OWNERSHIP OF DUAL CLASS SHARES AND PASSIVE INVESTMENT STRATEGIES

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Abstract

Previous studies of firms with two classes of stock find a price premium for the class with superior voting rights over the restricted voting rights shares. This premium changes over time and is related to the likelihood of a contested takeover attempt. These findings have implications for both passive and active investors. We find that for passive, buy-and-hold investors, restricted voting shares dominate superior voting shares in mean-variance space. This relationship also holds for a four factor model specification of stock returns. Our evidence indicates that passive, buy-and-hold investors can achieve a higher return with restricted vote shares than superior vote shares with no increase in either stand-alone or portfolio risk.

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1. Introduction

Though not as prevalent in the U.S. as in foreign markets, a substantial number of U.S. firms have two classes of shares of stock with different voting rights. The existence of these firms provides a unique opportunity to assess the value of a corporate vote and to explore the factors that affect this value, given that both classes of shares are identical in their financial characteristics and differ only in voting rights. Lease, McConnell and Mikkelson (1983, 1984), Levy (1983), DeAngelo and DeAngelo (1985), Jog and Riding (1986), Megginson (1990), Foerster and Porter (1993), and Chung and Kim (1999) document that the superior vote shares sell at a higher price than the restricted vote shares with the price premium being the value of the vote to the marginal investor.

Megginson (1990), Rydqvist (1996), Nicodano (1998) and Chung and Kim (1999) link the value of a corporate vote to a host of sources. One source of value arises when owners of voting shares gain control of the firm and direct the resources of the firm to themselves through perquisites. A second source of value derives from the chance that the vote will become pivotal in a control contest. Competing parties in this contest would be interested in gaining the votes and so bid up the price of the voting shares.

In their study of U.S. dual class share firms, Lease, McConnell and Mikkelson (1983) find that, on average, superior vote shares trade at a 5% higher price than the restricted vote shares. The premiums documented in studies that focus on foreign markets are much higher; for Israel Levy (1983) reports 45.5% and for Italy Zingales (1994) reports 82.5%. Lease, McConnell and Mikkelson posit that the owners of superior vote shares have the possibility of receiving some incremental benefit beyond that to be received by owners of restricted shares at some future point in time and that the voting premium is a reflection of the

discounted value of the incremental benefit. A second study conducted by the same authors in 1984 documents that the price premium of superior vote shares changes over time.

Zingales (1995) also examines the intertemporal value of voting rights to determine what factors affect the magnitude of the price premium for shares with superior voting rights. His inquiry is based on the supposition that the value of the vote will increase when there is a control contest. He hypothesizes that the value of the vote and thereby the price premium for superior vote shares will increase as the likelihood of a control contest increases. His investigation reveals that a proxy for the probability that a vote will be pivotal in a control contest and the level of managerial perquisites are significant in explaining the price premium. Zingales concludes that the value of every share of stock consists of a cash flow component and a vote component, and that under "normal" conditions the vote component is small but can increase and fluctuate dramatically when an event that changes the likelihood of a control contest occurs.

The finding that the price of a share of stock is composed of a cash flow component and a vote component has important implications for "arm's-length" investors, i.e., investors who do not intend to engage in any control contests. These investors are concerned primarily with the financial benefits derived from share ownership and can be either passive investors or active investors. Passive investors are characterized as those who hold the shares long-term and engage in infrequent buying and selling in patterns unrelated to price fluctuations. These investors are indifferent to the existence of the corporate vote associated with share ownership and ordinarily make their decisions without considering any value which may be attributable to the value of

the vote. Active arm's-length investors seek to profit from buying when the price is low and selling when the price is high, but do not involve themselves in governance issues. These investors would not value the vote, per se, but the price premium associated with the vote and its fluctuations are likely to have an impact on their trading decisions.

In this study, we concentrate on the passive investor. These investors are individuals or institutions who either use buy-and-hold strategies or whose buying and selling activities are dictated by the cash flows into and out of their portfolios and not fluctuations in stock prices. These investors typically buy and sell their shares independent of control contests. Although they enjoy the benefits of a price run-up in the event of a control contest, they do not actively seek these opportunities. Therefore, these investors should gravitate toward restricted vote shares when investing in firms with dual class shares to avoid paying the premium associated with the vote. Passive investors can receive the same long-run direct cash flow benefits for a lower price by buying the restricted vote shares. We hypothesize that the restricted vote shares will offer these investors higher average long-run returns than the superior vote shares in dual class firms. If restricted vote shares offer the same financial benefits and can be purchased at a lower price, then the returns from a buy-and-hold strategy should be higher. Since the superior vote shares have the same cash flow component as the restricted vote shares and an additional vote component that fluctuates through time (Lease *et al.*, 1984; Zingales, 1995), we posit that, in the absence of a negative correlation between the vote component and cash flow component, the returns from superior vote shares will have at least as much variability as the returns from their restricted vote counterparts. Therefore, we hypothesize that, for passive investors, restricted vote shares dominate superior vote shares in mean-variance space.

