Control as a motivation for underpricing: a comparison of dual and single-class IPOs ☆

Scott B. Smart[a], Chad J. Zutter[b],*

[a] Kelley School of Business, Indiana University, Bloomington, IN 47405, USA
[b] Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, PA 15260, USA

Abstract

We find that dual-class firms experience less underpricing than single-class firms and explore several hypotheses which explain this phenomenon. Compared to single-class firms, dual-class companies have slightly higher post-IPO institutional ownership and experience fewer control events. Although dual-class firms achieve a lower underpricing cost, they trade at lower prices relative to earnings and sales than single-class IPOs. This pricing differential, combined with evidence that dual-class managers earn higher compensation and that dual-class shares are common among media and entertainment industry IPOs, suggests that dual-class ownership structures protect private control benefits.
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1. Introduction

Research spanning the last quarter-century establishes an impressive number of theoretical and empirical insights into the going-public decision. No dimension of this problem receives more scholarly attention than underpricing. We contribute to this literature by demonstrating a link between underpricing and corporate control. We identify that linkage by comparing dual and single-class initial public offerings (IPOs). In the typical dual-class IPO, insiders issue ordinary common shares to the public while retaining ownership of a class of shares with superior voting rights. Insiders thereby insulate themselves from outside control, including that by investors accumulating large blocks of the firm's publicly traded shares. The asymmetry between cash flow and voting rights created by dual-class ownership invites researchers to explore several issues, not the least of which is the effect of dual-class ownership structures on IPO underpricing.

Comparing underpricing across dual and single-class US IPOs from 1990 to 1998, we find that initial returns on single-class IPOs exceed those of dual-class offers by about three percentage points, a statistically and economically significant figure. We also offer evidence that dual-class firms, which underprice less, have higher institutional ownership. Consistent with the interpretation that dual-class firms insulate managers, we find that single-class firms become acquisition targets within five years of the IPO more frequently than dual-class firms do.

We conjecture that control issues lead to differences in underpricing for dual and single-class IPOs. One hypothesis consistent with our findings is Brennan and Franks' (1997) "reduced monitoring hypothesis." It postulates that greater underpricing generates excess demand for IPO shares, which in turn allows an issuer to increase outside ownership dispersion. This motive is absent or substantially reduced for dual-class issuers because their capital-structure design concentrates voting power among management. With voting control secured, dual-class managers lack the incentive to underprice to prevent subscription-market block formation.

Our findings are of interest because they provide evidence linking corporate governance to underpricing, and because of the rising importance of dual-class firms in the economy. Though most US firms adhere to the one-share, one-vote rule, dual-class firms represent a significant niche. The 1990s saw a rise in both the number of duals and the fraction of IPO proceeds they generated. By the late 1990s, about one in nine IPO firms adopt dual-class ownership and they account for nearly 25% of aggregate IPO proceeds. Our work benefits from this trend. We can analyze a group of as many as 253 dual-class firms, which is more than twice the sample size of any previous study of dual-class IPOs or recapitalizations.

The finding that dual-class firms experience less underpricing at the time of their IPO raises an interesting question. Why don't more firms choose a dual-class structure? We find two possible costs of going public with dual-class shares. First, despite their being at least as profitable as single-class firms, dual-class firms trade at lower valuations relative to fundamentals. Even after controlling for differences in size and growth prospects, dual-class firms trade at higher earnings-to-price and

earnings-to-sales ratios than singles. Second, dual-class firms are larger and use higher quality underwriters than singles, perhaps because they face a higher burden of proof when first accessing equity markets.

The remainder of this paper is organized as follows. Section 2 discusses previous research while Section 3 provides our sample data description. Section 4 reports underpricing results from regression models. Section 5 examines ownership dispersion and acquisition. Section 6 discusses costs of issuing dual-class shares and Section 7 concludes.

2. Previous research

Early explanations of IPOs' initial returns emphasize asymmetric information's role among key agents in the going-public process: corporate insiders, investors, and investment banks.[1] As for recent efforts to model the IPO process, several papers focus on elements of the issuing firm's ownership structure. Booth and Chua (1996) examine the connection between going public and ownership structure. In their model, firms ration underpriced shares to create a dispersed ownership structure, leading to a more liquid market for the firm's shares. Greater liquidity lowers the firm's cost of capital. To attract a larger shareholder base, firms must underprice more to compensate investors for the information production and acquisition costs that they bear.

Brennan and Franks (1997) also suggest that firms underprice shares to generate excess demand and ownership dispersion, but with a different end in mind. Insiders value independence, so they underprice new issues to generate excess demand, permitting discriminatory rationing against large bidders (who would have the incentive to monitor the firm). Brennan and Franks find support for the reduced monitoring hypothesis by identifying a negative correlation between first-day returns and subsequent blockholder ownership in a sample of United Kingdom IPOs. Other papers which model issues surrounding the ownership structures of going-public firms include Zingales (1995b), Mello and Parsons (1998), and Stoughton and Zechner (1998). Brennan and Franks develop their hypothesis in reference to ordinary issues of common stock (i.e., one share, one vote) but note that firms could issue nonvoting shares to circumvent monitoring and thereby reduce the control motivation for underpricing.

Field and Sheehan (2000) examine the relationship between underpricing, ownership structure, and post-IPO liquidity using a sample of 952 US IPOs from 1988 to 1992. As predicted by Brennan and Franks, they find a negative correlation

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[1] See Baron (1982), Beatty and Ritter (1986), Booth and Smith (1986), Rock (1986), Titman and Trueman (1986), Allen and Faulhaber (1989), Benveniste and Spindt (1989), Grinblatt and Hwang (1989), Carter and Manaster (1990), Welch (1992), and Chemmanur (1993). The empirical evidence appears to favor winner's curse explanations for underpricing over signaling stories in which issuers obtain more favorable returns in a subsequent seasoned offering. See Michaely and Shaw (1995), Jegadeesh et al. (1993), Koh and Walter (1989), and Garfinkel (1993). However, Slovin et al. (1994) report a positive correlation between underpricing and returns around seasoned offerings, as predicted in Welch (1989).

between underpricing and several measures of post-IPO ownership concentration, though they argue that the magnitude of this effect is small relative to the underpricing cost. Field and Sheehan also report that a large fraction of going-public firms have blockholders in place prior to the IPO, so if managers use underpricing to prevent blocks from forming, they have already lost the battle. With respect to the link between ownership structure and post-IPO liquidity, Field and Sheehan find that the sign of this relationship depends on the type of outside shareholder and not on the size of the blockholding per se. In any event, the correlation between ownership structure and liquidity is economically insignificant. In this paper, we use a sample more than twice as large as that used by Field and Sheehan, and we examine the differences in underpricing and ownership between single and dual-class IPOs. Field and Sheehan exclude dual-class firms from their analysis.

Many studies explore the value of voting rights, especially when a single investor holds a large voting block (see, e.g., Barclay and Holderness, 1989, 1991; Zingales, 1994, 1995a). Naturally, the existence of two stock classes with unequal voting rights makes dual-class firms good hunting ground for research into the value of control. Most empirical studies on the effects of dual-class shares on shareholder wealth examine dual-class recapitalizations. Partch (1987) finds no significant abnormal stock-price response to recapitalizations. Jarrell and Poulsen (1988) report negative returns around recap announcements, but Millon-Cornett and Vetsuypens (1989) find just the opposite. Shum et al. (1995) argue that recaps harm shareholders only when investors receive inadequate compensation for lost voting rights.

