a significantly higher proportion of the superior vote stocks and a significantly lower proportion of the inferior-vote stocks.

(Insert Table 2 about here)

The hypothesis of the study is that the majority shareholders dominate the unification process and determine the compensation or price per vote. This hypothesis predicts that when α_1 (the share of majority holders in superior vote stocks) is lower or close to α_2 (their share in inferior vote stocks), the majority shareholders prefer (and there would be) a unification without compensation. This is because under such circumstances the majority shareholders do not incur a loss requiring compensation – their share in vote increases or does not change significantly even when the unification does not include any compensation. As $\alpha_1 - \alpha_2$ increases, compensation would become more likely because majority holders would lose relatively large amounts of vote in a zero-compensation unification. In short, a positive correlation between $\alpha_1 - \alpha_2$ and the existence of compensation is predicted.

This prediction is borne out by the data. The Spearman (rank) correlation of $\alpha_1 - \alpha_2$ with Dum_COMP (a dummy variable equal to 1 when the firm offered compensation, and equal to 0 otherwise) is 0.49, and its p-value is below 0.001. The regular (Pearson) correlation of $\alpha_1 - \alpha_2$

with Dum_COMP is 0.49 (p-value<0.001), yielding identical conclusions. In general, we prefer to report the non-parametric test statistics because some of our variables (Dum_COMP, for example) are not Normally distributed.

Table 3 describes further the relation of compensation to α_1-α_2. As shown in panel A, when α_1- α_2 is negative or trivial (less than 4%) compensation is a rarity and only 19% of the unifications offer compensation. As α_1-α_2 increases, compensation becomes more and more frequent. Thirty-three (79%) out of the 42 firms with α_1-α_2 at or above the median offered compensation upon unification. The percentage of compensating firms varies significantly across the α_1-α_2 quartiles, as is evidenced by the standard frequency-table Chi-Square test statistic of 21.7 (p-value of 0.001) reported in panel A.

(Insert Table 3 about here)

The majority holders' dominance hypothesis is further reinforced when the relation of compensation to Δv_c (the majority shareholders' loss in voting power) is examined – see panel B of Table 3. The Spearman correlation of Δv_c with Dum_COMP is 0.50 with a p-value below 0.001. When Δv_c is relatively low (below its median) 35% of the unifications included compensation, and when Δv_c is above median 74% of the unifications included compensation.

Panel C completes the picture by examining the superior vote shareholders' position. The Spearman correlation between the voting power loss of superior vote stocks and Dum_COMP is negative with a p-value of 0.02. When superior vote shareholders' loss in voting power (Δv_1) was above the median, less than half of the firms offered compensation, and when their loss in voting power was relatively small, a majority of the firms offered compensation. Evidently, superior vote

shareholders as a group do not influence much the compensation upon unification, which supports the majority shareholders' dominance hypothesis.

Last, we examine in how many cases majority holders would lose control (drop below 50% of the vote) without compensation. Perhaps this factor (the fear from losing control) can explain best the existence of compensation. We find only four such cases in our sample. In three of the four cases the firm elected to compensate the superior vote shareholders.

3.4 Determinants of the price of vote

Another implication of the majority shareholders' dominance hypothesis is that the price of vote increases with the majority shareholders' vote loss. Large losses of voting power threaten the majority holders' reign. Hence, they would demand higher compensation per vote in unifications with large vote losses. This suggests that in the formulation $\Delta e_c = \alpha \Delta v_c^{\beta}$, where Δe_c (Δv_c) equals the increase (decrease) in majority shareholders' percentage of equity (vote) upon unification, the exponent β is significantly larger than 1. We examine this issue by fitting the regression

$$\text{Ln}(PVR) = a + b\ \text{Ln}(\Delta v_c) + \eta \qquad (3)$$

where $PVR = \Delta e_c / \Delta v_c$ is the price of vote. If the price of vote increases with the voting power loss, b, the coefficient of $\text{Ln}(\Delta v_c)$ in equation (3), is significantly larger than zero. Because of the evidence that only in unifications with compensation we have a reliable intra-firm negotiated price of vote, regression (3) is fitted only in this subsample. Further, because of the logarithmic formulation of the independent variable we omit four firms where Δv_c is negative. (The majority

holders in these 4 firms gained voting power upon unification.) Thus, regression (3) is run on a subsample of 42 unifications with compensation in which both *PVR* and Δv_c are positive.