Our empirical findings are consistent with the conjecture that restricted vote shares dominate superior vote shares. We find that long-term mean annual returns for restricted vote shares are approximately 1.2% higher than their superior vote counterparts for a sample of all U.S. firms that had dual classes of stock with different voting rights listed in the Center for Research in Security Prices (CRSP) tapes for any period of time between 1993 and 2005. These results are strongly significant and robust to non-parametric tests, despite a small sample size due to the restriction to firms on CRSP. The standard deviation of the returns and the market betas for the restricted vote shares are not higher than they are for the superior vote shares. This relationship also holds when the four loading factors found to have explanatory power for stock returns by Fama and French (1996) and Carhart (1997) are used as the relevant risk factors. Therefore, in a world where investor objectives are defined in a two-parameter

space, return and risk, our results indicate that restricted vote shares dominate superior vote shares.

2. Investor Classification and Implications

This study examines firms that have two classes of shares to determine which class represents a superior investment choice for passive investors. Investors of this type who decide to include a firm that has dual class shares in their portfolio face the decision of choosing between the superior vote and restricted vote shares. Identifying one class of shares as being superior presents such investors with a preferred investment choice. We highlight the increasing prevalence of dual class share firms available to investors to demonstrate the pertinence of this choice and describe a significant group of investors who display the characteristics of a passive investor. We follow with empirical evidence which indicates that investors of this type should prefer the restricted vote shares over superior vote shares when investing in dual class share firms.

Firms with dual class shares are rare in the United States but appear to be much more widespread in foreign markets. Firms with dual class share structure have, at times, comprised as much as 40% of the firms listed on the Tel Aviv Stock Exchange (Hauser and Lauterbach, 2004), 40% of the Milan Stock Exchange (Zingales, 1994) and 70% of the Stockholm Stock Exchange (Bergstrom and Rydqvist, 1990). Therefore, a finding that one class of shares is preferable to passive investors would be more valuable when constructing a portfolio that includes firms that trade in these markets. In an increasingly global financial community where investors are more inclined to diversify their portfolios to include securities that trade in foreign markets, a deeper understanding of dual class shares is appropriate even for U.S. based investors. In addition, Smart and Zutter (2003) document evidence that the dual class structure is increasing in popularity in the United States. In their study of dual class IPOs, they find that by the late 1990s, dual class structure was chosen in over ten percent of all IPOs. If this trend continues, a finding of a preferred share class for passive investors in dual class firms becomes more relevant even for portfolios constructed solely of U.S. firms.

We characterize a passive investor as one who (1) holds a portfolio of stocks for long-term gains, (2) does not try to "time the market", that is, the investor generally engages in the buying and selling of shares in patterns that are unrelated to short-term stock price fluctuations and (3) does not actively engage himself in the governance issues of the firms in which he invests. We contend that such passive investors represent a significant number of investors and a non-trivial volume of the investment dollars in the market. First are individual investors who participate in various employer-promoted stock ownership plans and other small investors who do not have a large enough stake to impact the operation or governance of

the firms in which they invest. Second, there are many institutional investors who fit the passive investor description as well, such as mutual funds and investment trustees. Although some institutional investors engage in active management of their portfolios, many do not. The proliferation of index funds, exchange traded funds and life cycle funds increases the pool of investors that fits our characterization of a passive investor.

We posit that these passive investors will hold a diversified portfolio and will be primarily concerned about the annual returns from their portfolio and the risk thereof. We contend that they will buy and sell their shares independent of control contests and special events that may cause prices to vary over the short-run. We conjecture that in the event of a tender offer, merger or reclassification of shares, these investors will take the final resolution value, but do not influence the outcome of the resolution.

3. Data and Methodology
3.1. Hypotheses and Methodology

Given that superior vote shares sell at a premium to restricted vote shares and the expected cash flow benefits are comparable, the restricted vote shares should record higher rates of return. Therefore, we hypothesize that the long-run mean annual returns for restricted vote shares is higher than that of their superior vote counterparts and that these returns are not associated with higher risk as measured by either standard deviation or beta. We use data for the entire period that dual class firms had both classes of stock trading to test this hypothesis. The data include the month-end prices and monthly dividend-adjusted returns for both classes of stock for all firms in our sample for each year that both classes were trading.

We use the monthly returns to compute annual returns. We subtract each annual return for the superior vote class from that year's return of its corresponding restricted vote stock to develop a series of annual return differences (R_{Nt}). If the returns on the restricted vote shares are higher as we contend, then the mean of the return differences will be greater than zero. We compute the mean annual return difference as $\mu_N = \sum_{t=1}^{n} \dfrac{R_{Nt}}{n}$ for the sample, where n is the number of firm-years of data and test the following hypothesis:

Ho: $\mu_N = 0$

Ha: $\mu_N > 0$

Our second hypothesis addresses the question of whether any difference in the returns of the two classes of shares can be explained by a difference in the risk experience of the returns on the two classes of stock. We use both the standard deviation of returns and market beta for each class of shares as measures of risk. We use monthly returns over the entire period that both classes of shares traded to calculate both the

standard deviation and beta. To compute the market betas we use both the CRSP value-weighted and CRSP equal-weighted index as a proxy for the market portfolio along with the rate on three-month Treasury Bills for the risk-free rate. We conduct tests for a difference in means between the two classes for both measures of risk:

Hypothesis	Standard Deviation	Beta
Ho:	$\sigma_R = \sigma_S$	$\beta_R = \beta_S$
Ha:	$\sigma_R > \sigma_S$	$\beta_R > \beta_S$

where σ_R and σ_S are the standard deviation for restricted vote shares and superior vote shares respectively, and β_R and β_S are the corresponding market betas derived from the regression:

$$R_{it} - R_{ft} = \beta(R_{mt} - R_{ft}) + e_t$$

where, for each month t, R_{it} is the return for the individual stock, R_{ft} is the risk-free return and R_{mt} is the return for the proxy for the market portfolio.

