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## The Market Value of Differential Voting Rights in Closely Held Corporations\*

### I. Introduction

Recent advances in the theory of the firm suggest an important role for the market for corporate control. Along with competition in the managerial labor market, various monitoring and bonding mechanisms, and managerial compensation schemes, competition for the right to determine or influence investment and financing decisions can play a role in disciplining a firm's managers or decision makers. Most notably, Manne (1965) and Fama (1978) view the market for corporate control as facilitating the allocation of corporate assets to their highest valued use. That is, tender offers, merger bids, and proxy contests enable outsiders to obtain control and capture gains from implementing an improved set of investment and financing decisions. Consequently, the theory of the corporation implies that the property rights associated with corporate control are valuable.

Several previous studies have provided direct or indirect evidence on the value of control. These include Bradley (1980), Meeker and Joy (1980), Bradley, Desai, and Kim (1983), Dodd and Warner

\* This paper has benefited from helpful comments by Sanajai Bhagat, Jim Brickley, Mike Hopewell, Steven Manaster, George Racette, and especially Mike Jensen, and from presentations at UCLA and the University of Utah. Rick Dark provided valuable computational assistance. A portion of this work was done while W. Mikkelson was at Dartmouth College.

This study extends research that documents a price difference between share classes that are differentiated only by voting rights. Six companies that have two publicly traded share classes are examined. For each firm, voting control is concentrated in the hands of principal officers and directors. Price differences between the share classes are observed even though none of the firms has been the target of a publicly announced takeover attempt or experienced an important change in the distribution of ownership of voting rights. Examination of the relative pricing of the share classes over time and around important corporate events fails to uncover the source of the price differences.

(1983), Lease, McConnell, and Mikkelsen (1983), Levy (1983), and Bhagat and Brickley (1984).

Lease, McConnell, and Mikkelsen (LMM) studied the share prices of 30 companies that had two classes of publicly traded common stock outstanding during the period 1940–78 that were differentiated only by their voting rights. Month-end trade prices for the two share classes from the same day of trading were used to infer the value of differentiating voting rights, or rights to control the firm's activities. For 26 of the 30 firms, the observed month-end pairs of trade prices were consistent with a positive price premium for the class of shares with superior voting rights. The average price premium placed on the class of shares with superior voting rights relative to the class with inferior voting rights was 5.4%. For four firms that had voting preferred stock outstanding in addition to the two classes of common stock, the class of common stock with superior voting rights traded systematically at a discount relative to the class of common with inferior voting rights. The average discount between the prices of the two common classes in these latter four firms was 1.25%. Thus, in 26 of 30 cases the relative pricing is consistent with a positive value of control.

This paper extends the analysis of LMM by examining six firms that have outstanding two classes of common stock that are differentiated only by voting rights and are actively traded on a national stock exchange. The particular voting structure of these six cases represents a cross-section of the 30 firms earlier examined by LMM. The decision to concentrate on these six companies stems from the belief that the determinants of the differential value of voting rights are sufficiently complex and subtle that a case study approach is warranted. Further, of the 30 firms identified by LMM as satisfying their selection criteria, 22 firms had retired their inferior voting shares by 1966. The Center for Research in Security Prices daily returns data base only extends back to 1962 and significant corporate events are difficult to locate before 1960, which gave further impetus for concentrating on these six firms.

The objective of this study is to provide evidence that can identify or rule out alternative explanations of the price differences. Specifically, this paper addresses the following five questions not examined in the earlier study:

1. What is the impact of the issuance of the inferior voting stock on the wealth of the firm's stockholders?
2. How do the price differences between the two classes of stock vary through time?
3. What is the concentration or distribution of voting power among stockholders, and does it change through time?
4. Does the value of control change at the announcement of significant corporate events, for example, acquisition announcements?

5. Are the price differences between share classes related to differential trading volume?

The next section describes the voting rights structures of the six firms studied and the impact of the issuance of the inferior voting shares on the firms' existing stockholders. Section III presents alternative hypotheses on the relative pricing of the share classes. Evidence on the pricing of the shares of the six firms is introduced in Section IV. Price ratios for the two classes of shares over time are presented. The possible sources of the differences between the prices of the two classes of shares are investigated in Section V. The concentration of voting power and changes in price ratios around the announcement of important corporate events are investigated. In addition, estimates of the relationship between relative trading volume and price differences are reported. A commentary and concluding remarks are presented in the sixth section.

## II. Description of the Data

### A. *Rights of the Common Stock Classes*

The six firms studied satisfy the following two selection criteria: (1) the firm has two classes of common stock outstanding with identical rights to the firm's cash flows, but the classes have different voting rights; (2) both classes of common stock trade actively on the same exchange.<sup>1</sup> The first criterion requires that both classes are entitled to the same dividend payments, capital distributions, and payments in liquidation but ensures the classes have different voting rights. The second criterion is intended to eliminate price differences due to the trading locale of the two classes.

The six cases analyzed are American Maize-Products, Brown-Forman Distillers, Harvey Hubbell, Plymouth Rubber, Presidential Realty, and Resorts International (formerly Mary Carter Paint). Table 1 presents a summary of the voting structures of the six firms for the years 1960, 1970, and 1980. The second column gives the year of issuance of the common stock with limited voting rights. Column 3 lists the classes of common stock and other securities with regular voting rights that have been outstanding at any time since the initial offering of limited voting common stock. An asterisk is placed to the left of the stock issue with superior voting rights. The fourth column presents the principal voting rights assigned to each class of securities. Columns 5–

1. All six firms studied trade on the American Stock Exchange. Since 1957, the New York Stock Exchange has prohibited listing the common stock of a company that has outstanding two classes of shares with differential voting rights.

TABLE 1  
Descriptive Summary of the 54 Firms with Classes of Common Stock Differentiated Only by Voting Rights

Company	Year Limited Voting Stock Issued	Common Stock and Other Voting Securities Outstanding	Voting Rights	Shares Outstanding (Thousands)			Percentage of Total Votes Controlled by Each Class of Securities		
				1968	1970	1980	1960	1970	1980
Amstar	1960	Class A ordinary	1 vote/share for 30% of directors	...	2,957	3,427	...	67%	66%
		Class B convertible	1 vote/share for 30% of directors	...	1,299	1,758	...	33	34
		7% conv. pfd	35 votes/share for all directors	...	407	407	...	0	0
Avco	1959	Class A common	1 vote/share	1,017	3,239	3,959	100	100	100
		Class B common	None	2,216	7,403	8,627	0	0	0
		Class A convertible	20 votes/share	641	1,157	1,572	98	89	85
		Class B convertible	1 vote/share	764	1,946	3,988	5	8	11
		Series A conv. pfd.	1 vote/share	...	423	...	...	7	...
		Series B conv. pfd.	1 vote/share	...	866	...	...	1	...
		Series C conv. pfd.	1 vote/share	...	...	1,302	...	...	4
		Class A common	1 vote/share	...	815	815	...	100	100
		Class B convertible	None	...	834	848	...	0	0
		Class A common	1 vote/share for 70% of directors	...	479	479	...	20	15
		Class B common	1 vote/share for 10% of directors	...	1,916	2,335	...	89	85
Manville	1961	Class A convertible	100 votes/share	1,300	4,144	9,433	3	11	10
		Class B convertible	1 vote/share	572	349	890	97	89	90

Number of votes per share was increased from 10 to 15 in January, 1976.