Table 4 presents the regression results. The coefficient of Ln(Δv_c) is significantly positive. It appears that the larger is the voting power loss of the majority shareholders, the higher is the price of vote (the compensation per 1% vote lost). This result is consistent with Barclay and Holderness (1989) who find that the price of vote (block premium in their study) increases with the vote transfer (block size).

The documented increase in the marginal (and average) price of vote predicts that the price of vote in large block sales would be higher than the price of vote in unifications (which are typically small vote-block sales). Dyck and Zingales (2001), who study large block transactions in 39 countries, estimate a mean (median) price of vote in Israel of 0.48% (0.40%) equity per 1% vote. This price of vote is about double our market and unification price of vote estimates. Hence, it confirms the dependence of the price of vote on the amount of vote sold.

Table 4 also reports results of the regression of Ln(*PVR*) on both Ln(Δv_c) and Ln(Δv_1) – the superior vote shareholders loss of vote. Only the coefficient of Ln(Δv_c) is statistically significant and the adjusted R^2 is similar to that of the regression of Ln(*PVR*) on Ln(Δv_c) alone.[8] Apparently, the price of vote is most closely related to majority shareholders' loss of vote.

(Insert Table 4 about here)

[8] The regression of Ln(PVR) on Ln(Δv_c) and Ln(Δv_1) suffers from multicollinearity problems as Δv_c and Δv_1 are correlated. However, the clear-cut results in favor of Δv_c (no increase in R-square when Δv_1 is added, and the insignificant coefficient of Δv_1) suggest to drop Δv_1 from the analysis.

The third regression in Table 4 suggests that the relation of Ln(PVR) to Ln(Δv_c) may be nonlinear. When [Ln(Δv_c)]^2 is added to the regression, its coefficient is positive and marginally significant at the 10% level. The price of vote appears to increase more steeply as the vote loss increases.

We also investigate the impact of several other factors on the price of vote. First, we examine institutional holdings. We define institutional holdings as holdings of mutual funds, pension funds, provident funds, and education funds. Institutional investors owned on average 3.6% of the superior vote stocks and 8.5% of the inferior vote stocks. Hence, institutional investors had an incentive to oppose "excessive" compensation to superior vote stocks. This opposition potential was anticipated. Thus, in practice, negotiations between the firm and its institutional investors preceded many unifications.[9]

We construct DUMDINST, a dummy variable equal to 1 when institutional investor holdings in the inferior vote stock exceeds institutional holdings in the superior vote stock by 1% or more. Institutional investors have incentives to oppose compensation decisions only when their holdings in the inferior vote stock exceed their holdings in the superior vote stocks by a non-trivial amount. Thus, DUMDINST represents the opposition potential of institutional investors. When DUMDINST is added to the PVR regressions its coefficient is negative (-1.03) and statistically significant (t=-2.9) – see Table 4. All other things equal, the indication is that institutional investors' potential and actual opposition cut the price of vote.[10]

[9] It can be argued that institutional investors' power in Israel is strong relative to other economies. This is because most of the pension, provident, education, and mutual funds are subsidiaries (and important profit centers) of large banks. Thus, the relatively small institutional investor holdings reported above under-represent their true impact.

[10] Robustness tests reveal that substituting DUMDINST in the regressions by DINST, institutional investor holdings in inferior vote stocks minus their holdings in superior vote stocks, also yields a negative coefficient (-0.05) with a t-statistic of -2.2.

Another factor that might have affected the eventual price of vote was company plans for a seasoned public offer. In the beginning of the 1990s the Tel-Aviv Stock Exchange was booming, and time was ripe for issuing stocks. Firms with dual class stocks wishing to raise capital in the hot issues market were not allowed to issue inferior vote stocks, and elected to unify their stocks before the equity offer.[11] To expedite the offering process, in some of these firms, voting rights might have sold at a discount.

This prediction is supported by the data. We construct DUMSPO, a dummy variable equal to 1 if the company had a seasoned public offer after the unification. Out of the 42 firms in our regression sample, 16 issued equity (12 within a year, 2 within two years and 2 within three years). When we add DUMSPO to the regression its coefficient is negative and statistically significant. Evidently, vote was sold at a discount when the firm planned an equity offering.

