DISPROPORTIONAL CONTROL AND INSIDER ENTRENCHMENT: EVIDENCE FROM CAPITAL STRUCTURE CHOICES AND INSTITUTIONAL INVESTMENT

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Abstract

A dual-class ownership structure, accompanied by disproportional control rights, is traditionally considered to be an inferior form of governance. We examine how the capital structure choices made by dual-class firms (i.e., by their controlling shareholders or insiders), as well as the investment choices made by the non-controlling institutional investors in these firms, vary with the presence of dual-class ownership and the degree of disproportional control it entails. We consider two sources of disproportional control: the difference between voting rights and cash flow rights and the difference between board election rights and cash flow rights. We find that dual-class firms, as well as firms with higher levels of disproportional control, have higher levels of leverage, a greater likelihood of issuing private debt, a higher fraction of long-term debt, and greater reliance on financial covenants. We also find that dual-class firms have significantly higher levels of institutional ownership, including ownership by institutions that are activist types, face stricter prudence laws, and have longer horizons. Overall, our evidence is not consistent with dual-class ownership promoting rent-seeking behavior. On the contrary, our evidence supports the view that insiders choose other mechanisms, debt in particular, to commit to not expropriate non-controlling shareholders.

1. Introduction

Proportional ownership, or the "one-share/one-vote" principle, is a governance mechanism that ensures that the interests of all shareholders are accounted for fairly. In contrast, dual-class ownership (as well as several other governance structures) allows a few shareholders (primarily insiders, i.e., managers or directors) to control a portion of the votes that substantially exceeds their economic interest, that is, their rights to the firm's cash flows. This disparity between voting rights and cash flow rights creates a conflict of interest; it gives controlling shareholders both the incentives and the opportunity to expropriate value from minority or non-controlling shareholders (Shleifer and Vishny [1997]). Despite the conflicts of interest associated with dual-class ownership, however, recent studies document the existence and increasing use of dual-class ownership in the United States (Gompers, Ishii, and Metrick [2008]; Amit and Villalonga [2008]).[1] In this paper, we attempt to understand whether, on average, the dual-class ownership structure and the disproportional control associated with it are consistent with insiders engaging in rent-seeking behavior or value-enhancing choices.

A growing literature attempts to determine how dual-class ownership and the associated disproportional control affect firm values. The evidence, however, is not conclusive, and more research is needed to understand the uses and consequences of these control mechanisms (Adams and Ferreira [2007]). The disparity between voting and cash-flow rights in dual-class firms has been severely criticized for encouraging managers to engage in rent-seeking behavior, and dual-class ownership is therefore widely considered to be an inferior governance choice. In particular, the literature argues that concentrating control in the hands of a few promotes suboptimal investment decisions, tunneling of resources, inefficiencies in the market for corporate control, and consumption of perks (Bebchuk, Kraakman, and Triantis [2000]; Johnson, La Porta, Lopez-

[1] Gompers et al. [2008] document that over the period 1995 – 2002 six percent of their sample firms have more than one class of common stock. Amit and Villalonga [2008] find that over the period 1994-2000 twelve percent of their sample of 515 Fortune 500 firms has more than one class of common stock.

de-Silanes, and Shleifer [2000]; Grossman and Hart [1988]; Yermack [2006]). We refer to this view as the *entrenchment hypothesis.*[2]

While the preceding arguments support the entrenchment hypothesis, we believe that concentrated control *per se* need not be suboptimal. First, as Hart [1995] argues, while one-share/one-vote works well in most circumstances, it is not always the optimal choice. Allocating greater control to managers and thereby potentially allowing them to derive some private benefits of control can be efficient; for example, it can promote relationship-specific investments (Hart [1995]). Second, in family firms in particular, the potential costs associated with jeopardizing either the firm's reputation or their access to financing act as deterrents to the self-serving behavior of larger shareholders (Anderson, Mansi, and Reeb [2003]). Third, in the United States, strong investor protection laws and investor awareness of the incentives associated with concentrated control make expropriating non-controlling shareholders more difficult than the theory may suggest (Adams and Ferreira [2007]). Therefore, to the extent that concentrated control enables insiders to make value-enhancing decisions or to react more quickly to environmental changes, dual-class ownership can benefit shareholders. We call this argument the *efficiency hypothesis*. The efficiency hypothesis implies that dual-class companies are likely to employ other governance mechanisms (chosen by the insiders themselves) that provide incentives to managers to exert effort and to refrain from value-expropriating actions.