\*Series A and Series B preferred stocks were offered through a public offering in 1949 and November 1970, respectively. Series A was retired in February, 1978, and Series B was retired in September 1978. Series C, 7% conv. pfd. that stock was issued through a tender offer in August 1978.

†None with the superior voting rights.

7 present the number of shares outstanding in 1960, 1970, and 1980. The final three columns give the percentage of the firms' total votes controlled by each class of security for the same years.

The six firms represent a diversity of voting structures. For American Maize-Products and Presidential Realty, the voting rights of the two common stock classes are distinguished only by the slates of directors each class is entitled to elect. The voting rights structures of Brown-Forman Distillers and Plymouth Rubber are relatively simple. For both firms the Class A shares hold all of the voting rights. For Harvey Hubbell and Resorts International, the classes of voting securities have different numbers of votes per share, but all classes vote jointly on all matters, including the election of members of the board of directors.

The voting rights structures of American Maize-Products and Harvey Hubbell are unique in that they include voting preferred stock. For both firms, the two classes of common stock vote with preferred, but in neither case does the voting power of the preferred stock dominate the voting power of either class of common stock.

A description of the rights of the two classes of common stock was obtained from the company's articles of incorporation, a prospectus, or proxy statements. According to these documents, for all six firms the rights to dividends and other capital distributions are the same for the two classes of common stock. Since the date of issuance of the limited voting stock, dividend payments to the two classes have been identical for all of the firms and any stock dividends have been proportionately the same for both classes.

### *B. Issuance of Limited Voting Shares*

For each company, the limited voting shares were first issued sometime between December 1959 and June 1969.<sup>2</sup> All of the firms except Resorts International issued limited voting shares to existing shareholders on a pro rata basis. Except in this case, all stockholders held the same ratio of superior voting shares to inferior voting shares. Therefore, the offering of limited voting shares did not immediately affect the concentration of voting power.<sup>3</sup>

A possible reason for the creation of nonvoting or limited voting common stock is to enable the firm to issue common stock publicly in the future without a significant impact on the distribution of ownership

2. For Brown-Forman Distillers, Harvey Hubbell, and Plymouth Rubber, the *Wall Street Journal* reported the firm's announcement of plans to issue limited voting common stock. The report described the terms of the offer, but did not disclose any motivation of the distribution.

3. Easterbrook and Fischel (1983) provide a comprehensive analysis of the legal environment of corporate voting rights. They argue that voting rights are structured to reduce agency costs.

of the firm's voting rights.<sup>4</sup> Moreover, if the creation of limited voting or nonvoting shares brings about a greater concentration of voting power than would exist otherwise, an additional effect may be to raise the costs of acquiring control of the firm. Costs of acquiring control may increase because a smaller number of shareholders that hold dominant voting control can act more effectively as a collusive group in response to an outside takeover attempt. Creating a class of shares with no or limited voting rights and leaving voting control closely held by a few stockholders can raise the price, or premium, that the controlling stockholders receive from an outsider seeking to acquire control of the firm.

The issuance of nonvoting or limited voting shares and an increase in the expected premiums associated with an outside bid for control has ambiguous implications for the wealth of securityholders. Higher offer premiums necessary to gain control imply higher payoffs to the holders of securities with voting rights in the event of a takeover. On the other hand, greater concentration of voting power may reduce the likelihood of a successful value-increasing takeover, which has negative implications for the holders of voting rights. Furthermore, a reduction in the likelihood of a takeover may alter managerial incentives. If the issuance of limited voting shares causes the market for corporate control to work less effectively as a disciplining mechanism, managers may deviate further from the set of investment and financing decisions that maximize the value of the firm. These effects of a change in managerial incentives imply a reduction in the wealth of stockholders who do not directly control the firm's activities.

Alchian and Demsetz (1972) suggest another reason that the issuance of nonvoting shares may benefit securityholders. In particular, the issuance of nonvoting shares may deter takeovers that do not increase wealth, and nonvoting shares may reduce managers' allocation of the firm's resources toward efforts to thwart outside takeover attempts that are not in securityholders' interests.

The preceding arguments imply that the issuance of limited voting shares to reduce the likelihood of a change in control may or may not be in the interests of stockholders. To shed some light on this question, the monthly returns for an equally weighted portfolio of the sample firms for the period from 24 months before through 6 months after issuance of the inferior voting stock were examined. Both unadjusted and market-adjusted returns were calculated. The month of issuance was designated as month 0.

The results (not reported here) indicate that the limited or nonvoting shares were issued after generally positive common stock returns for

4. The following analysis of the effects of issuing limited voting shares has benefited from DeAngelo and Rice's (1983) theory of antitakeover charter amendments.

the issuing firms and for the market. Over the 24-month period preceding the month of issuance, the cumulative average unadjusted common stock return is 57.52% and the cumulative average difference between the common stock returns and market returns is 35.57%. The positive preissuance returns suggest that firms issued limited voting stock after experiencing positive common stock performance or that the announcement of the issuance of limited voting stock conveyed good news about the firm. But because most of the preissuance positive average monthly adjusted returns are observed from month -24 through month -12, the decision to issue limited voting shares appears to follow positive common stock returns rather than cause an increase in the value of common stock.

A different pattern of average common stock returns emerges following the issuance of the limited voting shares. From the month of issuance (month 0) through 6 months after issuance, generally negative unadjusted and adjusted average returns are observed. The average cumulative unadjusted return is -18.57% over months 0 through +6. Over the same period, the average cumulative adjusted return is -15.37%. The average adjusted common stock return is negative in 6 of these 7 months.

The common stock returns during and following the month of issuance imply that unfavorable information becomes available following the issuance of limited voting stock. However, it is unlikely that the unfavorable information is the issuance of the limited voting shares. In the cases where a specific announcement date is identified, the announcement month precedes the issuance month and the returns are positive in that month. Thus, these results do not resolve whether the issuance of limited voting shares helps or harms the firm's stockholders.

### III. Alternative Hypotheses on the Pricing of the Share Classes

This section presents hypotheses about the market value of control, that is, the relative pricing of two classes of shares differentiated only by voting rights. These are hypotheses about trade prices that reflect investors' marginal valuation of superior versus inferior voting shares.