The empirical literature's ambiguity should not surprise us, given that theoretical work demonstrates that dual-class structures can either benefit or harm shareholders under different conditions. For example, Ruback (1988) shows that shareholders acting individually can be coerced to approve dual-class recaps that they would reject if they could act collectively. Grossman and Hart (1988) argue that the one-share, one-vote rule will be optimal in most cases, but Harris and Raviv (1988) demonstrate that separating cash flow and voting rights can maximize firm value at the expense of social optimality. Bebchuk and Zingales (2000) also demonstrate that private and social optimality can diverge when firms switch from private to public ownership. DeAngelo and DeAngelo (1985), Fischel (1987), and Denis and Denis (1994) conjecture that dual-class firms encourage optimal investment in firm-specific managerial human capital. Attari and Banerjee (2002) point out that dual-class structures mitigate the underinvestment problem that arises when managers must raise capital (and thereby dilute their ownership positions) to fund new projects.

Dual-class IPOs provide a superior setting in which to explore all such possible outcomes because outside shareholders buy on terms reflecting inferior voting rights (see, e.g., Jensen and Meckling, 1976). We know of only two published studies examining dual-class IPOs. Boehmer et al. (1996) find normal to above-normal market and operating performance of dual-class IPOs relative to a matched sample of single-class IPOs. They interpret this as evidence that dual-class structures confer

benefits to shareholders for firms issuing dual-class shares. Similarly, Taylor and Whittred (1998) find that Australian ''second board'' firms adopting dual-class structures have higher growth options that require founders' human capital to exploit. But both papers use relatively small samples and obtain results of mixed statistical significance. In the next section, we discuss our data sources and offer descriptive statistics for our sample.

3. Sample data and description

Our primary data source is the *Disclosure New Issues* database from Disclosure, Inc. The data set includes new issues from January 1990 to September 1998 and provides a wealth of information about debt and equity offerings on an issue-by-issue basis for any original or subsequent registration or prospectus filed with the Securities and Exchange Commission (SEC). Because our data ends in September 1998, our sample does not include many of the more spectacular first-day returns associated with Internet stocks. Compared to another well-known IPO data provider, Securities Data Corp., Disclosure under-samples small IPOs, though it does not exclude them. Types of firms excluded from our data set include closed-end funds, unit offers, investment companies, real-estate investment trusts, and limited partnerships. We collect first-day pricing data from the Center for Research on Securities Prices (CRSP).

We extract issues from Disclosure by selecting records for firm-commitment IPOs of common stock from 1990 to 1998. The search yields 3,628 issues. We eliminate duplicate records, reducing our sample to 2,787 issues. We further eliminate 165 issues because other data sets in our study lack matching security data. Our final sample covers 2,622 IPOs (including 253 dual-class issues) with offer prices ranging from $5 to $35.

To examine differences in post-IPO ownership structures between single and dual-class IPOs, we collect 13f institutional ownership data from CDA Prism for Research. For each sample firm, we obtain the number of 13f institutional shareholders (i.e., institutions with more than $100 million under management) and the fraction of the firm they hold at the end of the IPO quarter. To determine whether dual-class structures insulate managers from the market for corporate control, we use Standard & Poor's COMPUSTAT and CRSP to identify firms acquired after their IPO. We use the COMPUSTAT Industrial Active and Inactive Companies files to identify which of the Disclosure firms were inactive as of July 1999 and the dates and reasons firms became inactive. Firms become inactive through acquisition or merger, chapter 11 bankruptcy, chapter 7 liquidation, conversion to private status, or other reasons (e.g., no longer filing with the SEC). We were able to classify 2,496 firms, or 95% of our full sample, as either active or inactive. About 25% of our sample firms became inactive during 1990 to 1999. The vast majority (93%) of these were acquisition targets.

Table 1 reports descriptive statistics. We divide the sample into two periods of equal length to highlight the increasing tendency of firms to go public with dual-class

Table 1

Select values for IPOs from January 1990 to September 1998 by subperiod

This table presents select mean values for the full sample by subperiod. The full sample includes 2,622 firm-commitment initial public offerings dating from January 1990 to September 1998. The first subperiod includes initial public offerings dating from January 1990 to May 1994. The second subperiod includes initial public offerings dating from June 1994 to September 1998. Initial return equals the change in price from the final offer price to the first-day secondary-market closing price. Offer value is the total number of shares offered times the inflation-adjusted final offer price. Market capitalization is the total number of shares outstanding upon completion of the offering times the inflation-adjusted first-day secondary-market closing price. Dollar values are inflation adjusted to constant 1998 dollars using the Consumer Price Index. Percentage of dual-class deals, dual-class offer value, and dual-class market capitalization represent the proportion of each within the respective subsample. Dual-class refers to firms that have more than one class of common equity outstanding at the time of the offering. There are 253 dual-class issues.

	Period 1	Period 2	Full sample
Number of deals	1,221	1,401	2,622
Mean initial return	10.6%	16.1%	13.5%
Mean offer value in millions	$65.959	$72.760	$69.593
Mean market capitalization in millions	$241.778	$351.440	$300.373
Dual-class deals	7.0%	11.9%	9.6%
Dual-class offer value	9.5%	24.9%	18.1%
Dual-class market capitalization	11.1%	31.3%	23.8%

shares. Table 1 indicates that the IPO market was more active in the latter half of the 1990s than in the earlier. In the latter period, the number of deals is about 15% higher, the average first-day returns are about 50% larger (10.6% vs. 16.1%), and the average offer value is 10% higher (in 1998 constant purchasing power dollars). Dual-class firms represent 7% of all IPOs in the early 1990s and 12% in the latter part of the decade. The relative importance of dual-class offers increases even faster when we measure by money raised (offer value) or by market capitalization. In the second half of the sample, duals account for 25% and 31%, respectively, of the aggregate offer value and market capitalization of the firm-commitment IPO market.

Fig. 1 illustrates the distribution of voting rights attached to the withheld class of shares in dual-class IPOs. Sixty-eight percent of dual-class firms create a class of shares with more than one vote per share. The most common structure grants ten votes per share to the privately held class. The 32% of firms that create an equity class with one vote per share or less require closer inspection. Even in this group the dual-class structure can serve to entrench management. Some of these firms issue nonvoting stock to the public, clearly giving insiders control with their one-vote shares. Others go public with multiple classes of stock for regulatory motives. For example, a firm can issue nonvoting Class B shares to a financial institution restricted by the Bank Holding Company Act of 1956 to control no more than 5% of the votes of a public company. Issuing nonvoting shares to an outside investor entrenches managers in the same way that leverage concentrates insiders' voting power (see, e.g., Harris and Raviv, 1991). Of the 32% of the dual-class firms that grant one vote per share (or less) to their Class B stockholders, about one-sixth grant special voting
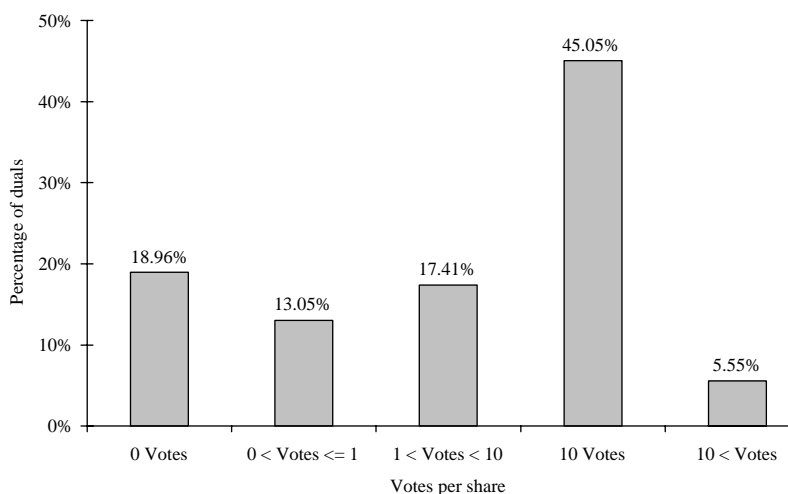
Fig. 1. Distribution of votes for withheld class of dual-class IPOs. The full sample includes 253 dual-class firm-commitment initial public offerings dating from January 1990 to September 1998. The figure presents votes per share for the withheld class of common stock for dual-class initial public offerings.

privileges to insiders such as the right to elect a majority of the board of directors. Excluding firms that do not explicitly grant insiders disproportionate voting rights does not materially affect the qualitative or quantitative results below. Twenty-eight firms have three classes of stock. One of these issued nonvoting stock to the public. Most of the others had the typical Class A (1 vote) and Class B (10 votes) configuration with an additional nonvoting Class, Class C, issued to a single shareholder, often a financial institution.