It is important to clarify here that our research question is *not* whether exogenously assigning a dual-class structure (or disproportional control) to a firm is a desirable outcome. Given the incentive problems described above, such exogenous assignments are unlikely to be beneficial. Nevertheless, firms that choose dual-class structures are likely to do so due to a need for greater control, primarily by founders (DeAngelo and DeAngelo [1985]).[3] To discriminate

[2] In the remainder of the document we use the term "entrenchment" to refer to rent-seeking behavior of insiders in dual-class firms.

[3] DeAngelo and DeAngelo [1985] discuss efficiency benefits of disproportional control in the form of dual-class shares such as to avoid uninformed outside stockholders' interference, to protect managers'

between the entrenchment and the efficiency hypotheses, we assume that the decision to implement a dual-class structure is not independent of other regular decisions made by insiders. We recognize, however, that differences exist between the contracting environments of dual-class firms and those of single-class firms, and that these differences are likely to affect the decisions made by insiders in each of these firm types. To control for these differences, we employ a propensity-score-matching design to pair dual-class and single-class firms along a number of firm-specific variables that are documented as determinants of a dual-class ownership structure. This method is considered to be more robust to the misspecification that occurs when the research design assumes an incorrect functional form for the relation between controls and outcomes (Armstrong, Jagolinzer, and Larcker [2009]).

We investigate several important choices available to two classes of economic agents. First, we examine various aspects of the capital structure decisions made by the insiders in dual-class firms. Specifically, we examine level of debt, probability of issuing private debt, debt maturity, and number of financial covenants. Second, we examine institutional investors' decisions to invest in dual-class firms, as implied by the levels and types of institutional investments in these firms.

We focus on debt because different predictions arise for the relationship between disproportional control and debt-related choices under the entrenchment hypothesis versus the efficiency hypothesis. Under the entrenchment view, we expect that firms with rent-seeking insiders will be more likely to stay away from debt financing for the following reasons: to avoid control and monitoring by banks, to avoid the pressure of meeting interest payments (Fama [1980]; Jensen [1986]), and to minimize contractual restrictions (e.g., covenants that restrict capital expenditures, acquisitions, etc.) that can interfere with their actions. Under the efficiency view, on the other hand, we expect dual-class firms to employ more debt because of debt's

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investments in organization-specific investments and the protection of managerial perk consumption (which they view as an efficient arrangement between controlling and outside shareholders).

capacity to play a governance role by disciplining insiders through the reallocation of control and decision-making power should a company perform poorly (e.g., Aghion and Bolton [1992]).

Several studies argue that entrenched insiders are unlikely to choose categories of debt with short maturities because these kinds of debt are monitored more frequently than debt with long maturities (Diamond [1991]). On the other hand, Rajan and Winton [1995] argue that when there is value to private monitoring, long-term debt with protective covenants is likely to be optimal because it improves banks' incentives to exert costly monitoring. Therefore, while it is difficult to make clear predictions regarding a firm's choice of debt of longer maturity, we expect that more long-term debt in conjunction with greater covenant restrictions is unlikely to be an attractive feature for entrenched managers. In sum, under the entrenchment hypothesis, we expect insiders in dual-class firms to opt for lower levels of leverage, less private debt, and debt with fewer covenants.