In robustness tests, we redefined DUMSPO as equal to 1 only for the 12 firms that issued equity within a year after the unification. The coefficient of the redefined DUMSPO in the Ln(PVR) regression is -0.81 with a t-statistic of –2.0. We also tried replacing DUMSPO by SPO_P (= equity issue proceeds divided by the pre-issue total market value of the firm stocks). The coefficient of SPO_P in the Ln(PVR) regression is –0.96 with a t-statistic of –2.9.

The third additional factor examined is the ownership structure of the firm. One of our ownership data sources (Meitav) identifies firms that are controlled by an individual or a family. Based on it, we construct a dummy variable, FAMILY, equal to 1 (0) when the firm is controlled (not controlled) by an individual or a family. Eighteen (43%) of the 42 firms included in our Table 4 regressions are controlled by a single person or a family.

[11] Although it was permitted, none of the firms elected to raise capital by issuing superior-vote shares.

We expect family firms to show higher prices of vote for two reasons: 1) families insist on maintaining control over firms, mainly when these firms offer relatively large private benefits, hence family firms are inherently high value of vote firms; and 2) families are a relatively cohesive control group, and as such may be able to extract better prices for their vote. Indeed, when FAMILY is added to the PVR regressions, its coefficient is positive and statistically significant. Evidently, vote sold at a higher price in family-firm unifications.

The joint explanatory power (adjusted-R^2) of the voting power loss, family dummy, institutional holdings dummy and seasoned public offering dummy with respect to the price of vote is over 40%. Even more impressive, voting power loss, family control, institutional holdings and seasoned offers can explain over 80% of the cross-sectional variability in the compensation received by majority shareholders upon unification – see our bottom-line regression in Table 4.[12]

It is nevertheless interesting to investigate whether other variables also affect the price of vote. Firm characteristics such as size, leverage, growth opportunities, profitability, and dividend policy have been linked in the past to potential private benefits, which are a major source of the value of vote. Thus, we added Ln(total assets), Ln(debt/assets), Ln (market/book value), Ln (return on equity), and a dummy variable for dividend distributions to the Ln(price of vote) regressions of Table 4. When we add each characteristic separately, or when all five characteristics are added together, none of their coefficients approaches statistical significance.

[12] As a final robustness test we examine the effect of omitting the four firms with a negative Δv_c. The following regression is fitted to the sample of all 46 firms that offered compensation upon unification (t-statistics in parentheses):

$$\Delta e_c = 0.0059 + 0.16\ \Delta v_c - 0.0067\ \text{DUMSPO} - 0.0073\ \text{DUMDINST} + 0.0071\ \text{FAMILY} \quad \text{Adj. } R^2 = 0.50.$$
$$\qquad (1.7) \quad (5.4) \qquad (-2.1) \qquad\qquad (-2.2) \qquad\qquad (2.3)$$

Evidently, all our conclusions remain intact.

4. Conclusions

The study demonstrates that the value of vote is most accurately assessed when perceived from the perspective of the majority shareholders. We show how the interests and position of majority holders explain best the existence and magnitude of compensation in "pure" voting power transactions – dual class stock unifications.

Based on the compensation granted in 84 Israeli unifications, we estimate the price of 1% of the voting power to be about 0.2% of firm's equity. We expect the typical price of vote in economically developed countries to be somewhat lower than that. This is because the private benefits of control in Israel are above median relative to developed countries [Dyck and Zingales (2001), Table 2].

We find that the price of vote depends on several factors. First and foremost, the marginal price of vote is increasing with the vote loss of majority holders. One of the important implications of this finding is that alternative measures of the value of vote may diverge because of differences in the amount of vote tendered. Unifications are typically small vote-block sales (the average vote loss of majority shareholders is about 5%), which explains why the unification price of vote is similar in magnitude to the marginal (small quantity) price of vote estimated from the market price premium on superior vote stocks. In large block transactions, the price of vote is most probably higher than our estimated unification price of vote. This is because of the much larger vote transfers in large block trades.