#### A. *Zero Value of Control*

The null hypothesis is that the market value of control is zero and the two share classes are priced the same. An argument in support of the null hypothesis is that most trades of common stock involve investors with no direct control over the firm's activities. Investors who hold a small portion of the firm's voting shares have little or no ability to allocate the firm's resources in a way that directly or indirectly benefits them differently from the holders of nonvoting shares. Therefore, ra-

tional investors with no opportunity to capture incremental benefits from holding voting rights should value the two classes identically. This observation follows from the fundamental principle that perfect substitutes are priced the same.

### *B. Positive Value of Control*

An alternative hypothesis is that the market value of control is positive. An efficient capital market prices perfect substitutes the same; therefore, a systematic price difference between the two share classes implies one class of shareholders is expected to receive incremental cash or noncash benefits, directly or indirectly, even though the articles of incorporation imply both classes have identical claims to the firm's assets and payouts. If the null hypothesis is rejected, the interesting question is why control is valuable.

One plausible explanation for a positive value of control is that the holders of voting rights, or a subset of investors holding voting rights, may be able to allocate the firm's resources to their own benefit. There appear to be a variety of ways controlling stockholders can receive incremental benefits even though both classes of stockholders hold identical explicit claims to the firm's cash flows and assets. For example, a firm may purchase inputs from (or sell outputs to) another firm owned by controlling stockholders at below (or above) competitive prices. The controlling stockholders receive incremental benefits from the subsidization of another firm "owned" by these stockholders. But for these differential benefits to be reflected in the relative share prices of the two classes, there must be a number of investors trading shares with voting rights who potentially can capture the incremental benefits.

A second explanation for a positive market value of control is the possibility of offers by outsiders to acquire control. A difference between the market value of the two share classes can reflect the expected premium another firm or group of investors may offer to acquire control over the firm's investment and financing decisions. A bidder for control pays a premium for the shares with voting rights, that is, a price greater than the postacquisition value of the target shares, only because holding control of the target firm is expected to provide the bidder with incremental cash flows or benefits not received by the target firm's nonvoting shareholders.<sup>5</sup> Thus, both explanations of the alternative hypothesis that control is valuable rely on expected differential benefits for the holder of control or a potential acquirer of control.

5. DeAngelo and DeAngelo (1983) document four cases where control of a firm with two share classes was acquired and the shareholders with superior voting rights received a substantial premium relative to the shareholders with inferior voting rights.



### C. Negative Value of Control

A final hypothesis is that the market value of control is negative. If there exists the potential of legal claims brought by nonvoting shareholders against the class of controlling shareholders, the voting shares may be priced lower than nonvoting shares. Such legal claims may arise if the controlling shareholders have benefited from a violation of the articles of incorporation requiring equal payoffs to both classes of shares. If expected future incremental positive payoffs to controlling or voting stockholders are sufficiently small, potential legal claims on behalf of nonvoting shareholders due to incremental benefits already received by voting shareholders may imply a negative value of control. That is, the value of expected payoffs to nonvoting shareholders due to their legal claims may exceed the value of expected future positive incremental (legal or illegal) payoffs to the holders of control.<sup>6</sup>

Thus, there exist plausible arguments that the market value of control can be zero, positive, or negative. However, these hypotheses are not mutually exclusive. Trading prices may reflect the net effect of both positive and negative components of the value of control.

## IV. Evidence on the Pricing of the Share Classes

The trading prices observed in this study probably do not reflect transactions with important direct effects on the distribution or concentration of voting power, as we document below. Therefore, pricing differences between the common stock classes that represent the value of differential voting rights may reflect the possibility that accumulated transactions over time alter voting power significantly or that a takeover attempt materializes at a future date. At the same time, it should be noted that evidence of no systematic price differences between the two classes of stock does *not* imply that the value of control is zero. That finding may simply reflect that the probability of wresting control from a dominant majority is close to zero.

For each calendar year, table 2 summarizes the relative pricing of the two classes of shares. The first row of data for each firm presents the annual average ratio of the month-end price of the stock with superior voting rights to the price of the stock with inferior voting rights. The two prices are closing prices for the same day of trading. The second row contains the sample standard deviation of the monthly price ratios.

6. Arkansas Natural Gas is an interesting example of a firm where the superior voting shares sold at a discount relative to the inferior voting shares well before the first public announcement of legal action initiated by the SEC on behalf of the inferior voting stockholders. The issue was resolved in 1953 when the inferior voting shareholders received an incremental dividend and their stock was retired in exchange for an equal amount of superior voting shares.



Plymouth Rubber:																				
Mean price ratio	...	...	...	...	1.023	1.067	1.055	1.066	1.122	1.135	1.071	1.128	1.199	1.158	1.242	1.289	1.378	1.228	1.149	
Sample standard deviation of price ratio	...	...	...	...	.029	.042	.051	.076	.074	.050	.042	.099	.075	.088	.216	.119	.110	.114	.133	
No. of observations >1.0	...	...	...	...	8	11	10	7	11	10	6	8	6	7	6	8	12	12	122	
No. of observations <1.0	...	...	...	...	2	0	1	1	0	0	0	0	0	0	0	0	0	0	4	
Total no. of observations	...	...	...	...	12	11	12	11	12	10	7	9	6	8	6	8	12	12	136	
Minimum price ratio	...	...	...	...	.978	.022	.967	.968	1.000	1.075	1.000	1.046	1.100	1.000	1.059	1.143	1.222	1.059	.967	
Maximum price ratio	...	...	...	...	1.085	1.147	1.143	1.180	1.195	1.211	1.125	1.278	1.286	1.231	1.636	1.462	1.529	1.500	1.636	
Presidential Realty:																				
Mean price ratio	...	...	...	...	1.017	1.008	1.006	1.009	1.012	1.073	1.009	1.028	1.013	1.056	1.054	1.041	1.126	1.000	1.045	1.007
Sample standard deviation of price ratio	...	...	...	...	.028	.024	.021	.010	.024	.027	.020	.044	.047	.019	.038	.030	.082	.084	.053	.098
No. of observations >1.0	...	...	...	...	5	5	3	6	5	12	6	5	8	5	8	5	7	6	5	7
No. of observations <1.0	...	...	...	...	1	2	2	0	2	3	0	2	2	2	3	2	1	0	5	3
Total no. of observations	...	...	...	...	9	12	11	9	12	11	11	12	12	12	12	9	11	12	8	11
Minimum price ratio	...	...	...	...	.980	.971	.984	1.000	.979	.974	.992	1.023	.974	.975	.980	.953	.968	.941	.964	1.000
Maximum price ratio	...	...	...	...	1.073	1.048	1.061	1.027	1.060	1.081	1.049	1.145	1.125	1.038	1.089	1.047	1.220	1.200	1.111	1.263
Mary Carter Paint:																				
Mean price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.421
Sample standard deviation of price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of observations >1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of observations <1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total no. of observations	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Minimum price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maximum price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Resorts International:																				
Mean price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sample standard deviation of price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of observations >1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of observations <1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total no. of observations	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Minimum price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maximum price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plymouth Rubber (continued):																				
Mean price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sample standard deviation of price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of observations >1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No. of observations <1.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total no. of observations	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Minimum price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maximum price ratio	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Month-end ratio of the price of stock with superior voting rights to the price of stock with inferior voting rights. Prices are closing prices for the same day.