In contrast, under the efficiency hypothesis, we expect dual-class firms to rely more extensively on debt financing and to opt for private debt, debt with longer maturity and more financial covenants. We base our expectations on the following arguments. First, ceteris paribus, when conflicts of interest are more severe, as in dual-class firms, insiders are likely to exploit the disciplining and signaling roles of debt and debt covenants as ways to limit actions that are potentially value expropriating.[4] We expect insiders to recognize conflicts of interest and to pre-commit against lack of effort and adverse actions by levering up their capital structure. Second, we expect dual-class firms to use private debt more extensively because private lenders are typically superior monitors, rely on tighter financial covenants, and generally exercise more control over a company in bad states of the world. Third, we expect insiders to capitalize on covenants' mitigating effects on value-expropriating actions and suboptimal investment decisions

[4] Note that entrenchment motives can also induce insiders to take on more leverage in an attempt to inflate the voting power of their equity stakes and thereby reduce the possibility of takeover attempts (Harris and Raviv [1988]; Stulz [1988]). That said, given that dual-class firms are virtually immune to hostile takeovers, firm managers are unlikely to over-lever for these reasons (Gompers, Ishii and Metrick [2008]).

(Smith and Warner [1979]). These choices by insiders effectively allocate more power to another party (i.e., lenders) to discipline and place restrictions on management should such management consume excessive private benefits and fail to deliver a certain level of performance.

Next, we investigate levels of institutional ownership (including investments by the different types of institutions) in dual-class versus single-class firms. Under the entrenchment hypothesis, we expect institutions to avoid firms whose insiders are likely to consume excessive private benefits or take ,actions that weaken the firm's competitive position and reduce value for investors. This is particularly true for investments in the inferior class of shares due to institutions' lack of power to influence corporate decision-making in such firms.[5] Further, certain institutions that have strict "prudence" standards constraining their investment decisions (such as banks and insurance companies) are more likely to avoid these stocks. The latter scenario also applies to activist institutions and institutions with longer horizons, such as pension funds and university endowments. In contrast, under the efficiency hypothesis, we expect institutions (particularly activist institutions, institutions with stricter standards of prudence, and institutions with longer horizons) to consider insider control desirable and dual-class firms as attractive investments.

For our study, we use a comprehensive sample of dual-class firms constructed by Gompers, Ishii, and Metrick [2008] for the period 1995 through 2002. Within this sample, we investigate two sources of disproportional control that accompany dual-class stock. Specifically, we examine the difference between voting rights and cash flow rights (or voting control) and the difference between board election rights and cash flow rights (or board control). Our evidence suggests that dual-class ownership and disproportional control are positively related to a firm's amount of leverage. We also find that dual-class firms are more likely to issue private debt, have significantly higher levels of long-term debt, have more financial covenants, and institutional

[5]Throughout the paper we use the term "inferior equity shares" to refer to the outside equity that does not have superior voting rights.

ownership (both in terms of fractional ownership and number of institutions). Furthermore, our evidence suggests that activist institutions with longer horizons (e.g., pension funds) and institutions with stricter standards of prudence (e.g., banks and insurance companies) invest more heavily in dual-class firms as well as in firms with greater disproportional control. Both individually and collectively, our results support the conjecture that control-enhancing mechanisms in dual-class firms are not manifestations of rent-seeking behavior.

Our study contributes to the literature on disproportional ownership structures. First, we document and provide a rationale for the relationship between dual-class ownership (including the associated control-enhancing mechanisms) and the structure of debt. The capital structure choices dual-class firms make are more consistent with an efficiency explanation than with a rent-seeking explanation. Second, we document that control-enhancing mechanisms in dual-class firms are associated with higher levels of institutional investment. Overall, the evidence adds to our understanding of control-enhancing mechanisms in dual-class firms.

The rest of our paper is organized as follows. Section 2 presents an overview of the related literature and the development of our hypotheses. Section 3 describes the data, research method, and discusses the summary statistics. Section 4 presents the multiple regressions analyses and the results, and Section 5 concludes the study.

2. Background, Research Questions, and Empirical Predictions

We begin by providing a brief overview of the existing research on dual-class firms, given its direct relevance to our research objective, and then proceed with developing our hypotheses. Adams and Ferreira [2007] present a thorough review of the empirical literature, and Burkart and Lee [2007] provide a comprehensive discussion of the theoretical literature on disproportional ownership.