Table 2 reports statistics separately for dual and single-class firms. Single-class issuers underprice by 13.7% on average while dual-class firms by 11.9%. The difference is insignificant (although an unreported Wilcoxon test reveals a significant difference in medians). Compared with single-class firms, duals are larger (by offer value and market capitalization), list fewer uses for their IPO proceeds, are less likely to receive venture-capital backing, hire more reputable investment bankers, are more likely to be equity-carve-out firms, list with Nasdaq less frequently, and are more likely to pay immediate dividends.

Extant research indicates that our Table 2 variables influence IPO underpricing, but the table reports tests of unconditional differences in means only. In the next section, we report our findings from regression models that allow us to measure the impact of offer type on underpricing while holding other relevant factors constant.

4. Underpricing results

Here we report regression results demonstrating that dual and single-class IPOs experience different initial returns. Borrowing from the IPO-underpricing literature,

Table 2
Select values for IPOs from January 1990 to September 1998 by offer type

This table presents select mean values for the full sample by offer type. The full sample includes 2,622 firm-commitment initial public offerings dating from January 1990 to September 1998. Initial return equals the change in price from the final offer price to the first-day secondary-market closing price. Offer value is the total number of shares offered times the inflation-adjusted final offer price. Market capitalization is the total number of shares outstanding upon completion of the offering times the inflation-adjusted first-day secondary-market closing price. Dollar values are inflation adjusted to constant 1998 dollars using the Consumer Price Index. Offer-price revision equals the final offer price minus the average of the high and low prices of the offer price range all divided by the average of the high and low prices of the offer price range. Number of uses of proceeds is the number of use of proceeds listed in the final prospectus. High-reputation I-bank deals are underwritten by investment banks that have a sample market share above the median proceeds-weighted market share of sample offering value. Percentage of high-reputation I-bank deals, of venture-backed deals, of equity-carve-out deals, of reverse-LBO deals, of Nasdaq-listed deals, of first-tier audited deals, with anti-takeover provisions, and with no dividends anticipated represent the proportion of each within the respective subsamples. Lagged-market return is the compounded daily CRSP value-weighted return over the 22 trading days preceding the initial public offering. P-values refer to t-tests of equal means across offer types.

	Dual-class	Single-class	P-value
Number of deals	253	2,369	
Mean initial return	11.9%	13.7%	0.1335
Mean offer value in millions	$130.727	$63.064	0.0001***
Mean market capitalization in millions	$739.348	$253.493	0.0001***
Mean offer-price revision	−0.2%	−0.7%	0.4415
Mean number of uses of proceeds	2.810	3.149	0.0001***
High-reputation I-bank deals	71.1%	49.6%	0.0001***
Venture-backed deals	16.2%	39.8%	0.0001***
Equity-carve-out deals	12.6%	8.3%	0.0467**
Reverse-LBO deals	5.5%	4.0%	0.3092
Nasdaq-listed deals	64.0%	84.4%	0.0001***
First-tier audited deals	95.7%	94.3%	0.3249
Anti-takeover provisions	93.7%	93.2%	0.7952
No dividends anticipated	82.6%	88.1%	0.0288**
Lagged-market return	1.3%	1.3%	0.9693

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

we control for several factors which influence initial returns. Carter and Manaster (1990), Megginson and Weiss (1991), and others create measures of investment-bank quality or reputation and demonstrate that firms going public through higher quality banks experience less underpricing in the 1980s. We calculate Megginson-Weiss proceeds-weighted market-share rankings for our sample and rely on a finding reported by Carter et al. (1998) that the Carter-Manaster and Megginson-Weiss measures are highly correlated. Other studies such as Michaely and Shaw (1995), Beatty and Welch (1996), Beatty (1989), and Johnson and Miller (1988), report that auditor quality affects initial returns. Accordingly, we create a dummy variable equal to one for IPOs using top-tier auditors. Venture-capital backing also influences IPO underpricing as in Megginson and Weiss (1991), Barry et al. (1990), and Gompers

(1996). Ritter (2003) finds that the relationship between venture backing and IPO underpricing reversed in the 1990s. We obtain a list of venture-backed IPOs from *Venture Capital Yearbook* and create a dummy variable equal to one for these offerings. All three of these variables control for information asymmetries between issuers and investors.

Hanley (1993), Loughran and Ritter (2003), and Lowry and Schwert (2002) demonstrate that the dynamics of price discovery, as measured by the final offer price relative to the preliminary prospectus's price range, predicts initial returns. Our data do not include the preliminary prospectus offer-price range, but the highest and lowest prices reported among all pre-IPO filings are included. From this information, we calculate an offer-price-revision variable in two steps. First, we calculate the midpoint of the offer-price-range extremes. Second, we calculate the difference between the final offer price and the midpoint, expressed as a percentage of the latter. To allow for asymmetric effects in the price discovery process, we create a second variable which equals the offer-price revision when the offer-price revision is positive and zero otherwise.

Ritter (1984) finds a relation between initial returns and the IPO offer value. He asserts that offer value proxies for size and that a larger offer value is associated with less underpricing. To control for size differences, we include the log of the offer's global proceeds on the right-hand side of our regression. To control for changing nominal stock valuations, we inflate nominal values to 1998 dollars using the return on the S&P500 index. Alternative specifications that convert current dollars to constant 1998 dollars using the Consumer Price Index yield virtually identical results. We also expect NYSE or AMEX-listed IPOs to be larger and less risky than average. Accordingly, we include a dummy variable equal to one for Nasdaq-listed IPOs and zero for NYSE and AMEX IPOs.

Beatty and Ritter (1986) postulate a positive correlation between the number of uses of proceeds named in the prospectus and issue-value uncertainty. We control for this by including the natural logarithm of one plus the number of uses of proceeds in the regression model. As an additional measure of uncertainty regarding the value of the IPO, we include a dummy variable equal to one for firms stating in their prospectuses that they do not anticipate paying dividends. We expect that dividend-paying IPOs represent mature firms with longer operating histories and less risk. We also include dummy variables equal to one when the IPO firm is doing a reverse leverage buyout or when the IPO firm is an equity carve out from another firm. Muscarella and Vetsuypens (1989) find that these IPOs experience below-average underpricing and argue that this occurs because investors have better information about previously public firms.

Managers seeking protection from the market for corporate control have at their disposal several anti-takeover devices other than dual-class shares. If such mechanisms limit outsiders' influence, then Brennan and Franks' (1997) model would predict less underpricing for firms employing them. Field and Karpoff (2002) conclude that firms with strong anti-takeover mechanisms are less likely to be acquired. Thus, for each IPO, we assign a dummy variable equal to one for firms adopting anti-takeover devices.