The third and fourth rows present the number of ratios in each year that are greater than 1.0 and less than 1.0, respectively.

The right-hand column presents summary statistics of each firm's price ratios for the entire sample period. In all six cases, the null hypothesis that the mean of the natural log of the price ratios equals zero is rejected at the 1% level.<sup>7</sup> With the exception of American Maize-Products, the mean price ratio is greater than 1.0. That is, on average the shares with superior voting rights traded at a premium relative to the shares with inferior voting rights. The superior voting rights shares of American Maize on average traded at a statistically significant discount relative to the inferior voting rights shares. The sign test and Wilcoxon signed-rank test also were conducted to test the null hypothesis that the median price ratio is unity. For all six firms that hypothesis also is rejected at the 1% level using both of these non-parametric tests.<sup>8</sup>

The year-by-year results presented in table 2 reveal some variation in the relative pricing of share classes. For American Maize-Products the relative pricing has been consistent through time. The average price ratio was less than 1.0 in each calendar year from 1970 through 1980. In addition, the majority of price ratios in each year was less than 1.0. The class of common stock with superior voting rights traded predominantly at a discount relative to the class with inferior voting rights.

Over the years 1961 through 1968, Brown-Forman Distillers' Class A (superior voting rights) traded at an annual average premium of 5.7% or greater. For all 96 observations of month-end price ratios, the superior voting class traded at a premium. In contrast, between 1970 and 1980 the average annual price ratio was less than or equal to 1.0 in 6 years. A price ratio less than 1.0 was observed in 71 of 132 months during this

7. Merely observing intraday price differences is not sufficient to reject the null hypothesis. Observed price differences to some extent reflect differences in the intraday timing of trades. Under the null hypothesis, the intraday price differences solely represent nonsynchronous trades of securities that are perfect substitutes. That is, the natural log of the price ratio is analogous to an intraday common stock return. The price in the denominator is the share value of the limited voting common stock and the numerator is the sum of (1) the share value of the limited voting stock, (2) the per share value of incremental voting rights, and (3) a random error with mean zero that reflects price differences due to nonsynchronous trade prices. The null hypothesis, therefore, is that the incremental share value associated with control equals zero.

8. The same three tests were conducted with the time series of month-end price differences. Specifically, a *t*-test of the hypothesis that the mean price difference between the two share classes equal zero was undertaken for each firm and the sign and Wilcoxon ranked-sign tests were conducted with the differences in prices. The results were indistinguishable from those in table 3. In several cases the log of the price ratios and the price differences were serially correlated. To correct for this problem the correlation coefficient was estimated with the Cochran-Orcutt iterative procedure. The statistical tests were corrected for serial correlation according to the method developed by Kadiyala (1968). Also see Theil (1971, chap. 6).

period. It appears, therefore, that in 1969 the relative valuation of the two share classes underwent a permanent adjustment. The market value of control fell. Examination of financial statements, the *Wall Street Journal Index*, and 10K reports around 1969 uncovered no firm-specific events that explain the change in the relative valuation of Brown-Forman Distillers' A and B shares.

A similar time-series pattern of monthly price ratios is observed for Harvey Hubbell. Over the years 1960 through 1969, 10 annual average price ratios and 85 of 116 month-end ratios were greater than 1.0. However, from 1970 through 1980 every average annual price ratio was lower than any of the average annual price ratios observed during the prior 10 years. After 1969, only four of 11 average annual ratios were greater than 1.0. In addition, 68 of 132 month-end price ratios between 1970 and 1980 were less than 1.0. Like Brown-Forman, the relative valuation of Harvey Hubbell's A and B shares underwent a permanent change toward the end of the 1960s. The price ratios of Harvey Hubbell declined and became less than 1.0 for most of the 1970s.

Examination of financial statements and the *Wall Street Journal Index* around 1969 and 1970 uncovered two potentially important corporate events. In February 1969, Hubbell acquired Kerite, Inc., and in August 1970, Hubbell agreed to terms to acquire Pyle-National, Inc. Kerite was acquired with a new issue of voting preferred stock and the acquisition of Pyle-National was terminated by a forced divestiture in 1972. The time series of price ratios around the months of the acquisition announcement do not reveal any changes in the price ratios that can be associated with the acquisitions. No explanation has been found for the permanent decline in the value of control near the beginning of the 1970s.

All of the annual average price ratios of Plymouth Rubber, Presidential Realty, Mary Carter Paint, and Resorts International were greater than 1.0. Also, in all years the number of month-end price ratios greater than 1.0 exceeded or equaled the number of price ratios less than 1.0. The negative voting premiums observed in the 1970s for American Maize, Brown-Forman, and Harvey Hubbell were not observed for any of the other firms.

For Plymouth Rubber, the average annual ratio never fell below 1.066 in the 1970s and has increased over time. The price ratio of Presidential Realty's two share classes has not displayed dramatic changes. The range of annual average price ratios was from 1.000 to 1.126.

The minimum average annual ratio for Resorts International was 1.203 during the 1970s. However, the average price ratios for Mary Carter Paint/Resorts International were noticeably lower but still positive in 1968 and 1969. Prior to 1968, the lowest average annual ratio was 1.230.

Possibly relevant to the observed pattern of price ratios was that in May 1968, Mary Carter Paint sold its paint division and the name "Mary Carter Paint." The value of the transaction represented approximately 20% of the book value of the firm's total assets. However, a decline in the price ratio of the two share classes is observed in June 1967. It is unclear whether the decline in price ratio by mid-1967 was related to the disposal of the paint division. During 1970, the price ratio returned to its pre-1968 level. Examination of the *Wall Street Journal Index* and financial statements did not provide an explanation for the temporary lower value of control during the latter part of 1967 through 1969. This period is near the time the value of control decreased permanently for Brown-Forman and Harvey Hubbell.<sup>9</sup>

## V. Investigation of the Sources of the Price Differences

The evidence on price differences implies variation in the value of control across firms as well as through time. But the observed variations do not provide a direct explanation for the price differences between share classes. Nor does an examination of financial news sources uncover any outstanding events that explain the apparent changes in the value of control. This section investigates the six cases in more detail and provides evidence that is relevant to possible explanations for the observed price differences.