2.1. Background and Prior Research

A dual-class ownership structure is probably the most straightforward way to accomplish a deviation from the "one-share/one-vote" principle (other ways include differential voting rights, pyramidal structures, and crossholdings, as well as implicit mechanisms such as takeover defenses or fiduciary voting). Not surprisingly, dual-class shareholdings are among the most widely researched control-enhancing mechanisms and are often interpreted as a manifestation of the classic agency problem between owners and managers (Partch [1987]; Jarrell and Poulsen [1988]). The separation of ownership and control in dual-class firms also leads to a conflict of interest between large shareholders and small shareholders (Amit and Villalonga [2009]), giving rise to a different type of agency problem. Zingales [1995] and Nenova [2003] document a premium for superior voting shares, which is interpreted as a proxy for the private benefits of control that large shareholders or insiders can extract. Recent studies show that, among insiders in dual-class firms, founding families are the primary beneficiaries (DeAngelo and DeAngelo [1985]; Nenova [2001]; Gompers, Ishii, and Metrick [2008]). For example, Gompers et al. [2008] find that a major determinant of dual-class status is a firm being named after a person (e.g. Wrigley or Ford). Such findings highlight the importance of the second type of agency problem mentioned above.

While the relationship between disproportional control and firm value or performance (e.g., Tobin's *q*) has received much attention in the literature, the overall results remain inconclusive. Several international studies document a negative relation between firm value and the wedge between cash flow and control rights (La Porta et al. [2002]; Claessens et al. [2002]; Lins [2003]). Other studies examine this relation in United States and find that while disproportional control via dual-class shares, as measured by a wedge between cash flow and voting rights, is associated with a lower Tobin's *q*, the result is not robust to alternative

definitions of this wedge (Amit and Villalonga [2009]).[6] Gompers et al. [2008] analyze a comprehensive list of dual-class firms in the United States from 1995 through 2002 and find only weak evidence that Tobin's *q* increases with insider cash-flow rights and decreases with insider voting rights, as the entrenchment hypothesis implies.

Another stream of literature examines stock returns around announcements of dual-class recapitalizations and unifications (e.g., Cornett and Vetsuypens [1989]; Jarell and Poulson [1988]; Dimitrov and Jain [2006]). These studies show that both unifications and recapitalizations can create, rather than destroy, value for non-controlling shareholders. These findings are not surprising given the endogenous nature of these events; that is, firms are likely to opt for unifications or recapitalizations only when these events are expected to increase firm value.

The mixed evidence of the relation between dual-class ownership and firm value may also stem from the fact that many of these firms are family firms. Prior literature suggests that family firms are likely to forgo profits in favor of controlling rents, which can lead to poor performance (Fama and Jensen [1983]; Shleifer and Vishny [1997]). On the other hand, there is evidence to suggest that family ownership and control can provide a competitive advantage (Demsetz and Lehn [1985]). Because a family's wealth is closely linked to firm performance, families have strong incentives to monitor firm managers and maximize firm value. In line with these arguments, recent research finds that, compared with non-family firms, family firms trade at a premium, have relatively higher valuations, and are associated with a lower cost of debt financing (Andersen and Reeb [2003]).[7]

To better understand the economic implications of dual-class structures, we adopt the approach suggested by Adams and Ferreira [2007] and examine whether decisions made by

[6] They also examine disproportional control through voting agreements and pyramids and find that these don't matter when control is measured as a wedge, but these mechanisms increase Tobin's *q* when control is measured as a ratio.

[7] However, prior studies find that while firms with founder-CEOs have higher valuation, those with founder-descendants as CEO have no effect or even a discount in valuation (Adams et al. [2005]; Fahlenbrach [2006]).

insiders in dual-class firms are consistent with motives of either entrenchment or efficiency. We discuss our research questions and hypotheses in the following section.