Recognizing that IPO underpricing varies over time and across industries, we consider several approaches to control for these effects. To capture time series variation in underpricing, including hot market effects, we include year dummies (1990 excluded) in the regression. Using a time trend calculated by subtracting 1990 from the offer year of each IPO produces similar results. We also include the lagged return on the CRSP value-weighted index over the 22 trading days preceding the IPO as an independent variable. To control for differences in underpricing across industries, we include two-digit SIC-code dummies (excluding industries coded less than 10 and those with no IPOs). An alternative specification suggested by the referee that produces similar results utilizes a high-tech dummy variable equal to one for SIC industries 356, 366, 367, 489, and 737.

Our main regression model appears in Table 3 and explains 28.5% of the cross-sectional variation in first-day returns. Controlling for other offer and issuer characteristics, dual-class firms are underpriced 2.9 percentage points less than singles. This result is significant at the 1% level and represents more than 20% of the average IPO discount. Moreover, the pricing difference translates into an additional $3.8 million in proceeds raised for the average dual, given a mean offer value of $130 million for duals.

Among control variables in Table 3, the coefficients on offer value, offer-price revision, reverse LBOs, dividends, and the lagged market return are statistically significant, with the expected sign. Venture-backed IPOs and IPOs underwritten by high-quality banks actually experience greater underpricing. These results confirm the findings of Beatty and Welch (1996) and Ritter (2003) that the relationship between underpricing and investor banker reputation and venture capital financing reversed in the 1990s.

A skeptic might worry that dual-class firms underprice less because they are larger and that the inclusion of offer value on the right-hand side may not adequately control for this effect. To address this concern, we create a size-matched sample. We match a unique single-class firm to each dual-class IPO by minimizing the absolute difference in offer values (adjusted by the S&P500 index) across the two deals. With a much smaller sample, we use a more parsimonious regression model, substituting the high-tech dummy and time-trend variables in place of two-digit SIC and year dummies. Otherwise the regression model is unchanged. Results from the matched sample appear in Table 4. The dual-class coefficient is –2.8% and is significant at the 10% level. Both Tables 3 and 4 confirm that dual-class IPOs are underpriced less than singles, with Table 4 providing reassurance that the difference is not attributable to size.

Our finding that dual-class issues experience less underpricing survives additional robustness checks. First, the coefficient on the dual-class dummy becomes more negative and more significant when we exclude from the regression those firms that withhold dual-class shares with one or fewer votes per share, or when we use the post-IPO market capitalization rather than the offer value as a control for firm size. Second, we replaced the dual-class dummy variable in Table 3's regression model with a continuous variable equal to the ratio of the percentage of votes controlled by insiders divided by the percentage of cash-flow claims they hold. At the IPO stage, this ratio is very close to one for both single and dual-class firms and shows no

Table 3

OLS regression of initial return on offer type

This table presents ordinary least squares regression analysis of initial return on offer type for the full sample, which includes 253 dual-class and 2,369 single-class firm-commitment initial public offerings dating from January 1990 to September 1998. Due to missing data we lose 14 dual-class and six single-class observations. The dependent variable is the initial public offering initial return, defined as the percentage change in price from the final offer price to the first-day secondary-market closing price. Dual-class (offer type) indicator equals one for dual-class initial public offerings. Offer value is the total number of shares offered times the S&P 500 index-adjusted final offer price. Offer-price revision equals the percentage change in price from the midpoint of the high and low office prices to the final offer price. Positive offer-price revision is equal to offer-price revision for nonnegative values and zero otherwise. Number of uses of proceeds equals the number of use of proceeds listed in the final prospectus. Underwriter market share is the percent of sample offer value underwritten by the underwriter handling the deal. Indicator variables are set equal one, respectively, for venture-backed deals, equity-carve-out deals, reverse-LBO deals, Nasdaq-listed deals, firsttier audited deals, deals with anti-takeover provisions, and deals with no anticipated dividends. Lagged-market return is the percent of compounded daily CRSP value-weighted return over the 22 trading days preceding the initial public offering. Regression includes SIC and year dummies. *P*-values refer to *t*-tests of parameter estimates equal to zero.

	Parameter Estimate	Standard Error	*P*-value
Intercept	7.584	4.744	0.1100
Dual-class deal	−2.945	1.239	0.0175***
LN offer value in millions	−1.068	0.568	0.0602*
Offer-price revision	0.208	0.046	0.0001***
Positive offer-price revision	0.890	0.085	0.0001***
LN number of uses of proceeds	0.565	1.038	0.5866
Underwriter market share	0.692	0.084	0.0001***
Venture-backed deal	1.817	0.799	0.0231**
Equity-carve-out deal	−2.023	1.349	0.1340
Reverse-LBO deal	−3.406	1.796	0.0581**
Nasdaq-listed deal	0.878	1.138	0.4404
First-tier Audited deal	−2.430	1.553	0.1179
Anti-takeover provisions	0.527	1.377	0.7017
No anticipated dividends	1.890	1.143	0.0983*
Lagged-market return	0.340	0.122	0.0052***
Adjusted *R*-square	28.5%		
P-value for prob. > *F*	0.0001		
Number of observations	2,602		

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

relationship to underpricing. However, when we recalculate this ratio under the assumption that insiders will eventually divest themselves of ordinary shares but will continue to hold all the stock with superior voting rights, the ratio shows an economically and statistically significant negative correlation with underpricing. Third, excluding IPOs with offer prices below $8 does not affect the results.

Brennan and Franks (1997) contend that dual-class firms underprice less because they have no need to create ownership dispersion to retain control, but perhaps they

Table 4

OLS regression of initial return on offer type (sized-matched sample)

This table presents ordinary least-squares regression analysis of initial return on offer type for a size-matched sample, which includes 253 dual-class and 253 single-class firm-commitment initial public offerings dating from January 1990 to September 1998. Due to missing data we lose 14 dual-class and 14 single-class observations. The dependent variable is the initial public offering initial return, defined as the percentage change in price from the final offer price to the first-day secondary-market closing price. Dual-class (offer type) indicator equals one for dual-class initial public offerings. Offer value is the total number of shares offered times the S&P 500 index-adjusted final offer price. Offer-price revision equals the percentage change in price from the midpoint of the high and low office prices to the final offer price. Positive offer-price revision is equal to offer price revision for nonnegative values and zero otherwise. Number of uses of proceeds equals the number of use of proceeds listed in the final prospectus. Underwriter market share is the percent of sample offer value underwritten by the underwriter handling the deal. Indicator variables are set equal one, respectively, for venture-backed deals, equity-carve-out deals, reverse-LBO deals, Nasdaq-listed deals, first-tier audited deals, deals with anti-takeover provisions, and deals with no anticipated dividends. Lagged-market return is the percent of compounded daily CRSP value-weighted return over the 22 trading days preceding the initial public offering. Tech firm dummy is set equal to one if the leading three digits of a firm's SIC are 357, 366, 367, 489, or 737. Time trend is equal to the IPO year minus 1990. *P*-values refer to *t*-tests of parameter estimates equal to zero.