### A. Concentration of Share Ownership

An important factor in interpreting the price differences between the two classes is the distribution of voting rights among investors. For example, if one individual holds a majority of the firm's voting rights and does not alter his or her holdings, observed trade prices reflect transactions among individuals with little or no prospect of influencing the firm's activities. On the other hand, if voting rights are held dispersely, trade prices more likely reflect the value a single investor or a coalition of investors places on the differential or incremental benefits expected to be received after acquisition of sufficient voting power.

Table 3 summarizes the common stock holdings of principal shareholders and management for the years 1971, 1974, 1977, and 1980. Data on share ownership were collected from annual meeting proxy state-

9. On average, the price ratios were greater than 1.0 in the months immediately following the issuance of the inferior or nonvoting shares. The average ratio for all six firms was 1.066 at the end of the issuance month, 1.101 at the end of the second month, and 1.097 at the end of the third month. On average the market value of control is positive at the time of issuance. The one exception to this pattern is American Maize-Products. During the months subsequent to issuance, American Maize-Products superior voting shares sold at a discount to the limited voting shares. However, this pattern is consistent with the average relative pricing of American Maize-Products' two classes of stock for the entire sample period.

**TABLE 3** Summary of the Concentration of Share Ownership of Six Firms with Classes of Common Stock Differentiated Only by Voting Rights for 1971, 1974, 1977, and 1980

Company (1)	Year (2)	Percentage of Shares Controlled Directly or Indirectly by Principal Shareholders*† (%)		Percentage of Shares Controlled Directly or Indirectly by Directors and Officers* (%)	
		Superior Voting Class (3)	Inferior Voting Class (4)	Superior Voting Class (5)	Inferior Voting Class (6)
American Maize- Products	1971	54.5	53.4	57.8	55.5
	1974	55.9	53.4	59.9	54.9
	1977	58.5	46.5	65.4	47.4
	1980	52.3	38.4	53.5	42.0
Brown-Forman Distillers	1971	31.7	‡	65.4	‡
	1974	36.7	‡	65.8	‡
	1977	37.7	‡	52.3§	‡
	1980	31.6§	‡	63.3	‡
Harvey Hubbell	1971	36.8		38.9	.7
	1974	37.2		40.0	.8
	1977	37.5		39.1	.6
	1980	36.8		43.4	1.7
Plymouth Rubber	1971	48.6	41.6	54.7	47.4
	1974	48.6	55.4	55.4	51.8
	1977	48.6	46.3	56.4	56.4
	1980	51.3	57.7	57.7	56.6
Presidential Realty	1971	40.8	8.0	51.7	19.6
	1974	41.1	5.5	51.5	15.6
	1977	40.3	4.8	51.8	15.3
	1980	40.1	3.8	45.3	9.2
Resorts International	1971	36.5	3.0	42.7	6.5
	1974	37.9	3.8	44.3	8.2
	1977	48.3	4.3	44.5	9.7
	1980	46.1	1.5	47.0	5.8

\*Variation in the percentages from year to year to some extent reflects changes in the information disclosed in the firms' SEC filings.

†Principal shareholders are individuals or institutional investors who hold more than 5% of the superior voting class shares.

‡No data on the ownership of Brown-Forman Distillers' nonvoting shares is reported in the 10K reports or annual proxy statements.

§The information disclosed in Brown-Forman Distillers' 1977 and 1980 10K and annual meeting proxy statements was not as complete as for surrounding years. This appears to explain the lower percentages in col. 5 for the year 1977 and in col. 3 for the year 1980.

||No investor holds more than 5% of Harvey Hubbell's inferior voting shares.

ments, prospectuses, and 10K reports. The companies are listed in column 1; column 2 indicates the year of the ownership data. Columns 3 and 4 present the percentage of the firm's superior voting class shares and inferior voting class shares, respectively, that are owned directly or indirectly by investors who control more than 5% of the superior voting class shares. The percentages of shares of each class held directly or indirectly by principal officers or members of the board of directors are presented in columns 5 and 6.

For four of the six firms, officers and directors as a group have controlled a majority of the firm's superior voting class shares. In the other two cases, Harvey Hubbell and Resorts International, directors and officers as a group control a larger percentage of the firm's superior voting class shares than any single "outside" investor. In neither case is there evidence of a small subset of investors who hold enough shares to rival directors and officers for voting control. In all six cases, only a few individuals, often related, control a dominant block of the firm's superior voting shares. This evidence is consistent with DeAngelo and DeAngelo's (1983) observation that, given a choice between voting and nonvoting shares of the company they manage, managers choose to concentrate their holdings in full voting shares.

The data on share ownership suggest that between 1971 and 1980 there were no important changes in the concentration of share ownership for any of the six firms. Since the time of issuance there have been no secondary distributions of superior voting class shares. None of the firms has been a target of a tender offer or a publicly announced merger candidate. Nor have any of the firms been involved in a proxy contest.

The concentration of voting power and the absence of takeover activity or active insider trading suggest that observed market prices of the share classes typically reflect the marginal valuation of investors who do not control the firm's investment and financing activities. Furthermore, these marginal investors have little or no prospect of receiving incremental payoffs directly from the firm. Therefore, if the observed positive values of control represent expected differential payoffs to the marginal investor, the price differences most likely reflect the prospect of an outside bid to acquire control.

The data in table 3 also are interesting because officers and directors collectively hold dominant voting control in all six cases, but there is variation across firms in the proportion of the firm's total common stock held by officers and directors. For Harvey Hubbell, Presidential Realty, and Resorts International in 1980, the existence of limited voting shares enabled officers and directors collectively to hold dominant voting control while owning (directly or indirectly) less than 15% of the firm's total common stock. The officers and directors of American Maize and Plymouth Rubber held more than 45% of the outstanding common stock in 1980.

The analytical framework of Jensen and Meckling (1976) implies that the smaller the security ownership claim of the holder of control over investment/financing decisions, the greater is the controlling securityholder's incentive to allocate the firm's resources to his or her exclusive benefit. Thus, in terms of their collective holdings of common stock, the principal officers and directors of American Maize, Brown-Forman, and Plymouth Rubber may have the greatest financial incentives to act in the interests of the firm's remaining stockholders.



To gain insight into this possibility, an estimate of the total market value of control ( $C$ ) was computed for the years 1965, 1970, 1975, and 1980 by the expression  $C = N_S(\bar{P}_S - \bar{P}_I)$ , where  $N_S$  is the number of superior voting class shares and  $(\bar{P}_S - \bar{P}_I)$  is the average month-end price difference between the superior and inferior voting class shares for the last 6 months of the respective years. The total dollar estimates of the value of control ( $C$ ) represent the total incremental value of superior voting class shares above the total value of an *equal* number of inferior voting class shares.