2.2 Empirical Predictions: Capital Structure Decisions

Firms are likely to choose a voting structure that is optimal for their business circumstances. An initial founder has the incentive to choose a security voting structure that maximizes value because he or she will bear the full consequences of this choice through the effect it has on the prices of the company's securities. Dual-class structures, in which insiders hold a class of superior voting shares, can be optimal for some firms (e.g., Hart [1995]). However, even if such voting rights are initially established to benefit the firm, deviations from one-share/one-vote need not be optimal in subsequent generations of management. Succeeding management can, for example, use this excess control to entrench themselves. Examples of how insiders can exploit the private benefits of control include keeping an unprofitable family-owned business, consuming perks, building empires, or making investments that reduce firm value. With the right incentives in place, however, managers can also use control to benefit the firm. Managers have inside knowledge of their business, can react quickly to economic shocks, and have incentives (such as through reputation in family firms) to make decisions that enhance firm value.

In our first set of tests, we investigate the relation between the control-enhancing mechanisms present in dual-class firms and choices related to capital structure. These choices include leverage, reliance on private debt, debt maturity, and financial covenants. Assuming that insiders with voting-control rights determine financing policy, we predict that dual-class firms will make different financing choices under the entrenchment hypothesis than under the efficiency hypothesis.[8]

[8] In fact, several empirical studies have reported that managerial entrenchment is an important determinant of corporate financial policy. See for example, Morck et al. [1988]; Berger et al. [1997].

The literature has established that debt disciplines management. An important aspect of debt financing is that, in bad states of the world, it transfers control from managers to debtholders (Aghion and Bolton [1992]). Grossman and Hart [1982] argue that higher levels of debt increase the threat of both bankruptcy and loss of control and thus provide managers the incentives to exert effort. In a similar vein, Jensen [1986] argues that fixed payments under debt contracts reduce the free cash flow problem by limiting a manager's ability to misuse corporate resources. Therefore, debt serves as a device that commits insiders to not expropriate non-controlling shareholders.

Based on the above arguments, we further argue that insiders with sizable private benefits of control are likely to avoid debtholder monitoring. Debtholders usually require direct access to inside information and can impose tight covenant restrictions on managerial actions (e.g., Nini, Smith, and Sufi [2008]). Berger, Ofek, and Yermack [1997] provide evidence in support of this argument, finding that the lack of incentives from either ownership and compensation or active monitoring is associated with lower levels of leverage. Jung, Kim, and Stulz [1996] similarly conclude that managerial entrenchment leads firms to issue equity when issuing debt would be more beneficial.

Consequently, we make the following predictions. Under the entrenchment hypothesis, we predict that dual-class firms will rely on debt financing less heavily as compared with single-class firms. In addition, we predict that entrenched managers will be likely to avoid private debt because private lenders are known to be superior monitors and exercise stringent restrictions on managerial actions (Smith and Warner [1979]; Dichev and Skinner [2002]; Nini, Smith, and Sufi [2008]). We also predict that, conditional on the presence of dual-class status, excessive voting control or board control will be associated with lower levels of debt financing, as well as with lesser private debt. On the other hand, finding evidence of greater reliance on debt financing, including on private loans, will support our prediction based on the efficiency hypothesis,

namely, that insiders use debt to signal their commitment to not engage in value-expropriating actions.

More recent studies also recognize that specific features in debt contracts, such as debt maturity, play an important role in reducing agency conflicts (e.g., Diamond [1991]; Barclay and Smith [1995]; Stohs and Mauer [1996]). This body of research generally concludes that short-term debt reduces discretionary funds and subjects managers to the more frequent scrutiny of financial markets, which in turn curbs managers' ability to engage in potentially self-serving behavior. Consistent with this view, Datta, Iskandar-Datta, and Raman [2005] find that managers with fewer equity-based incentives employ long-term debt, and Benmelech [2006] shows that entrenched managers are less likely to use short-term debt.