In view of evidence provided by Fama and French (1996) and Carhart (1997) we conduct further tests for risk differences by estimating a four factor model to describe market returns, using factor data obtained from Kenneth French's website. The first factor is the market factor which is the excess return on the market. The second factor, the size factor, is the difference between the return on a portfolio of small stocks and the return on a portfolio of large stocks. The third factor is the book-to-market factor which is the difference between the return on a portfolio of high book-to-market value stocks and the return on a portfolio of low book-to-market value stocks. The fourth factor is the momentum factor which is the difference between the returns on a portfolio of the best performing stocks and worst performing stocks during the prior 11 months.

We obtain estimates for the market factor loading β_M, size factor loading β_S, book-to-market factor loading β_H, and momentum factor loading β_U for both share classes. The estimates of the loading parameters are derived from the regression:

$$(R_{it} - R_{ft}) = \alpha + \beta_M(R_{mt} - R_{ft}) + \beta_S SML_t + \beta_H HML_t + \beta_U UMD_t + \varepsilon_t$$

where for each month t, R_{it} is the individual stock's return, R_{ft} is the risk-free return, R_{mt} is the return for a proxy for the market portfolio, SML_t is the size factor, HML_t is the book-to-market factor and UMD_t is the momentum factor and ε_t is a random error term. The test for differences between the two classes in each of the factor loadings is then conducted as follows:

Hypothesis	Market Factor	Size Factor	Market-Book Factor	Momentum Factor
Ho:	$\beta_{Mr} = \beta_{Ms}$	$\beta_{Sr} = \beta_{Ss}$	$\beta_{Hr} = \beta_{Hs}$	$\beta_{Ur} = \beta_{Us}$
Ha:	$\beta_{Mr} > \beta_{Ms}$	$\beta_{Sr} > \beta_{Ss}$	$\beta_{Hr} > \beta_{Hs}$	$\beta_{Ur} > \beta_{Us}$

3.2 Sample Selection

Our sample selection covers the period from 1993 through 2005 since that is the period that disclosure statements that allow us to classify firms with dual class shares are readily available on the EDGAR website. We search the CRSP database to identify firms that had multiple classes of shares of stock listed at any time between 1993 and 2005. We search the U.S. Securities and Exchange Commission's EDGAR website for proxy statements and annual reports of these firms to determine the characteristics of the dual class shares. We then collect price and return data including dividends for these firms for the entire period that each firm had both classes traded from the CRSP database.

This process results in a data collection period from July, 1962 when the first two of our sample firms started trading dual class shares to December, 2005, the last month that CRSP data was available at the time we developed the sample. For some firms, one or both of the classes of shares stopped trading prior to December, 2005 due to a merger, acquisition, reclassification or delisting. The resulting dataset is an unbalanced panel of firm returns. The time series for some firms begins before others and for some firms' the time series ends before others, so each firm has a different number of data points in its time series.

We compile this data in a manner that is consistent with the investing behavior of the passive investor characterized earlier. We compare the annual returns of the shares for the two different classes when held long term. We find the difference in annual returns between the two classes of each dual class firm for each year they traded. For firms where the dual class configuration is dissolved, the resolution values of both classes of shares are used to find a final return difference between the classes due to the resolution. For the firms that are delisted, we find, as a final return for each class, the return from the end of the last full month that both shares traded until the final day that both shares traded. This ensures that we include all return differences until the last day that each firm had dual class shares trading.

3.3 Data Collection and Compilation

A review of the information extracted from EDGAR reveals that the dual class structure has several different variations regarding voting rights and cash flow allocation. In some firms, the different classes derive cash flows from different divisions of a conglomerate firm, but have voting rights for the overall organization. In other cases, the classes differ only in their voting rights. For some of these differential voting firms, one class has voting rights and the other class does not, while for others, both classes have voting rights but the rights of one class are superior to the rights of the other class. A third type of arrangement exists where one class has

superior voting rights and the other class has preferential dividends from the firm's cash flows.

Most of the prior studies on dual class shares use samples that are restricted to firms where the two classes of shares differ only in their voting rights. To maintain consistency with these studies, we restrict our sample to these firms as well. Table 1 shows our sample firms and the period during which both classes of shares were traded. The data is separated into two sub-samples based on the nature of the voting rights of the two classes. The "Pure" sub-sample is comprised of firms where one class has voting rights and the other class does not. These firms are listed in Panel A of Table 1. The "Differential Vote" sub-sample is comprised of firms where both classes have voting rights, but one class has rights that are clearly superior to those of the other class. Panel B of Table 1 shows these firms along with a summary of the characteristics of each class of stock.