The estimated values of control do not suggest a relationship between the value of control and the proportion of common stock held by principal officers and directors.<sup>10</sup> For example, American Maize and Plymouth Rubber, two of the three firms with the greatest percentage of shares held by officers and directors, represent respectively the firms with the lowest and highest total market values of control measured relative to firm size.<sup>11</sup>

### B. Investment and Financing Decisions and the Value of Control

Changes in the value of control may be associated with significant investment and financing decisions. For example, a suboptimal investment or financing decision or a decision that conveys bad news about the firm's earnings prospects may increase the likelihood that the firm

10. For 1980, the last of the 4 years for which the aggregate value of control was computed, the dollar amounts are as follows:

Firm	Value of Control (\$)	Value of Control ÷ Market Value of Equity
American Maize-Products	- 809,000	-.010
Brown-Forman Distillers	-2,613,000	-.008
Harvey Hubbell	- 79,000	-.000
Plymouth Rubber	628,000	.135
Presidential Realty	14,000	.001
Resorts International	3,729,000	.012

11. Another interesting dimension of table 3 is to compare the director and officer ownership of both the superior and inferior voting shares. A plausible hypothesis is that the higher the director/officer ownership of the superior voting shares relative to their ownership in the inferior voting shares, the greater their incentive to allocate the firm's resources to the superior voting shares. If director/officer ownership were equal in both classes of stock, there would be no incentive to allocate resources from the inferior to the superior voting shares. In the cases of American Maize and Plymouth Rubber, where directors and officers hold a high percentage of both classes, there would be the least incentive to reallocate resources. In the cases of Harvey Hubbell and Resorts International, where ownership of the inferior voting shares by the directors/officers is small relative to their ownership in the superior voting shares, there would be the largest incentive to allocate resources from inferior to superior voting shares. However, we find negative and positive market values of control in both cases. American Maize has a negative market value of control while Plymouth Rubber has a positive value of control. Harvey Hubbell has a negative value of control while Resorts International has a positive value of control. Therefore, the relative director/officer ownership of superior and inferior voting shares does not seem to explain the market value of control in these cases.

will be a takeover target. As a result, the value of control increases. The next section investigates changes in the value of control around announcements of important investment and financing decisions.

*Corporate acquisitions.*—None of the six firms studied in this paper has been the target of a publicly announced tender offer or merger proposal. Thus, direct observation of the relative valuation of the two classes of shares during the time an outsider seeks to acquire control is impossible. However, there have been 17 tender offers, merger proposals, or large block stock purchases where one of the firms examined in this study sought control of another firm and an announcement date of the acquisition offer was identifiable in *The Wall Street Journal*. These events provide an opportunity to examine whether the acquisition of control of another firm, typically a significant investment and financing decision, is expected to provide the controlling stockholders of the acquiring firm with incremental benefits.<sup>12</sup>

For each tender offer or merger proposal, month-end price ratios are examined over a 10-month period centered around the announcement date of the offer. Table 4 presents 10 average month-end price ratios for each firm's set of acquisitions (cols. 2–6) and for the total sample of 17 acquisition events (col. 7). For example, column 2 contains the average month-end price ratios of American Maize-Products associated with its three acquisition proposals, beginning with 5 months before the announcement of the offer. The four pairs of price ratios at the bottom of table 4 represent before and after average price ratios for time intervals of different lengths centered around the announcement month.

The average ratios for the total sample of 17 acquisitions (col. 7) suggest that the relative value of shares with superior voting rights increases following the announcement of an acquisition offer. The average price ratios for months 0 through +4 are all equal to or greater than the average price ratios for months –5 through –1. The average month-end price ratio for the 5 months prior to the acquisition announcement is 1.025, and it rises to 1.052 for the 5 months following the announcement. The average price ratios imply that the announcement of an acquisition is associated with an increase in the value of control of the acquiring firm.

The pattern of average price ratios for the entire sample, however,

12. Other researchers suggest that managers or controlling stockholders of an acquiring firm may receive side payments or incremental benefits from an acquisition. For example, Grossman and Hart (1980) argued that a successful bidding firm must be able to "dilute" the claims of minority shareholders of a target firm in a tender offer, if the cash flows of the bidding firm are unaffected by the acquisition of control of the target firm. Dodd (1980) found statistically significant negative stock returns for acquiring firms at the announcement of merger offers. This research is consistent with the hypothesis that managers or controlling stockholders of the acquiring firm receive incremental benefits from acquisitions.

TABLE 4  
Average Month-End Price Ratios for Acquiring Firms with Classes of Common Stock Differentiated Only by Voting Rights for 10 Months around Acquisition Offer Announcements (Month 0)

Month(s) (1)	American Maize- Products (3 Events) (2)	Brown- Forman- Disillers (2 Events) (3)	Harvey Hubbell (7 Events) (4)	Presidential Realty (3 Events) (5)	Resorts International (2 Events) (6)	Total Sample (17 Events) (7)
-5	.971	1.168	1.993	1.009	1.108	1.026
-4	1.000	1.149	1.013	.997	1.087	1.033
-3	.984	1.131	1.000	1.000	1.087	1.023
-2	.993	1.130	1.017	.989	1.007	1.020
-1	.994	1.139	1.006	1.013	1.033	1.024
0	.989	1.198	1.013	1.026	1.122	1.046
+1	.984	1.196	.996	1.019	1.097	1.033
+2	.989	1.156	1.004	1.023	1.414	1.071
+3	.964	1.160	.998	1.011	1.385	1.059
+4	.941	1.166	1.012	1.020	1.378	1.062
-5 through 0 through +4	.998	1.143	1.006	1.001	1.065	1.025
-4 through -1	.973	1.175	1.005	1.020	1.279	1.052
-3 through +3	.993	1.137	1.006	1.000	1.054	1.025
-0 through -1	.982	1.178	1.003	1.020	1.254	1.052
0 through +2	.990	1.133	1.002	1.000	1.043	1.022
-2 through -1	.987	1.183	1.004	1.023	1.211	1.050
-1 through +1	.994	1.134	1.003	1.001	1.020	1.022
	.987	1.197	1.005	1.022	1.109	1.040

NOTE.—Month-end ratio of the price of stock with superior voting rights to the price of stock with inferior voting rights. Prices are closing prices for the same day. Plymouth Rubber had no acquisition announcements that we could identify.

appears to be attributable mainly to the subset of acquisitions by Brown-Forman and Resorts International. The fact that these two firms had the largest preannouncement price ratios suggests that when the value of control is positive, the value of control increases with the announcement of an acquisition. This observation is consistent with the hypothesis that a corporate acquisition increases the expected incremental benefits to the holders of control of the acquiring firm, particularly in those cases where control is valued the most.<sup>13</sup>

*Earnings, dividends, investment, and financing announcements.*— This section investigates whether the value of control is affected by the announcement of corporate earnings, dividend, or investment and financing decisions. These announcements are chosen because of their potential impact on the value of the firm. In addition, Manne (1964) argues that the value of voting rights depends on the value of the firm.