In contrast, Rajan and Winton [1995] argue that short-term debt can distort debtholders' incentives to monitor a firm. In essence, the use of long-term debt and the covenants associated with it increases the banks' incentives to acquire and use additional information to monitor the borrower. While short-term debt allows for more frequent monitoring, it can also give lenders too much power, which can in turn lead to excessive liquidations (Rajan and Winton [1995]; Diamond [1991]; Diamond [1993]).[9] Furthermore, insiders in dual-class firms are likely to have longer horizons (e.g., families pass on the firm to successive generations). Stein [1988; 1989] argues that shareholders with longer investment horizons are less likely to forego profitable investments, and Francis and Smith [1995] demonstrate that firms with concentrated control are both more innovative and better in the timing of long-term investment projects. To the extent that insiders in dual-class firms make longer term investments, it is not unreasonable for them to match debt maturity with their projects' horizons.

Most long-term debt will include protective financial covenants for debtholders, and we expect the importance and use of covenants to increase with the fraction of long-term debt (we

[9] In Diamond [1991; 1993], managers extract non-transferable control rents from future cash flows. Because they do not take the control rent into account, short-term creditors tend to liquidate too often, and firms therefore prefer a mix of long-term and short-term debt.

empirically verify the positive correlation between the two). On the contrary, because of its higher priority and lower risk of value expropriation, most short-term debt does not include covenants. Financial covenants give debtholders control over certain managerial actions, such as capital expenditures (Nini, Smith and Sufi [2008]), and can take away control from managers in cases of technical default. Entrenched managers are thus expected to avoid financial covenants. Therefore, under the efficiency hypothesis, we predict that dual-class firms will rely extensively on long-term debt in combination with financial covenants. In contrast, under the entrenchment hypothesis, we predict that dual-class firms will opt for fewer financial covenants.

2.3 Empirical Predictions: Institutional Investment

In our second set of analyses, we investigate the relation between institutional investment and dual-class ownership structures. Institutional investors form a large class of investors in the United States and are considered more sophisticated when it comes to making informed investment decisions. Outside investors can, in general, only purchase shares with inferior voting rights, and most of the shares with superior voting power are not traded. In cases where they are traded, shares with superior voting power are primarily held by managers and directors (Gompers, Ishii and Metrick [2008]) and thus are not likely to be available to institutions. As a result, institutional investors in dual-class firms have limited control rights, even when their fractional ownership grants them substantial cash-flow rights.

Dual-class share structures are likely to affect institutional investment for several reasons. First, if control mechanisms in dual-class firms do indeed primarily reflect rent-seeking motives, then such firms are likely to have less institutional investment. Indeed, Li, Oritz-Molina, and Zhao [2008] argue that institutional fund managers will not invest in dual-class companies if they believe these firms are likely to expropriate value from outside investors. Unlike individual investors, institutional investors are subject to prudence standards that constrain their investment decisions (Del Guercio [1996]). What's more, when it comes to dual-class firms, institutions are

unlikely to be able to influence manager's potentially value-reducing actions. Thus, under the entrenchment hypothesis, we expect to find lower levels of institutional investment in dual-class firms. In contrast, under the efficiency hypothesis, to the extent that greater insider control can promote growth and economic value, we expect to find either no difference in or perhaps higher levels of institutional investment in dual-class as compared with single-class firms.

We also expect institutional investment to vary by type of institution owing to differences in fiduciary or prudence responsibilities, investment objectives, and horizons. Institutions with long horizons and strong fiduciary responsibilities will more likely engage in shareholder activism and be sensitive to the implications of insider control in dual-class firms. Del Guercio [1996] provides evidence that while the investment behavior of banks is governed more strictly by the "prudent-man rule," many non-bank institutions, such as insurance companies and mutual funds, also consider prudence laws to varying degrees. Pension funds and university endowments, another category of long-term institutions with strong fiduciary responsibilities, are also likely to avoid investing in dual-class firms if they believe that insiders are primarily motivated by entrenchment motives. On the other hand, investment companies and investment advisors are usually short-term investors that do not engage in shareholder activism, and these types of institutions are therefore likely to be less sensitive to insider control rights. Consequently, we expect banks, pension funds and university endowments to have lower (higher) investments in dual-class firms as compared to single-class firms under the entrenchment (efficiency) hypothesis.