We also list the firms with dual class shares listed on CRSP that are omitted from the analysis and the reason why they are excluded. Three of the excluded firms are dropped because the different classes of shares represent cash flows from different divisions of the firm. Twelve firms are dropped because the classes have different claims on the future cash flows of the firm in terms of dividends paid. Two firms are excluded because either the different classes had the same voting rights or we are unable to determine which class had superior voting rights. We exclude one firm, Federal Agricultural Mortgage Corp., because one share class had its ownership restricted to member institutions of Farmer Mac. The firms that are excluded from the analysis are listed in Panel C of Table 1, along with the reason for their exclusion.

There are 29 firms in the Pure sub-sample and 37 firms in the Differential Vote sub-sample, resulting in a total sample size of 66 firms with both superior and restricted vote share classes. One firm, Comcast, appears in both the Pure and Differential Vote sub-samples, with different trading periods. This occurs because the voting characteristic of the dual class shares changed from Pure to Differential Vote during the data collection period.

We identify the entire period that both the superior and restricted vote shares were traded for each of the 66 firms. We collect month-end prices and monthly return data including dividends from the CRSP database for both classes of shares for each firm in the sample for the period that both classes traded. In addition, we collect the return for the CRSP value-weighted and CRSP equal-weighted indexes for each month and the rate on three-month T-Bills, as well as the Fama-French factor data for the four factor model estimation.

Trading for at least one of the share classes stopped prior to the end of our data collection period (December, 2005) in 31 of our 66 sample firms. These firms are listed in Table 2, along with the reason they stopped trading. Six firms stopped trading because one or both of the classes were

delisted from the exchange on which they traded. Seventeen firms underwent a merger or acquisition. Seven firms had a reclassification of their share classes into a single class of shares and one firm went private. For firms where there was a delisting, the final trading prices of both shares are reported in the table. For the other firms, the terms of the resolution are described. We use the month-end price data to compare our sample to those used in previous studies. Following the methodology in Lease *et al.*, (1983), we compute the ratio of the price of the superior vote share to the price of its corresponding restricted vote share for each firm-month of data and test whether the mean of the logarithm of this ratio is different from zero. We compute annual returns from the monthly returns. This process results in 876 paired firm-years of data for the entire sample. We subtract the annual return of the superior vote class from the annual return of the restricted vote class for each firm-year and test whether the mean of this variable is equal to zero against the alternative that the mean is greater than zero. We use the monthly returns data to compute standard deviation of returns and betas for each class of shares. Two sets of betas are computed for each class, one using the value-weighted index and one using the equal-weighted index as a proxy for the market portfolio. We test for equality of risk between the restricted and superior vote class shares using standard deviation and the betas. We perform further tests for risk differences by estimating the factor loadings in the four-factor model and testing for equality between the two share classes for each factor.

4. Results
4.1 Price Ratios

Table 3 shows the price ratios and the results of the tests that the prices of the two classes of stock are equal. The mean of the ratio of superior vote share price to restricted vote share price is shown, including statistics for tests of the logarithm of this ratio's difference from zero. Similar to Lease *et al.*, (1983), we report a mean price ratio of 1.075 and p-value of 0.000 for the t-test that the logarithm of the price ratio is equal to zero. The p-values for nonparametric tests that the price ratio is equal to one reinforce the result of the t-test that superior vote shares are priced at a premium to the restricted vote shares. For this sample of dual class shares, the price of superior vote class shares is on average 7.5% higher than the price of restricted vote shares. This price premium is consistent with the average premium found by Lease *et al.*, for a similar sample of firms but lower than the 13% premium documented by Megginson (1990) for British firms and the 12% premium found by Rydqvist (1996) for Swedish firms.

4.2 Annual Return Differences

First we explore the cross-sectional return differences using the methodology of Foerster and Porter (1993),

who examined a sample of dual class share firms that trade on the Toronto Stock Exchange. The result of the test for our sample of 66 firms is largely consistent with that of Foerster and Porter. Forty-four of the 66 firms record positive mean return difference, however, only four of these mean differences are significant[28].

Next we test for a difference in annual returns between the share classes. As reported in Table 4 Panel A, the mean annual return difference between the two classes is 1.2%. The difference is significant at the 5% level, which indicates that the restricted vote shares in our sample outperform their superior vote counterparts. Further examination using both the sign and sign rank tests reinforces the finding that the returns on the restricted vote shares are significantly greater than the returns on the superior vote shares. These results indicate that, as a portfolio, restricted vote shares outperform their superior vote counterparts.

Some firms in the sample have more annual returns data than others. One implication of this feature of our sample is that a few firms that had a longer period of their dual class shares trading may unduly influence the return relationship reported in Table 4, Panel A. The firms with longer time series of data have a disproportionate weight in the computed mean return differences. Consequently, it is possible that there is some difference in the characteristics of the dual class shares of the firms that have a long time series of data relative to those with a short time series that drives the results. To alleviate this potential shortcoming, we find the average annual return difference for each firm in the sample and test whether the mean across firms is greater than zero. This approach gives equal weight to each firm, eliminating any bias that could have arisen from a few firms with a long time series of data. We report these results in Table 4 Panel B. The mean return difference for our sample is 1.8%. Using this approach, we again find that the returns on the restricted vote shares are higher than returns on the superior vote shares with significance using both the parametric and nonparametric tests. These results indicate that the higher returns associated with restricted vote shares are a characteristic of the full sample of dual class shares and not due to the effects of a few firms in the sample with a long trading history.