Second, the price of vote decreases when institutional investors hold some of the firm's stock. This suggests that institutional investors are instrumental in defending public's interests in the firm. Without institutional investors the majority shareholders would collect a higher

compensation for their vote loss. Institutional holdings appear to offer an externality to small public investors.

Third, family controlled firms appear to sell vote at higher prices. This suggests that private benefits are larger in family firms. Alternatively, cohesive families bargain better on the price for vote.

Finally, the study suggests that vote has some marginal value even beyond the 50% absolute majority point. In unifications majority holders receive compensation for vote loss even though they (almost always) retain more than 50% of the vote. Holding more than 50% of the vote is beneficial for majority holders possibly because it extends the expected duration of their rule over the firm, and increases the present value of their private benefits.

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Table 1
Comparing the market and the unification prices of vote

Sample	Number of observations	Average market price of vote (% equity per % vote)	Average unification price of vote (% equity per % vote)	Average difference (% equity per % vote)
Overall	46	0.20 median = 0.13	0.10 median = 0.00	0.10 median = 0.08 t-statistic = 3.0
Unifications without compensation	28	0.12 median = 0.09	0.00 median = 0.00	0.12 median = 0.09
Unifications with compensation	18	0.34 median = 0.20	0.25 median = 0.21	0.09 median = 0.01 t-statistic = 1.0

The market price of vote is the price of vote implicit in the market price premium of superior vote stocks. It is calculated using equation (1) and based on stock prices a week before the unification announcement. The unification price of vote is calculated using equation (2), and it equals the compensation upon unification divided by the vote loss. The sample includes 46 unifying firms with both stock classes actively traded on the Tel-Aviv Stock Exchange.

Table 2
Comparing unifications with and without compensation

	Unifications with compensation (n=46)		Unifications without compensation (n=38)		*p*-value of the difference using the Kruskal Wallis test of equality
	Mean	Median	Mean	Median	
Firm characertistics[a]					
Total assets (in million NIS)[b]	802	108	1288	95	0.56
Debt/total assets	0.51	0.54	0.65	0.62	0.15
Market to book value of equity	1.66	1.46	1.87	1.14	0.35
Return on equity	-0.04	0.02	-0.04	0.04	0.90
Proportion of firms paying dividends	7%		5%		0.81
Proportion of firms with above 5% institutional holdings	57%		58%		0.90
Proportion of firms with a subsequent equity offering	37%		47%		0.34
Majority holders					
Share in superior-vote stocks	90%	94%	81%	82%	0.003
Share in inferior vote stocks	56%	61%	70%	71%	0.007
Difference between share in superior- and inferior-vote stocks	34%	32%	11%	7%	0.001
Share in total vote before unification	75.6%	79.0%	76.5%	77.9%	0.89
Share in total vote after unification	68.2%	71.2%	74.6%	76.3%	0.08
Loss of voting power	7.4%	7.1%	2.0%	0.8%	0.001
Superior-vote shareholders					
Price premium over inferior-vote stocks[c]	55%	28%	35%	14%	0.06
Loss of voting power	23.7%	24.4%	27.9%	34.7%	0.008

[a] Calculated at the end of the year preceding the unification.

[b] NIS (New Israeli Shekels) is the local currency. During the sample period \$1 ≅ 3.0 NIS, on average.

[c] Calculated a year before the unification, using a sample of 53 firms. Only 53 of our 84 firms had both stock classes actively traded on the Tel-Aviv Stock Exchange a year before the unification.

Table 3
Tests of the majority shareholders' dominance hypothesis: When is compensation offered?

Panel A: the relation of compensation to the initial holdings of majority shareholders

	Number of firms with compensation	Number of firms without compensation	Percent of firms with compensation
$\alpha_1 - \alpha_2 \leq 0.04$	4	17	19%
$0.04 < \alpha_1 - \alpha_2 \leq 0.2$	9	12	43%
$0.2 < \alpha_1 - \alpha_2 \leq 0.4$	17	4	81%
$0.4 < \alpha_1 - \alpha_2$	16	5	76%

Chi-Square test of the equality of proportions (*p*-value) = 21.7
(0.001)

Spearman correlation of $\alpha_1 - \alpha_2$ with Dum_COMP (*p*-value)[a] = 0.49
(0.001)

The sample is partitioned into quartiles of $\alpha_1 - \alpha_2$ (where $\alpha_1 - \alpha_2$ is the majority holders' share in superior-vote stocks minus their share in inferior-vote stocks).