	Parameter standard	Estimate error	*P*-value
Intercept	9.342	8.556	0.2755
Dual-class deal	−2.759	1.603	0.0858*
LN offer value in millions	−0.248	1.123	0.8252
Offer-price revision	0.440	0.116	0.0002***
Positive offer-price revision	0.319	0.206	0.1230
LN number of uses of proceeds	−1.460	2.088	0.4848
Underwriter market share	0.108	0.162	0.5056
Venture-backed deal	3.422	1.962	0.0818*
Equity-carve-out deal	−1.337	2.468	0.5882
Reverse-LBO deal	−1.223	3.293	0.7105
Nasdaq-listed deal	0.131	2.028	0.9485
First-tier audited deal	−6.627	3.848	0.0857*
Anti-takeover provisions	4.373	3.006	0.1465
No anticipated dividends	2.140	2.295	0.3517
Lagged-market return	0.669	0.265	0.0117***
Tech firm	7.599	2.248	0.0008***
Time trend	0.760	0.387	0.0501**
Adjusted *R*-square	24.2%		
P-value for prob. > F	0.0001		
Number of observations	478		

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

underprice less because they are less inclined to create a liquid secondary market as in Booth and Chua (1996). To assuage concerns that a low taste for liquidity confounds the control interpretation of dual-class underpricing, we need to show that publicly traded shares of dual-class firms are at least as liquid as those of single-class firms. Table 5 shows the results of univariate and multivariate liquidity comparisons between duals and singles. In Panel A we examine various liquidity measures taken from the *TAQ* database. On average, shares of dual-class firms trade

Table 5

OLS regressions of percentage bid-ask spreads on offer type

This table presents ordinary least-squares regression analysis of percentage bid-ask spreads on offer type for the full sample, which includes 253 dual-class and 2,369 single-class firm-commitment initial public offerings dating from January 1990 to September 1998. Panel A presents descriptive statistics of *post*-IPO intraday liquidity by offer type for the first five trading days following the IPO. Panel A analysis is performed using the NYSE TAQ data, and therefore IPOs that predate TAQ are excluded. A total of 200 dual-class IPOs, 1,692 single-class IPOs, and 2.455 million transactions are analyzed in Panel A. Quoted half spread is calculated as the lowest ask price minus the highest bid price, in effect at the time of the transaction, divided by two. Percentage quoted spread is calculated as the lowest ask price minus the highest bid price, in effect at the time of the transaction, divided by the midpoint of the ask and bid prices. Effective half spread is calculated as the absolute value of the transaction price minus the midpoint of the ask and bid prices in effect at the time of the transaction. Percentage effective spread is calculated as the two times the absolute value of the transaction price minus the midpoint, of the ask and bid prices in effect at the time of the transaction, divided by the midpoint. Quoted depth is the sum of the ask depth and the bid depth at the time of the transaction. Panel B presents OLS analysis of the *post*-IPO percentage bid-ask spread by offer type for the first 252 trading days following the IPO. Panel B analysis is performed using entirely CRSP daily data on Nasdaq-listed sample firms, and therefore IPOs that are NYSE/AMEX listed are excluded. A total of 157 dual-class IPOs and 1,991 single-class IPOs are analyzed in Panel B. The dependent variable, percentage quoted spread, equals the bid/ask spread in effect on Nasdaq at the time the market closes divided by the midpoint, and multiplied by 100. Closing price, market capitalization, dollar volume, number of trades are daily measures taken directly from the CRSP daily files. Standard deviation of daily returns is percentage calculated over the first 252 trading days following the IPO. Mean values for each firm are used in the regression. *P*-values refer to *t*-tests of equal means across offer types or to *t*-tests of parameter estimates equal to zero.

Panel A. Post-IPO intraday liquidity measures by offer type

	Dual-class	Single-class	*P*-value
Number of deals	200	1,692	
Number of transactions	352,310	2,103,083	
Mean quoted half spread	$0.126	$0.163	0.0001***
Mean relative quoted spread	1.3%	1.9%	0.0001***
Mean effective half spread	$0.115	$0.141	0.0001***
Mean relative effective spread	1.1%	1.6%	0.0001***
Mean quoted depth	133.954	71.764	0.0001***

Panel B. Regression of percentage bid-ask spreads on offer type

	Parameter estimate	Standard error	*P*-value
Intercept	−6.840	0.416	0.0001***
Dual-class deal	−0.314	0.106	0.0032***
Inverse of daily closing price	12.731	0.944	0.0001***
LN daily market capitalization in millions	−0.898	0.049	0.0001***
Daily dollar volume in millions	0.169	0.017	0.0001***
Daily number of trades in hundreds	−0.993	0.072	0.0001***
Standard deviation of daily returns	0.430	0.023	0.0001***
Adjusted *R*-square	64.9%		
P-value for prob. > *F*	0.0001		
Number of observations	2,148		

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

at lower quoted and effective spreads (absolute or relative to price) and display greater depth. In Panel B we regress the percentage bid-ask spread on several of the factors known to influence liquidity such as price, trading volume, and volatility. The negative coefficient on the dual-class dummy variable indicates more liquidity for duals.

Another potential explanation for our result that dual-class IPOs experience less underpricing is that our tests suffer from an omitted variables problem that fails to capture differences in demand for single and dual-class IPOs. In a high-demand market with unusually high levels of underpricing, firms may find it easy to distribute shares widely. If single-class IPOs occur more frequently in these markets, then they may be underpriced more and have greater ownership dispersion than dual-class firms.

In summary, this section provides robust evidence that dual-class firms experience less underpricing than single-class firms. This finding suggests that corporate control considerations play a central role in underpricing. Though several theoretical papers explore the influence of control on the going-public process, to our knowledge this is the first paper to establish an empirical connection between control considerations and the pricing of US IPOs. The underpricing difference that we show is interesting in its own right, but to be consistent with Brennan and Franks' (1997) model there are other patterns that we should observe. In particular, the Brennan and Franks' model predicts that firms whose managers place a high value on control and who underprice to maintain control will have dispersed ownership. Presumably such firms experience control events less frequently, as well. The next section tests these hypotheses by examining post-IPO ownership structures and the frequency of dual and single-class-firm acquisitions.

5. Ownership dispersion and acquisitions

Here we compare institutional ownership and ''survival rates'' of dual and single-class IPOs. According to Brennan and Franks, a single-class issuer seeking to maintain post-IPO control will underprice shares to create excess demand. Subsequent rationing favors small investors over large ones. Consistent with our underpricing findings, we predict that dual-class firms do not ration to discriminate against large investors. We therefore expect less dispersed ownership in dual-class firms. Brennan and Franks (1997) do not specify a particular measure of dispersion that insiders attempt to achieve through rationing. Consequently, we offer several different measures of outside ownership dispersion in our tests below. We focus on institutional holdings of firms immediately after their IPOs because institutions are likely to demand the largest share allocations.

Table 6 Panel A demonstrates that institutions hold a larger fraction of the publicly traded equity of dual-class firms than of singles, 28.2% compared with 19.7%, a statistically significant difference. This relationship holds when we measure institutional holdings as a fraction of the public float. Similarly, dual-class firms have a significantly higher number of institutional holders. Panel A also reports that a

Table 6

OLS regressions of *post*-IPO 13f institutional ownership on offer type

This table presents ordinary least-squares regression analysis of *post*-IPO 13f institutional ownership on offer type for the full sample, which includes 253 dual-class and 2,369 single-class firm-commitment initial public offerings dating from January 1990 to September 1998. Due to missing data we lose 16 dual-class and 168 single-class observations. *Post*-IPO measures of 13f ownership are end of quarter values coinciding with the quarter in which the initial public offering took place. The dependent variable is the *post*-IPO average institutional block size, which is equal to the aggregate institutional share holdings of the publicly traded class divided by the number of institutional owners expressed as a percentage. Indicator variables are set equal to one, respectively, for dual-class and venture-backed deals. Offer value is the total number of shares offered times the S&P 500 index-adjusted final offer price. Underwriter market share is the percent of sample offer value underwritten by the underwriter handling the deal. Regressions include SIC dummies. *P*-values refer to *t*-tests of equal means across offer types or to *t*-tests of parameter estimates equal to zero.