4.3 Risk Differences

Having established that the restricted vote shares yield higher returns, we turn to the risk characteristics of the two classes for possible explanation of the observed return difference. If the risks are equivalent, we can conclude that the restricted vote shares dominate the superior vote shares, since restricted

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[28] The results of this test are not reported in this paper but are available

vote shares would offer a higher rate of return for the same level of risk. In a study of 66 firms with dual class shares listed on the Toronto Stock Exchange, Amoako-Adu *et al.*, (1990) find no difference in either systematic or total risk between superior vote and restricted vote shares. We conduct similar tests for our sample of firms. We compute the standard deviation of returns for each class of shares for each firm for the period during which both classes were traded. We also compute two sets of betas for each class of shares for the same period by regressing the monthly returns on the three month T-Bills yield with the CRSP equal-weighted index and with the CRSP value-weighted index. We test for a difference in means for each measure of risk between the restricted vote shares and superior vote shares. Results are summarized in Table 5 Panel A. The risk of the two classes of shares is equivalent as measured by both standard deviation and beta. These results indicate that there is no difference in either stand-alone or market risk between the two classes of shares.

Panel B of Table 5 presents the results of the four factor model specification for stock returns. The results are similar to those for the two factor model, with no difference between share classes in the estimated loading on any of the four factors. These results show that there is no difference in risk characteristics between classes in dual class firms even when using the more comprehensive four factor model to explain returns. Therefore, the higher returns on the restricted vote shares do not represent compensation for additional risk borne by investors who hold these shares.

4.4 Liquidity Differences

Having found no difference in the risks of the two classes of shares that could explain the higher returns generated by restricted vote shares, we turn our attention to liquidity in the market for a possible explanation. If the market for restricted vote shares is less liquid, then the long-run returns for this class of shares would reflect a liquidity premium. Amihud and Mendelson (1986) find a positive relation between asset returns and illiquidity measured by bid-ask spread. If the restricted vote shares in our sample have lower liquidity, then the higher mean returns for this class may simply represent compensation to investors for this lack of liquidity. We collect trading data for the two classes to assess whether a difference in liquidity might explain the observed difference in average returns. We use several different proxies for liquidity. We differentiate between the exchanges on which the two classes of shares traded and collect the monthly volume of shares traded, the total number of shares outstanding and the monthly dollar volume of shares traded. We use three different measures of liquidity to assess whether the restricted vote shares have lower liquidity than their superior vote counterparts. The first measure is the monthly volume of shares traded. Next is the relative volume

of shares traded, which is the monthly volume traded divided by the number of shares outstanding. The third measure of liquidity, the dollar volume of shares traded, derives from Dittman (2003), who argues that the dollar volume of shares traded is a better measure of liquidity than both volume and relative volume of shares traded. There is very little difference between the restricted vote shares and the superior vote shares with respect to the exchange on which each class of shares traded. For Alberto Culver and KV Pharmaceutical, the two classes traded on different exchanges for two months and Plymouth Rubber's did for one month. Watsco and A.O. Smith are the only two firms where the different classes of shares traded on different exchanges for an extended period. In both of these cases, however, the restricted vote shares traded on the NYSE and the superior vote shares traded on NASDAQ. Since we consider the NYSE to provide at least as much trading liquidity as the NASDAQ, we conclude that the exchanges on which the different classes of shares trade do not impose differential liquidity on the restricted vote shares compared to the superior vote shares.

The test results for the different measures of liquidity are reported in Table 6. For all three of the variables, volume of shares traded, relative volume of shares traded and dollar volume of shares traded, restricted vote shares have a significantly higher level of liquidity. These results are similar to Megginson (1990) and Foerster and Porter (1993) but are in contrast to Lease *et al.*, (1984) and Chung and Kim (1999) who find no difference in the liquidity between the voting and nonvoting shares. If there is a premium associated with liquidity in the market for dual class shares, then the premium would accrue to the holders of superior vote shares, since they are clearly less liquid using these three measures of liquidity. Since it is the superior vote shares in our sample that appear to be less liquid, accounting for a liquidity premium would only strengthen our findings that restricted vote shares provide higher returns than superior vote shares.

5. Conclusion

Our analysis of the risk and return performance of firms with dual class shares reveals that shares with restricted voting rights yield higher returns than their superior vote counterparts without subjecting investors who hold these stocks to higher risks. In addition, these higher returns do not represent a liquidity premium, since it is the superior vote shares that appear to be less liquid. Restricted vote shares therefore dominate their superior voting rights counterparts in mean-variance space. Consequently, passive investors who are interested in owning equity in firms with dual class shares can achieve a higher average annual return without incurring additional risk by holding a portfolio of the restricted vote shares instead of a comparable portfolio of the superior vote shares. The implication of this result is clear. Long-

term, buy-and-hold investors who do not attempt to time the market or get involved in control contests should prefer restricted vote shares to superior vote shares when investing in firms that have a dual class share structure.