For the years 1975–80, changes in the value of control (or price ratio) of each firm are measured around the time of potentially important announcements by the firm. The sample of events includes all earnings and dividend announcements reported in the *Wall Street Journal*. In addition, all published announcements of corporate acquisitions, large block purchases of another company's stock, and announcements of capital structure changes were included. A large majority of the events dealt with the announcements of earnings or dividends. Few major investment/financing decisions were announced by these firms during the period 1975–80.

For each announcement, an adjusted common stock return for the limited voting or nonvoting class of shares was computed for the three trading days centered on the date of publication of an announcement in the *Wall Street Journal*. The return of the value-weighted portfolio of all common stocks included in the Center for Research in Security Prices file of daily returns was subtracted from the stock returns of the individual firms. The market-adjusted returns of the limited or nonvoting class of common stock are proxies for changes in the value of the firm. We assume that changes in the value of control do not have an important effect on the returns of the common stock with inferior or no voting rights.

Pre- and postannouncement average price ratios also were computed for each event. The average value of the ratio of the daily closing price of the superior voting class to the daily closing price of the inferior voting class was computed for trading days  $-5$  through  $-2$  and for trading days  $+2$  through  $+5$ . The change in price ratio prior to and following the 3-day announcement period measures the change in the value of control associated with the announcement.

13. For the acquiring firms, no statistically significant *daily* common stock returns, adjusted or unadjusted for market returns, are found at the announcement of acquisitions.

Two tests were conducted for each firm. The first test involves estimation of the linear relationship between the adjusted stock return on the 3-day announcement period and the change in price ratios from before to after the announcement. The null hypothesis is that no relationship exists. Rejection of the null hypothesis is consistent with Manne's argument that a relationship exists between changes in the value of control and changes in firm value. The second test examines the mean change in price ratio from before to after the announcement date. In addition, the mean changes in price ratio for the subgroup of events associated with the highest and lowest adjusted returns for the limited or novoting shares are tested for equality. Rejection of the null hypothesis that the change in the mean price ratio equals zero or that the mean changes in price ratio are equal between subgroups is consistent with Manne's contention.

Table 5 presents the results of both tests for each of the six firms. Row 1 presents the estimated correlation coefficient between the changes in price ratio and the 3-day market-adjusted common stock returns. Only for Resorts International is the null hypothesis of no relationship rejected (at the 5% level); however, the coefficient is negative for all six firms. Thus, for Resorts International the relationship between the change in the value of the firm's common stock with inferior voting rights and the change in the value of control is consistent with Manne's argument (1964). However, for the second set of tests, the null hypothesis is not rejected for any of the six firms. Row 2a presents the average change in price ratio from before to after the announcement date. Rows 2b and 2c give the average change in price ratio for the third of the events with the highest and lowest announcement period adjusted returns, respectively. Row 3 illustrates the  $t$ -value for the test of equality between the mean price ratio changes reported in rows 2b and 2c. In no case is the  $p$ -value of the  $t$ -test less than .150 although the sign is negative in all cases.

The results reported in table 5 document evidence of a significant relationship between changes in the value of control and changes in the "investment value" of common stock only for Resorts International. The evidence (weakly) suggests that the value of control for Resorts International is sensitive to changes in the firm's value. No evidence of such a relationship is found for the other five firms.

### C. Pricing and Trading Volume

In addition to differential voting rights, a possible determinant of the relative pricing of the two share classes is the differences in liquidity or trading activity between the classes. If two classes of common stock with identical expected payoffs are priced to provide equal expected returns net of all transaction costs, *ceteris paribus* the class of stock with higher transaction costs is priced lower. Thus, the class with

TABLE 5 Analysis of the Relation between Changes in Price Ratio and Changes in the Value of Common Stock around the Announcements of Corporate Events for the Six Firms with Classes of Common Stock Differentiated Only by Voting Rights (1975-80)

	American Marze-Products	Brown-Forman Distillers	Harvey Hubbell	Plymouth Rubber	Presidential Realty	Resorts International
1. Correlation between changes in price ratio and the 3-day market-adjusted returns of the inferior voting class of shares ( <i>t</i> -value)	-.170 (-1.13)	-.089 (-.64)	-.167 (-1.11)	-.173 (-1.69)	-.217 (-1.24)	-.421 (-2.37)
2. Average change in price ratio around the time of announcement:						
(2a) Total sample ( <i>t</i> -value)	-.005 (-1.53)	.003 (.110)	-.001 (-.02)	.006 (.21)	.010 (.90)	.000 (.01)
(2b) One-third of events with highest market-adjusted stock returns	.012	.008	-.006	.018	.010	.033
(2c) One-third of events with lowest market-adjusted stock returns	.000	.002	-.004	.018	.025	.029
3. Difference between the mean changes in price ratio of the subgroups with the highest and lowest market-adjusted stock returns ( <i>t</i> -value)	-.012 (-1.40)	-.010 (-1.20)	.002 (.142)	.036 (.41)	-.035 (-1.09)	-.062 (-.95)
4. Total no. of events:	45	52	48	17	33	28

Note: 1. Multi-lead ratio of the price of stock with superior voting rights to the price of stock with inferior voting rights. Prices are closing prices for the same day.  
 2. The events consist of 134 earnings announcements, 76 dividend announcements, 5 investment decision announcements, and 5 financing decision announcements.

lower trading volume, typically the superior voting class, may be associated with higher transactions costs that are reflected in relative share prices.

Numerous time-series regression models were estimated in an attempt to explore the relationship between differential share prices and trading volume differences. An example is as follows:

$$(P_S - P_I)_t = a_0 + a_1[\ln(V_S/V_I)]_t + a_2(V_S)_t + e_t.$$

The dependent variable is the month-end price difference between the price of the superior voting class ( $P_S$ ) and the price of the inferior voting class ( $P_I$ ). The independent variables are (1) the natural log of the ratio of monthly trading volume of the two share classes,  $\ln(V_S/V_I)$ , and (2) the monthly trading volume of the superior voting class,  $V_S$ .<sup>14</sup> Estimation of the model provides a test of whether the price differences reflect, in part, differences between transaction costs as measured by trading volume. (See, e.g., Demsetz 1968; Tinic 1972.)

The natural log of the ratio of monthly trading volumes measures the relative trading activity of the two classes. If transaction costs are correlated inversely with trading volume, a decrease in the volume ratio implies an increase in trading costs associated with the superior voting class relative to the inferior voting class. Thus, transactions costs associated with trading activity imply a positive relationship ( $a_1 > 0$ ) between the price difference ( $P_S - P_I$ ) and relative trading volume,  $\ln(V_S/V_I)$ .