Panel A. Post-IPO 13f ownership by offer type

	Dual-class	Single-class	*P*-value
Number of deals	237	2,201	
Mean aggregate institutional holdings	28.2%	19.7%	0.0001***
Mean number of institutional owners	30.232	22.085	0.0001***
Mean average institutional block size	1.1%	1.0%	0.3668

Panel B. Regression of post-IPO 13f average institutional block size on offer type

	Parameter estimate	Standard error	*P*-value
Intercept	1.877	0.142	0.0001***
Dual-class deal	0.183	0.080	0.0227**
LN offer value in millions	−0.175	0.031	0.0001***
Underwriter market share	−0.006	0.005	0.2620
Venture-backed deal	0.065	0.050	0.1959
Adjusted *R*-square	3.5%		
P-value for prob. > *F*	0.0001		
Number of observations	2,438		

Panel C. Regression of post-IPO 13f average institutional block size for singles on underpricing

	Parameter estimate	Standard error	*P*-value
Intercept	1.807	0.151	0.0001***
Initial return	−0.007	0.001	0.0001***
LN offer value in millions	−0.149	0.033	0.0001***
Underwriter market share	−0.003	0.006	0.6584
Venture-backed deal	0.099	0.052	0.0559**
Adjusted *R*-square	4.9%		
P-value for prob. > *F*	0.0001		
Number of observations	2,201		

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

dual-class firm's average institutional investor owns 1.1% of the outstanding shares, slightly larger than the average block held by institutional investors in single-class firms.

In a regression model, Table 6 Panel B examines differences in the average institutional block size. From earlier results we know that dual-class firms are much larger than singles, and one might expect larger firms to have smaller average blocks. We therefore include the logarithm of the offer value as an independent variable in the regression. Anticipating that underwriter choice and whether the firm receives venture backing will influence the firm's post-IPO ownership structure, we also include in the regression our underwriter-reputation measure and a dummy variable for venture-backed deals. Controlling for these (and industry) effects, we find that the average institutional investor holds 0.18% more in dual-class firms, a statistically significant difference.

To put the economic significance of this result in context, we offer two comparisons. First, an increase in average block size of 0.18% represents an 18% increase when compared with the 1.0% average block size of single-class firms. Second, given the average dual-class firm's post-IPO market capitalization ($739 million), an investor seeking to increase her position by 0.18% must invest an additional $1.4 million. Changing the dependent variable of the regression from average block size to either aggregate institutional holdings or the number of institutional investors yields qualitatively similar results. Both as a group and as individual entities, institutions own larger fractions of dual-class IPOs, even after controlling for firm attributes that might influence post-IPO ownership.

Is the difference in institutional ownership between singles and duals sufficient to justify a 3% difference in underpricing? Given the significant first-day turnover often experienced by underpriced IPOs, investors who want to increase their ownership positions can do so in the secondary market without great difficulty. That would make underpricing a costly and potentially ineffective lever by which firms can influence their post-IPO ownership structures.

If the conjecture that dual-class firms have higher institutional ownership because they do not underprice to ration is correct, then we should observe evidence of that pattern in the cross section of single-class firms. Specifically, there should be lower institutional ownership in single-class firms with greater underpricing. Table 6 Panel C repeats Panel B's regression model with two modifications. The regression includes only single-class issues, and we add the initial return as an independent variable. As expected, a significant negative correlation obtains between underpricing and post-IPO institutional ownership for single-class firms. However, the economic significance of this effect is small. An increase in an IPO's initial return of one hundred basis points results in a decrease in the average institutional holding of just 0.07%.

Although the regression model in Table 6 controls for size by including the logarithm of the IPO offer value as an independent variable, it is possible that firm size and institutional ownership interact in ways not fully captured by the regression. We repeated our analysis of institutional ownership using the size-matched sample described in the previous section and found that the mean institutional ownership

Table 7
Logistic regression of five-year survivability on offer type

This table presents logistic regression analysis of five-year survivability on offer type for the full sample, which includes 253 dual-class and 2,369 single-class firm-commitment initial public offerings dating from January 1990 to September 1998. We omit 163 dual-class and 1,192 single-class observations that do not have at least five years of calendar time beyond their initial public offering date. Due to missing sales-to-price data we lose an additional 36 dual-class and 48 single-class observations. The logistic regression assesses the probability of being acquired within a period of five years of the initial public offering date. The dependent variable is an indicator variable that is equal to one if the firm is acquired. Indicator variables are set equal to one, respectively, for dual-class deals, venture-backed deals, and Nasdaq-listed deals. Underwriter market share is the fraction of total offer value underwritten by the underwriter handling the deal. Offer value is the total number of shares offered times the S&P 500 index-adjusted final offer price. Sales-to-price multiplier is calculated as the most recent fiscal-year-end net sales reported in the final prospectus dividend by the first-day secondary-market capitalization. Fraction of institutional ownership is the aggregate end of quarter institutional holdings for the quarter in which the initial public offering took place. Premiums refer to the acquisition premiums, which measure the acquisition price relative to the target's closing price one day, one week, and four weeks prior to the acquisition announcement date. Regressions include SIC dummies. P-values refer to t-tests of parameter estimates equal to zero.

Panel A. Fraction acquired within five-years by offer type

	Dual-class	Single-class	P-value
Number of deals with 5-years of IPO-time	91	1,176	
Deals acquired within 5-years	15.4%	21.3%	0.1784

Panel B. Logistic regression of acquired within five-years on offer type

	Parameter estimate	Standard error	P-value
Intercept	−1.296	0.799	0.1049*
Dual-class deal	−1.557	0.578	0.0071***
Underwriter market share	−0.064	0.184	0.7268
Venture-backed deal	0.098	0.126	0.4347
LN offer value in millions	0.004	0.072	0.9506
Sales-to-price multiplier	−0.163	2.028	0.9358
Fraction of institutional ownership	0.973	0.482	0.0436**
Nasdaq-listed deal	0.149	0.275	0.5863
Correct predictions	70.7%		
Number of observations	1,183		

Panel C. Premiums for firms acquired within five-years by offer type

	Dual-class	Single-class	P-value
Number of deals acquired	12	204	
Mean one-day prior to announcement	47.6%	28.6%	0.2403
Mean one-week prior to announcement	56.5%	33.3%	0.1853
Mean four-weeks prior to announcement	71.9%	40.4%	0.0734*

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

and the mean institutional block size in dual-class firms were both higher than in single-class firms. However, the difference was not statistically significant in the multivariate regression.

The control-based interpretation of our underpricing results presumes that insiders effectively ensure their own survival when issuing dual-class shares. Thus, we expect that the acquisition of dual-class firms occurs less frequently than those of singles. Table 7 (Panel A) shows that 15.4% of dual-class firms are acquired within five years of their IPO, compared with 21.3% of single-class firms. Panel B reports logit-regression estimates whose dependent variable equals one if a firm is acquired within five years of its IPO and zero otherwise. Independent variables include firm characteristics that might influence survival rates, such as the offer value, sales-to-price ratio, institutional ownership, Nasdaq-listed, and whether the firm received high-quality underwriting services or venture backing. As expected, the probability of an acquisition declines when a firm implements a dual-class ownership structure. The acquisition probability increases with institutional ownership. None of the other variables exert a significant influence in the model.