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Appendices

Table 1. Sample Summary

A summary of U.S. firms that had dual class shares of stock at some time between 1994 and 2005. Included are the firms, the period in which both classes were traded and characteristics of the share classes. The four panels classify the firms for our study into Pure, Voting Difference, Financial Difference sub-samples and firms eliminated from consideration for our study.

Panel A*: Pure sample*

Firms in this sample have no financial difference and superior vote shares have one vote on all matters and restricted vote shares have no vote. The table shows the name of the firm and the period for which both classes of shares traded.

Firm	Trading period
Advanta	05/29/92-12/30/05
Baldwin & Lyons	05/30/86-12/30/05
Bandag	06/30/92-12/30/05
Benihana	07/31/87-12/30/05
BHA Group	11/30/88-03/31/93
Box Energy	04/30/92-11/30/98
Brown Forman	07/31/62-12/30/05
Cannon Express	01/29/93-02/29/96
Comcast	12/31/86-10/31/02
Commerce Clearing	04/30/91-12/29/95
Cosmetic Center	03/31/92-03/31/97
Crawford	08/31/90-12/30/05
Fabri Centers	08/31/95-10/31/03
First Commerce	10/29/93-05/31/00
Food Lion	09/30/83-08/31/99
Greenwich Air	05/31/96-08/29/97
Hach	10/31/97-06/30/99

McCormick & Co.	09/28/01-12/30/05
Molex	07/31/90-12/30/05
Pacificare	06/30/92-05/28/99
Penn Engineering	05/31/96-04/29/05
Petroleum Helicopters	09/30/81-12/30/05
Plymouth Rubber	08/31/66-12/31/04
Reader's Digest	03/31/92-11/29/02
Reading International	01/31/00-12/30/05
Tecumseh	06/30/92-12/30/05
Thomaston Mills	06/30/88-11/30/00
Viacom	06/29/90-12/30/05
Wackenhut	01/29/93-04/30/02

Number of firms: 29

Panel B: Differential Vote Sample
Firms in this sample have no financial difference, both classes of shares have voting rights, but one class clearly has superior voting rights to the other. The table shows the name of the firm, the voting rights of the two classes and the period for which both classes of shares traded. SVS stands for superior vote shares and RVS for restricted vote shares.

Firm	Voting rights summary	Trading period
ACMAT	SVS get 1 vote; RVS get 1/10 vote	08/31/87-08/31/95
Alberto Culver	SVS get 1 vote; RVS get 1/10 vote	04/30/86-10/31/03
Associated Group	SVS get 1 vote; RVS get 1/25 vote	12/30/94-12/31/99
Base Ten	SVS elect 75% directors, get 1 vote otherwise; RVS elect 25%, get 1/10 vote otherwise	12/31/80-04/30/98
Bio Rad Labs	SVS get 1 vote; RVS get 1/10 vote	02/29/80-12/30/05
Blockbuster	SVS get 2 votes; RVS get 1 vote	10/29/04-12/30/05
Chambers	SVS votes on 75% directors get 10 vote; RVS votes on 100% directors, get 1 vote	04/30/86-06/30/95
Comcast	SVS get 15 votes; RVS get .2077 vote	11/29/02-12/30/05
Crown Central	SVS elect 10 directors, get 1 vote otherwise; RVS elect 2 directors, get 1/10 vote otherwise	01/31/80-02/28/01
Curtiss Wright	SVS elect 80% directors; RVS elect 20%	11/30/01-04/29/05
Dairy Mart	SVS elect 75% directors, get 1 vote otherwise; RVS elect 25% directors, get 1/10 vote otherwise	11/29/85-01/31/00
Discovery Holding	SVS get 10 votes; RVS get 1 vote	07/29/05-12/30/05
EXX	SVS elect 2/3 directors; RVS elect 1/3	11/30/94-12/30/05
Eagle Materials	SVS elect 85% directors; RVS elect 15%	02/27/04-12/30/05
Forest City	SVS elect 2/3 directors; RVS elect 1/3	11/30/83-12/30/05
Freescale Semiconductor	SVS get 5 votes; RVS get 1 vote	12/31/04-12/30/05
Gamestop	SVS get 10 votes; RVS get 1 vote	11/30/04-12/30/05
Gartner	SVS elect 80% directors; RVS elect 20%	07/30/99-06/30/05
Gray Television	SVS get 10 votes; RVS get 1 vote	09/30/96-12/30/05
Heico	SVS get 1 vote; RVS get 1/10 vote	04/30/98-12/30/05
Hubbell	SVS get 20 votes; RVS get 1 vote	07/31/62-12/30/05
IDT	SVS get 1 vote; RVS get 1/10 vote	06/29/01-12/30/05
Lennar	SVS get 10 votes; RVS get 1 vote	04/30/03-12/30/05
McData	SVS get 1 vote; RVS get 1/10 vote	02/28/01-12/30/05
Methode	SVS elects 2/3 directors, get 1 vote otherwise; RVS elect 1/3 directors, get 1/10 vote otherwise	09/30/82-12/31/03
Nelson Thomas	SVS get 10 votes; RVS get 1 vote	11/28/86-12/30/05
Oriole Homes	SVS elect 75% directors, get 1 vote otherwise; RVS elect 25% directors, get 1/10 vote otherwise	04/29/83-01/31/03
Pilgrim's Pride	SVS get 20 votes; RVS get 1 vote	08/31/99-10/31/03
Pittway	SVS elect 75% directors, get 1 vote otherwise; RVS elect 25% directors, get 1/10 vote otherwise	01/31/90-01/31/00
Presidential Realty	SVS elect 2/3 directors; RVS elect 1/3	07/31/62-12/30/05
Seneca Foods	SVS get 1 votes; RVS get 1/20 vote	09/29/85-12/30/05
Sequa Corp.	SVS get 10 votes; RVS get 1 vote	01/30/87-12/30/05
Smith A O	SVS elect 2/3 directors, get 1 vote otherwise; RVS elect 1/3 directors, get 1/10 vote otherwise	09/30/83-07/31/02
Tele Communications	SVS get 10 votes; RVS get 1 vote	08/31/79-02/26/99
Triarc	SVS get 1 vote; RVS get 1/10 vote	09/30/03-12/30/05
United Foods	SVS elect 2/3 directors, get 1 vote otherwise; RVS elect 1/3 directors, get 1/10 vote otherwise	12/30/83-08/31/99
Watsco	SVS elect 75% directors, get 10 votes otherwise; RVS elect 25% directors, get 1 vote otherwise	06/29/84-12/30/05