The level of trading activity of the superior voting class is measured by monthly trading volume. If the relative trading costs also depend on the level of trading activity, the relationship between the price differences ( $P_S - P_I$ ) and level of trading volume ( $V_S$ ) is nonzero ( $a_2 \neq 0$ ). For example, if trading costs decrease with the level of trading activity, an increase in  $V_S$  implies an increase in ( $P_S - P_I$ ), that is,  $a_2 > 0$ .

No systematic effects were uncovered, and the results do not merit a detailed presentation here. Weak evidence consistent with a trading cost effect on the relative pricing of share classes was found for Brown-Forman Distillers and Harvey Hubbell. For both firms there is a positive and statistically significant relationship ( $\hat{a}_1 > 0$ ) between month-end price differences and relative monthly trading volume. However, for both firms an increase in the level of trading volume reduces the price difference, that is,  $\hat{a}_2 < 0$ . Controlling for the effect of relative trading volume, higher trading volume for the superior voting shares

14. Other time-series regression models also were estimated. Other independent variables included  $\ln(V_S)$ ,  $\ln(V_S/N_S)$ , where  $N_S$  is the number of superior voting shares outstanding, and dummy variables for alternate time periods in the sample period. Price ratios,  $P_S/P_I$ , also were run as the dependent variable. The results of all of these regressions failed to uncover any systematic and stable relationship between price differences or ratios and volume.

reduces the price difference, which suggests that transaction costs for the superior voting class increase relative to the inferior voting class.

The relationship between the price difference and relative trading volume is negative ( $\hat{a}_1 < 0$ ) and significant at the .05 level for Presidential Realty and Resorts International. The estimates of  $a_1$  for American Maize-Products, Plymouth Rubber, and Mary Carter Paint are not statistically significant. Overall, therefore, no consistent relationships between the price differences and volume measures are found.

## VI. Commentary and Conclusions

This paper studies the market value of control, as represented by differential voting rights, for six companies which currently have two classes of common stock outstanding that are actively traded on a major stock exchange and differ only in their voting rights. The value of control is estimated from closing prices of the two classes from the same day of trading.

For all six cases, the total sample period average price difference is statistically significant. The average value of control for the entire sample period is negative for one firm, American Maize-Products. Important changes over time in the relative pricing of the share classes also are observed for four firms. However, it is not possible to identify directly the cause of the shifts in the value of control.

The ownership of voting control of all six firms is concentrated in the hands of principal officers and directors. No important changes in share ownership are uncovered for any of the firms. Nor have any of the firms been the target of a takeover attempt or involved in a proxy contest. This evidence implies that the trade prices of the share classes reflect trades among investors who do not directly control the investment and financing policies of the firms, and who have little or no prospect of receiving incremental payoffs directly from the firm. For these firms a positive value of control, therefore, is best explained as reflecting the prospect of a bid to acquire control that offers higher compensation to the shares with superior voting rights. However, no direct support for this conclusion is provided by (1) examination of the relationship between price differences and the concentration of ownership of shares with superior voting rights or (2) responses of stock prices to corporate events.

The average price difference for the share classes tends to increase in response to announcements that the firms with two share classes are seeking control of another firm. On the other hand, the price differences are not generally related to announcements of potentially important earnings, dividends, and financing and investment plans. These results do not consistently support the notion that the marginal valuation of voting rights changes in response to changes in the market value of the firm.



The evidence of a relationship between price differences and trading volume that supports a transactions cost effect on share prices is weak. Transactions costs cannot explain the average price difference between the two share classes for any of the firms for the total sample period.

While we provide evidence that answers the five questions raised at the outset of this paper, we do not answer some basic questions that are raised by the results. For example, the motivation for the issuance of limited or nonvoting shares is left unresolved. Also, the variation of price ratios through time and the form of the benefits and costs reflected in the price ratios are unexplained. These open issues provide intriguing challenges to researchers in the area of corporate control.

## References

- Alchian, A., and Demsetz, H. 1972. Production, information cost, and economic organization. *American Economic Review* 62:777-95.
- Bhagat, S., and Brickley, J. 1984. Cumulative voting: The value of minority shareholder voting rights. *Journal of Law and Economics*, vol. 27.
- Bradley, M. 1980. Interfirm tender offers and the market for corporate control. *Journal of Business* 53:345-76.
- Bradley, M.; Desai, A.; and Kim, E. 1983. The rationale behind interfirm tender offers: Information or synergy? *Journal of Financial Economics* 11:183-206.
- DeAngelo, H., and DeAngelo, L. 1983. The allocation of voting rights in firms with dual classes of common stock. Working Paper, University of Rochester.
- DeAngelo, H., and Rice, E. 1983. Anti-takeover charter amendments and stockholder wealth. *Journal of Financial Economics* 11:329-59.
- Demsetz, H. 1968. The cost of transacting. *Quarterly Journal of Economics* 80:33-35.
- Dodd, P. 1980. Merger proposals, management discretion and stockholder wealth. *Journal of Financial Economics* 8:105-37.
- Dodd, P., and Warner, J. 1983. On corporate governance: A study of proxy contests. *Journal of Financial Economics* 11:401-38.
- Easterbrook, F., and Fischel, D. 1983. Voting in corporate law. *Journal of Law and Economics* 26:395-427.
- Fama, E. 1978. The effect of a firm's investment and financing decisions on the welfare of its securityholders. *American Economic Review* 68:272-84.
- Grossman, S., and Hart, O. 1980. Takeover bids, the free-rider problem, and the theory of the corporation. *Bell Journal of Economics* 11:42-69.
- Jensen, M., and Meckling, W. 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics* 3:305-60.
- Kadiyala, K. 1968. A transformation used to circumvent the problem of autocorrelation. *Econometrica* 35:93-96.
- Lease, R.; McConnell, J.; and Mikkelsen, W. 1983. The market value of control in publicly-traded corporations. *Journal of Financial Economics* 11:439-71.
- Levy, H. 1983. Economic evaluation of voting power of common stock. *Journal of Finance* 38:79-83.
- Manne, H. 1964. Some theoretical aspects of share voting. *Columbia Law Review* 64:1427-45.
- Manne, H. 1965. Mergers and the market for corporate control. *Journal of Political Economy* 73:110-20.
- Meeker, L., and Joy, O. 1980. Price premiums for controlling shares of closely held stock. *Journal of Business* 53:297-314.
- Theil, H. 1971. *Principles of Econometrics*. New York: Wiley.
- Tinic, S. 1972. Economics of liquidity services. *Quarterly Journal of Economics* 86:79-93.

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