We conclude our analysis of acquisition events by reporting acquisition premiums for dual and single-class firms in Panel C Table 7. The premiums come directly from the Securities Data Corporation (SDC) *Platinum* database and are not adjusted for firm risk or market movements. SDC measures the acquisition price relative to the target's closing price one day, one week, and four weeks before the acquisition announcement. By all three measures, dual-class targets receive higher premiums, though the difference is significant only in the four-week return comparison. We offer the latter only as tentative evidence that dual-class ownership structures can benefit outside shareholders.

We have shown that dual-class firms experience less underpricing, have slightly higher institutional ownership, and relinquish control through acquisitions less frequently than single-class firms. Our final section discusses elements of the decision to issue dual or single-class shares in an IPO.

6. Costs of issuing dual-class shares

Underpricing represents a significant fraction of the total cost of going public. Given that dual-class firms experience less underpricing, why don't more firms choose this financial structure? Put differently, what costs and benefits must companies weigh when deciding to create either one or more share classes? We are only beginning to explore this question. Clearly, dual-class ownership structures provide managers with protection from the corporate control market. If managers issue dual-class shares to protect private control benefits, the protection should come at a cost to issuers. However, theoretical and empirical evidence suggests that entrenching managers can sometimes serve the interests of outside shareholders. Brickley et al. (1994) find that poison pills increase share prices when adopted by firms with outside-directed boards and decrease share prices when insiders hold a

board-seat majority. A study of golden parachutes by Davidson et al. (1998) reports a similar pattern.

For example, Table 7 demonstrates that when dual-class firms are acquired, shareholders receive higher premiums than shareholders of acquired single-class firms. Discerning which managers are entrenched to capture private control benefits and which are entrenched in the interests of shareholders challenges the empiricist. Furthermore, measuring the costs that insiders bear to entrench themselves is difficult. The results below suggest some of the tradeoffs that managers of dual-class firms face when issuing shares with inferior voting rights. We recognize that, both within and across firms, the motives driving issuers to adopt dual-class structures are multidimensional. We characterize certain differences between dual and single-class firms and interpret them as costs of adopting a dual-class ownership structure. We also offer limited evidence related to whether the entrenchment associated with dual-class structures serves shareholder interests or merely protects private control benefits.

In what types of firms does managerial entrenchment serve shareholders' interests? Entrenchment may be optimal when firms face an underinvestment problem (see, e.g., Attari and Banerjee, 2002). For example, consider a firm with profitable but risky investment projects. Financing these projects with equity dilutes insiders' control, making insiders more vulnerable to displacement. Dual-class shares substantially reduce the dilution effect and mitigate the underinvestment problem. Similarly, when maximizing shareholder value requires a significant investment by the manager in firm-specific human capital, entrenchment arises from incentive compatibility. Shareholders commit to retaining managers, thereby giving managers the incentive to invest in human capital.

Identifying firms susceptible to severe underinvestment problems requires a measure of speculation by the empiricist. Frequently, researchers associate firms in high-tech industries, firms with low book-to-market ratios, or firms with rapid sales growth with potential underinvestment problems. To the extent that dual-class firms optimally entrench insiders, we expect duals to exhibit these characteristics.

In what types of firms are private control benefits sufficient to influence the decision to issue dual-class shares? By definition, private control benefits are difficult to observe. In their seminal work on the determinants of ownership structure, Demsetz and Lehn (1985) speculate that private control benefits influence ownership structures in industries such as media, sports, and entertainment. For example, owners can enjoy private benefits from controlling the editorial privilege of a media company or affiliating with sports and entertainment celebrities. Opportunities to capture private benefits can also arise when insiders of one firm control other companies. Inter-company transactions create prospects for self dealing. Perhaps the simplest type of private benefit is excessive compensation. One might expect insiders receiving higher than normal compensation (conditional on firm size, industry, etc.) to go to greater lengths to protect their control rights.

We begin by offering anecdotal evidence obtained from prospectuses suggesting that private control benefits play a role in the decision to issue dual-class shares. More systematic evidence follows. Two examples of prominent dual-class media

companies in our sample with distinctive public messages are Black Entertainment Television (BET) and International Family Entertainment (IFE), parent company of The Family Channel.[2] IFE illustrates at least two different types of private benefits. First, for several years evangelist Pat Robertson served as the company's chairman and viewed Family Channel programming as an extension of his ministry. Second, Pat's son, Tim, held the positions of company president and chief executive officer (CEO). Generally it is more common to observe family members holding key positions in dual-class firms than in singles.

A dual-class firm that illustrates self dealing as a private benefit is EZ Pawn. EZ Pawn's IPO was underwritten by an investment bank owned by its chairman and CEO. Possibly as a means to preserve opportunities for self-dealing by creating a friendly board, an employee of the underwriter served on EZ Pawn's board of directors.

Next we offer several pieces of more systematic, albeit indirect, evidence suggesting that firms issue dual-class shares primarily to protect private control benefits rather than to maximize share prices. First, we compare CEO compensation in dual and single-class firms. We collect compensation data from the prospectuses of a subset of our original sample. This subset includes 900 single-class and 229 dual-class IPOs. From each prospectus we obtain the total annual cash compensation paid to the CEO in the fiscal year preceding the IPO, and we convert these values into constant 1998 dollars using the Consumer Price Index. The average (median) dual-class CEO receives $905,649 ($489,605) in cash compensation compared to $442,368 ($278,988) for the average CEO of a single-class firm, a highly significant difference. In part this pay gap reflects differences in firm characteristics, so we estimate a simple compensation regression model controlling for firm size, venture backing, CEO age, firm age, number of employees, industry, and year. Holding these factors constant, the average dual-class CEO earns approximately $242,000 more than the typical single-class CEO. This regression model explains 35% of the cross-sectional variation in CEO pay, and the difference between dual and single-class compensation is significant at the 1% level.

Higher compensation in dual-class firms is open to multiple interpretations. Firms could use compensation to solve the underinvestment problems described above, although the entrenchment provided by dual-class equity should serve as a substitute for higher compensation. If either mechanism is in place to solve an underinvestment problem in dual-class firms, then we might expect to observe indications of superior growth potential in duals. We find no such evidence. Univariate and multivariate comparisons of post-IPO revenue growth, over several different horizons, reveal no significant differences between dual and single-class firms.

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[2] In an interview with Jesse Jackson on CNN, 4 June 2000, Robert L. Johnson, president and CEO of BET said: "And as you know, Reverend Jackson, BET at a moment's notice will turn its network over to important issues, as we did when Minister Farrakhan wanted to come in and talk about the launching of the Million Man March, or our full 24-hour coverage, as CNN did, or to our coverage of the funeral of the late Ron Brown. We understand our obligation, and we're prepared to use our air to keep African-Americans fully informed…'' [CNN Transcript # 00060400V49].

If dual-class issuers protect private control benefits, we expect the markets to extract a price for this protection. Specifically, we expect duals' publicly traded shares to sell at lower values, relative to fundamental indicators such as earnings or sales, than those of single-class firms. Table 8 examines our sample firms' earnings-to-price (EP) and sales-to-price (SP) ratios. Multiples equal the first-day secondary-market capitalization divided into the respective fiscal-year-end earnings and sales figures reported in the final IPO prospectus. We use EP and ES rather than PE (price-to-earnings) and PS (price-to-sales) to avoid the skewness that results when firms have very low sales and earnings. Note that higher values of EP and ES mean lower market values relative to fundamentals. Our tests include firms with negative earnings, although excluding those firms from the analysis only strengthens our results.