Number of Firms: 37

Panel C: Eliminated Firms

These firms have dual class shares but are not included in our sample. The table shows the name of the firm and the reason it is excluded from the analysis.

Firm	Reason for elimination
Applera Corp	Different classes represent different divisions of firm
Federal Agricultural Mortgage Corp	Restriction on ownership of one class to member institutions
Loew's Corp	Different classes represent different divisions of firm
Molson Coors Brewing	Different classes represent different divisions of firm
Radio One, Inc	Indeterminate superior voting rights
Star Gas Partners	No vote differential
Telephone & Data Systems	Different classes represent different divisions of firm
Berkshire Hathaway	Different classes have different claims on dividends
Constellation Brands	Different classes have different claims on dividends
Greif	Different classes have different claims on dividends
Haverty Furniture	Different classes have different claims on dividends
Hechinger	Different classes have different claims on dividends
KV Pharmaceutical	Different classes have different claims on dividends
News Corp.	Different classes have different claims on dividends
Presidio	Different classes have different claims on dividends
Saucony	Different classes have different claims on dividends
Three D	Different classes have different claims on dividends
Tranzonic	Different classes have different claims on dividends
Urstadt Biddle	Different classes have different claims on dividends

Number of Firms: 19

Table 2. Dual Class Resolutions

This table shows the firms that had resolutions of their dual class structure within the sample time period, along with the date of the resolution as well as the reason for and terms of the resolution. Share delistings are included in the table along with the last price traded in the column for terms of the resolution. SVS stands for superior vote shares and RVS for restricted vote shares.

Firm	Date of Resolution	Reason for Resolution	Terms of Resolution
BHA Group	04/21/1993	RVS delisted	RVS sold at $19.125; SVS sold at $18.5
Box Energy	12/24/1998	Merger	RVS traded for new shares at 1-for-1; SVS traded at 1.15-for-1
Cannon Express	03/27/1996	Reclassification	RVS converted to SVS at .986-for-1;
Comcast	11/18/2002	Merger	Both RVS & SVS traded for new shares at 1-for-1
Commerce Clearing	01/11/1996	Acquired	Both RVS & SVS bought at $55.00
Cosmetic Center	04/24/1997	Merger	Both RVS & SVS converted to new shares at 1-for-1
Fabri Centers	11/04/2003	Reclassification	RVS trade for new shares at 1-for-1; SVS traded at 1.15-for-1
First Commerce	06/16/2000	Acquired	Both RVS & SVS traded for $35.95 of acquirer's stock
Food Lion	09/08/1999	RVS & SVS Delisted	RVS sold at $24.87; SVS sold at $25.87
Greenwich Air	08/29/1997	Acquired	Both RVS & SVS bought at $31.00
Hach	07/14/1999	Merger	Both RVS & SVS traded for $18.50 worth of new shares
Pacificare	06/24/1999	Reclassification	RVS converted to SVS at 1-for-1
Plymouth Rubber	01/06/2005	RVS & SVS delisted	RVS sold at $0.53; SVS sold at $0.875
Reader's Digest	12/13/2002	Merger	RVS converted to SVS at .8917-for-1
Thomaston Mills	12/01/2000	RVS & SVS delisted	RVS sold at $0.4375; SVS sold at $0.50
Wackenhut	05/08/2002	Merger	Both RVS & SVS receive $33 per share
ACMAT	09/01/1995	Went Private	RVS sold at $12; SVS sold at $16
Alberto Culver	11/05/2003	Reclassification	RVS converted to SVS at 1-for-1
Base Ten	05/01/1998	SVS delisted	RVS sold at $5.0625; SVS sold at $8.00
Associated Group	01/14/2000	Acquired	Both RVS & SVS traded for Liberty Media shares at 1.2-for-1 and AT&T shares at .5-for-1
Chambers	06/30/1995	Merger	Both RVS & SVS traded for new shares at 1-for-2.4
Crown Central	03/07/2001	Merger	Both RVS & SVS receive $10.50 per share
Dairy Mart	02/08/2000	Reclassification	RVS trade for new shares at 1-for-1; SVS trade at 1.1-for-1
Methode Electronics	01/08/2004	Merger	RVS traded for new shares at 1-for-1; SVS got $23.55 per share
Oriole Homes	02/10/2003	Merger	Both RVS & SVS got $4.90 per share