Panel B: The relation of compensation to the loss in the majority shareholders' voting power

	Number of firms with compensation	Number of firms without compensation	Percent of firms with compensation
$\Delta v_c \leq 0.3\%$	7	14	33%
$0.3\% < \Delta v_c \leq 3.5\%$	8	13	38%
$3.5\% < \Delta v_c \leq 9.0\%$	15	6	71%
$9.0\% < \Delta v_c$	16	5	76%

Chi-Square test of the equality of proportions (*p*-value) = 12.9
(0.005)

Spearman correlation of Δv_c with Dum_COMP (p-value)[a] = 0.50
(0.001)

The sample is partitioned into quartiles of Δv_c (where Δv_c is the majority holders' share in total votes before the unification minus their share after the unification).

Table 3 (Continued)

Panel C: The relation of compensation to the loss in voting power of superior-vote shareholders

	Number of firms with compensation	Number of firms without compensation	Percent of firms with compensation
$\Delta v_1 \leq 19.5\%$	12	9	57%
$19.5\% < \Delta v_1 \leq 27.5\%$	18	3	86%
$27.5\% < \Delta v_1 \leq 35.45\%$	12	9	57%
$35.45\% < \Delta v_1$	4	17	19%

Chi-Square test of the equality of proportions (*p*-value) = 19.0 (0.001)

Spearman correlation of Δv_1 with Dum_COMP (p-value)[a] = -0.24 (0.02)

The sample is partitioned into quartiles of Δv_1 (where Δv_1 is the share of superior-vote shareholders in total vote before the unification minus their share after the unification).

[a] Dum_COMP equals 1 when the firm offered compensation to superior vote shareholders, and equals 0 otherwise.

Table 4
Determinants of the price of vote

Dependent Variable	$Ln(\Delta v_c)$	$Ln(\Delta v_1)$	$[Ln(\Delta v_c)]^2$	DUMDINST	DUMSPO	FAMILY	Adj. R^2
$Ln(PVR)$	0.39						0.19
	(3.2)						
$Ln(PVR)$	0.79	-0.42					0.19
	(2.3)	(-1.2)					
$Ln(PVR)$	1.36		0.10				0.23
	(2.5)		(1.8)				
$Ln(PVR)$	1.48		0.11	-1.03			0.35
	(2.9)		(2.3)	(-2.9)			
$Ln(PVR)$	1.21		0.09		-1.14		0.37
	(2.4)		(1.8)		(-3.1)		
$Ln(PVR)$	1.21		0.08			0.86	0.31
	(2.3)		(1.7)			(2.3)	
$Ln(PVR)$	1.22		0.09	-0.54	-0.80	0.57	0.43
	(2.6)		(2.0)	(-1.7)	(-2.2)	(1.7)	
$Ln(\Delta e_c)$	2.22		0.09	-0.54	-0.80	0.57	0.83
	(4.8)		(2.0)	(-1.7)	(-2.2)	(1.7)	

Δe_c and Δe_1 are the compensation in % of book equity to the majority holders and to the superior vote shareholders, respectively; Δv_c and Δv_1 are the corresponding losses in voting power upon unification, in % of total vote; and $PVR = \Delta e_c / \Delta v_c = \Delta e_1 / \Delta v_1$ is the price of voting rights. DUMDINST equals 1 for firms where institutional investors' holdings in inferior vote stocks exceed their holdings in superior-vote stocks by at least 1% (DUMDINST=0 otherwise). DUMSPO equals 1 for firms that issued stocks after the dual class unification (and equals zero otherwise). FAMILY equals 1 when one person or a family control the firm, i.e., are the majority holders (FAMILY=0 otherwise). The sample comprises 42 firms that compensated their superior-vote shareholders.[a] *t*-statistics appear in parentheses below the coefficients.

[a] Forty-six firms offered compensation to their superior vote shareholders. However, four firms were excluded because of a negative Δv_c. The majority shareholders in these four firms gained voting power upon unification because of large holdings in inferior vote stocks.

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