Panel A demonstrates that dual-class firms have higher mean and median EP and SP ratios than singles. For duals these ratios are 25–50% higher (at the median) than for singles and the differences are significant. Clearly, factors other than management entrenchment influence these multiples, most notably risk and growth prospects. Panels B and C regress EP and SP ratios on the dual-class indicator variable (and SIC codes) as well as variables that control for risk (the logarithm of the offer value) and growth (post-IPO two-year growth). Kim and Ritter (1999) also use sales growth in their valuation regressions although they use pre-IPO growth. To construct the latter variable, we use COMPUSTAT to determine the compound annual sales growth for two post-IPO years.

In Panel B the coefficient on each of the independent variables has the expected sign and is significant. EP ratios decrease as offer value increases (i.e., as risk decreases) and as post-IPO sales growth increases. Dual-class firms have significantly higher EP ratios than singles. Similar results obtain in Panel C except that the offer-type coefficient no longer passes the significance test. The results in Table 8 collectively indicate that dual-class firms trade at lower valuations relative to fundamentals than singles.

Concluding this section, we discuss the results from an unreported logit analysis to highlight features distinguishing firms issuing dual-class shares from those that do not. This analysis confirms that, relative to single-class firms, firms choosing to go public with dual-class structures use higher quality investment banks, receive less venture backing, and have higher offer values and EP ratios. Consistent with the prediction that duals protect private benefits, industries characterized as likely to have high degrees of private benefits by Demsetz and Lehn (1985), (such as sports management, entertainment, and media industries) show a significant tendency to choose dual-class structures. Although these three industries are of particular interest, the distribution of dual-class firms is widely dispersed. Dual-class firms represent 54 two-digit SIC industries, and only three of these industries individually account for more than 5% of the dual-class deals.

These results suggest that adopting a dual-class structure entails certain costs. We interpret the offer-value and underwriter-quality coefficients as evidence that duals face a higher burden of proof when initially approaching public equity markets. To sell shares with inferior voting rights, dual-class issuers must signal that they are

Table 8
OLS regressions of pricing multipliers on offer type
This table presents ordinary least-squares regression analysis of pricing multipliers for the full sample, which includes 253 dual-class and 2,369 single-class firm-commitment initial public offerings dating from January 1990 to September 1998. In Panel A we omit 39 (45) duals and 65 (165) singles observations with missing earnings-to-price (sales-to-price) measures. In Panel B (C), due to insufficient calendar time since the initial public offering date to calculate two-year sales growth we lose an additional 61 (57) dual-class and 636 (581) single-class observations. In Panel B (C) the dependent variable is earnings-to-price (sales-to-price) multiplier calculated as net income (sales) for the most recent fiscal-year-end reported in the final prospectus divided by the first-day secondary-market capitalization. Dual-class (offer type) indicator is set equal to one for dual-class initial public offerings. Offer value is the total number of shares offered times the S&P 500 index-adjusted final offer price. Two-year sales growth is the compound annual growth rate measured from the initial public offering year to two years after the initial public offering. Regressions include SIC and year dummies. *P*-values refer to *t*-tests of equal means across offer types or to *t*-tests of parameter estimates equal to zero.

Panel A. Pricing multipliers by offer type

	Dual-class	Single-class	*P*-value
Number of deals	214	2,304	
Mean earnings-to-price multiplier	0.019	0.003	0.0114
Median earnings-to-price multiplier	0.018	0.012	0.0063
Number of deals	208	2,204	
Mean sales-to-price multiplier	0.994	0.716	0.0730
Median sales-to-price multiplier	0.416	0.352	0.0071

Panel B. Regression of earnings-to-price multiplier on offer type

	Parameter estimate	Standard error	*P*-value
Intercept	0.058	0.020	0.0030***
Dual-class deal	0.016	0.010	0.0849*
LN offer value in millions	−0.005	0.003	0.0967*
Two-year sales growth	−0.006	0.003	0.0217**
Adjusted *R*-square	1.9%		
P-value for prob. > *F*	0.0001		
Number of observations	1,821		

Panel C. Regression of sales-to-price multiplier on offer type

	Parameter estimate	Standard error	*P*-value
Intercept	1.720	0.233	0.0001***
Dual-class deal	0.151	0.113	0.1849
LN offer value in millions	0.061	0.035	0.0817*
Two-year sales growth	−0.158	0.038	0.0001***
Adjusted *R*-square	9.4%		
P-value for prob. > *F*	0.0001		
Number of observations	1,774		

***, **, * indicates significant at 1%, 5%, and 10%, respectively.

high-quality firms along other dimensions. Consistent with this view, we find in the hand-collected subset of IPO prospectuses that dual-class firms are older and report larger total assets than single-class firms at the time of the IPO. Dual-class firms might also signal high quality by enlisting the services of reputable venture capitalists (VCs), but the data indicate otherwise. Why do VCs participate in dual-class offers less often? The literature shows that VCs provide more than financing to the companies they support, they also play a vital role in corporate governance. For example, VC partners often sit on boards of firms in which they have invested and usually hold a significant fraction of the firm's equity. Given their role as active investors, we expect VCs to resist manager-entrenching financial structures. Evidence from the compensation regression mentioned above indicates that VCs play a role in limiting executive pay. Based on the regression estimates, CEOs of venture-backed firms earn \$140,000 less than their counterparts in firms without venture backing, a difference that is significant at the 1% level. Owner-managers of companies seeking capital face a relatively clear trade-off when dealing with VC firms. They gain much-needed capital and management expertise but sacrifice some measure of control.

7. Conclusions

We find that dual-class IPOs experience less underpricing than single-class IPOs after controlling for other factors that influence initial returns. The difference in returns is both statistically and economically significant and indicates that control issues influence underpricing.

Such results support the Brennan and Franks' (1997) hypothesis that firms seeking to limit large outside blockholdings will underprice more to discriminate against large bidders. Dual-class managers retain voting control even when large common-share blocks form. Dual-class managers have no incentive to underprice to create dispersed ownership. Supporting this interpretation, dual-class firms are acquired less frequently than singles, and institutions make larger investments in duals than in single-class issues.

We must temper these conclusions with two observations. First, as in Field and Sheehan (2000), the differences in ownership structures which we observe seem small relative to the differences in underpricing. Second, several papers show that post-IPO turnover is largest for the most underpriced firms (see, e.g., Ellis et al., 2000; Krigman et al., 1999). This limits the effectiveness of underpricing as a tool to generate ownership dispersion.

Though we make no definitive claims regarding the intent behind the decision to adopt dual-class equity structures, we believe the weight of the evidence points to a private benefits motivation. In industries in which we have priors that private benefits are significant, dual-class firms are more prevalent than singles. Holding constant a variety of factors that influence compensation, dual-class CEOs enjoy higher pay than single-class CEOs. Moreover, dual-class firms typically do not match the profile of high-growth firms that may require entrenched managers to solve an underinvestment problem.

Protection from the market for corporate control comes at a cost. Controlling for the size of the IPO and growth prospects, we find that dual-class firms trade at higher earnings-to-price ratios than single-class firms and appear to face a higher burden of proof in the IPO market. Duals enlist the support of higher quality underwriters, yet they rarely receive venture backing.

Managers taking their private firms public face an unfamiliar threat to their control. Once public, managers can be ousted by rivals through the corporate control market. Brennan and Franks (1997) argue that managers use underpricing and rationing to defend their post-IPO independence. However, underpricing can prove too costly for some managers or fall short of the desired level of entrenchment. Further, ownership structures are fluid, and what is dispersed today can be concentrated tomorrow. As one substitute for underpricing, managers can utilize dual-class security design schemes to bolster their long-run control of the firm. Dual-class structures can, therefore, offer a less costly or more effective means of solidifying control.

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