Pilgrim's Pride	11/21/2003	Reclassification	Both RVS & SVS traded for new shares at 1-for-1
Pittway	02/03/2000	Merger	Both RVS & SVS got $45.50 per share
A.O. Smith	08/05/2002	SVS delisted	RVS sold at $27.54; SVS sold at $27.75
Tele Communications	03/09/1999	Merger	RVS traded for new shares at 1-for-.7757; SVS traded at 1-for-.8533
United Foods	09/22/1999	Merger	Both RVS & SVS got $3.50 per share
Gartner Inc	07/06/2005	Reclassification	Both RVS & SVS traded for new shares at 1-for-1

Number of firms: 31

Table 3. Price Ratios

This table shows the mean of the month-end price ratios of superior vote shares to restricted vote shares.   P-values are in parentheses for t-test that the log of the price ratio is different than zero. P-values for nonparametric tests of difference from one are shown below. SVS stands for superior vote shares and RVS for restricted vote shares.

Variable	Price ratio	Number of observations
$Price_{SVS}/Price_{RVS}$	1.075*** (0.000)	876
p-value of sign test	0.000***	
p-value of signed-rank test	0.000***	

Note *, **, and *** denote significance at the .10, .05 and .01 levels respectively.

Table 4. Return Difference

This table shows the return differences between the two classes of shares of stock.

Panel A: Annual Returns

This table shows the mean difference in annual return between restricted vote shares and superior vote shares. P-values are in parentheses for test that the mean difference is greater than zero. SVS stands for superior vote shares and RVS for restricted vote shares.

Variable	Mean difference in annual return	Number of observations
$Return_{RVS}$ - $Return_{SVS}$	0.012** (0.022)	876
p-value of sign test	0.037**	
p-value of signed-rank test	0.055*	

Panel B. Average Annual Return

This table shows the mean difference in the average annual return between restricted vote shares and superior vote shares. P-values are in parentheses for test that the mean difference is greater than zero.

Variable	Mean difference in average return	Number of observations
$\overline{R}_{RVS} - \overline{R}_{SVS}$	0.018*** (0.010)	66
p-value of sign test	0.005***	
p-value of signed-rank test	0.001***	

Note *, **, and *** denote significance at the .10, .05 and .01 levels respectively.

Table 5. Risk Measures

This table shows measures of risk for the two classes of stock. The two panels show results for the market model and the four factor model.

Panel A: Market Model

This panel shows standard deviation and market beta using the returns from the CRSP equal-weighted index and the CRSP value-weighted index as proxies for market returns. The second and third columns show the values for the restricted and superior vote classes and the fourth column shows the difference between the two classes. P-value are in parentheses to test for difference of means for the two classes.

Risk Measure	Restricted vote class	Superior vote class	Difference
Standard Deviation	0.120	0.116	0.004 (0.298)
Equal-weighted CRSP beta	0.786	0.762	0.025 (0.362)
Value-weighted CRSP beta	0.895	0.877	0.018 (0.423)

Panel B: Four Factor Model

This panel shows factor loadings for the four factor model describing returns, using factor data from Kenneth French's website. The second and third columns show the values for the restricted and superior vote classes and the fourth column shows the difference between the two classes. P-values are in parentheses to test for difference of means for the two classes.

Risk Measure	Restricted vote class	Superior vote class	Difference
Market factor loading	0.479	0.430	0.049 (0.468)
Size factor loading	1.733	1.688	0.045 (0.488)
Book-to-market factor loading	0.405	0.288	0.117 (0.331)
Momentum factor loading	-0.155	-0.065	-0.090 (0.411)

Note *, **, and *** denote significance at the .10, .05 and .01 levels respectively.

Table 6. Liquidity Measures

This table shows trading data for the two classes of stock. It shows average monthly share volume, relative volume (number of shares traded divided by total number of shares outstanding) and dollar volume for the restricted and superior vote classes of shares. It also shows the difference in means for these variables between the two classes. The p-values in parentheses are for the test of difference of means in the two sub-samples. Volume of shares is in millions and dollar volume is in hundreds of millions of dollars.

Liquidity Measure	Restricted Vote Class	Superior Vote Class	Difference
Volume of Shares Traded	4.605	1.467	3.138*** (0.001)
Dollar Volume of Shares Traded	$146.6	$39.8	1.068*** (0.001)
Relative Volume of Shares Traded	0.616	0.322	0.294*** (0.001)

Note *, **, and *** denote significance at the .10, .05 and .01 levels respectively.