Note that one can nevertheless make several arguments as to why dual-class share structures are unlikely to affect institutional investment. First, the empirical evidence on performance differences between dual- and single-class firms is largely inconclusive, and prior studies have documented that institutional investment decisions are primarily driven by past stock returns (Partch [1987]; Lehn, Netter, and Poulsen [1990]; among others). Second, given the stringent security laws that protect shareholder rights in the United States (La Porta et al. [1997]),

it is not clear that controlling shareholders in U.S. dual-class firms can easily expropriate outside shareholders.

Because our analysis overlaps with that of Li, Oritz-Molina, and Zhao [2008] - the only other paper that examines the relation between institutional investment and dual-class firms - we need to clarify the major difference between the two papers. We are interested in the level of institutional investment in classes of shares that institutions can freely trade, most of which are inferior classes (i.e., those without superior voting rights). Therefore, our analysis of institutional ownership is carried out at the firm-class level (i.e., institutional ownership is the percentage owned of the total shares outstanding in that class).[10] In contrast, Li, Oritz-Molina, and Zhao [2008] examine the fraction of institutional investment by pooling across superior and inferior share classes; that is, they calculate institutional ownership by dividing shares owned by the total number of shares in all classes (including non-traded classes). Because the incentives for and implications of institutions' investments in superior shares are likely to differ from those of their investments in inferior shares, we focus our research on institutions' investments in tradable inferior shares. Our analysis also differs from that of Li et al. in that we examine another measure of institutional investment, that is, the number of institutions investing in dual-class stocks.

3. Data, Research Method, and Descriptive Statistics

3.1. Data

We begin with a comprehensive dual-class dataset, built and generously provided by Gompers, Ishii, and Metrick [2008], that covers the period 1995–2002. The most common dual-class structure is the 10:1 structure, wherein the superior class has ten votes per share and the inferior class has one vote per share. Gompers, Ishii, and Metrick [2008] find that, on average, the insiders of dual-class firms own the majority of voting rights (about 60 percent) and the minority of cash-flow rights (about 40 percent). Nearly all of these voting rights come from the superior

[10] As a sensitivity check, we repeat our analysis by restricting to the main class of shares.

voting stock; the inferior voting stock provides less than fifteen percent of the insiders' voting rights. While details on the sample and its construction are available in Gompers et al. [2008], we nevertheless offer a brief discussion of the dual-class sample. First, Gompers et al. construct a list of possible members—the "candidate sample"—and check the SEC filings for each candidate to determine whether it is indeed a dual-class firm. They then build the candidate sample using data from the Securities Data Company (SDC) (as amended by Jay Ritter), Compustat, CRSP, and the Investor Responsibility Research Center (IRRC).[11] The final source of the candidate sample comes from a comparison of Compustat and CRSP. For each firm-year in Compustat, Gompers et al. match the monthly CRSP file for the month corresponding to the end of the fiscal year. They then compare the shares outstanding field in CRSP with the common shares outstanding field in Compustat. Because CRSP counts only those shares outstanding for a particular stock issue and Compustat counts all shares for any class of common stock, a difference between these measures likely indicates the existence of multiple classes. Thus, if these two share counts differ by more than one percent, Gompers et al. add that company-year to the candidate universe. To obtain the final list of dual-class firms (i.e., the "dual-class sample"), all trusts, closed-end funds, ADRs, units, and REITs are eliminated. Following past literature on this topic, Gompers et al. refer to the proxy statements and/or 10Ks to get information on share ownership for each director, as well as for all officers and directors collectively (i.e., for the "insiders"). Because these disclosures provide separate entries for the holdings in each class, they can be used to definitively confirm the dual-class status of the final sample.

We draw the rest of our data from several sources. We use Compustat to measure firm-level capital structure variables. We construct a broad set of control variables based on the

[11] The SDC candidates are taken from the Global New Issues Database, which tracks corporate new issues activity since 1970 and flags those issues that have a separate class of common stock. The SDC list is supplemented with amendments from Jay Ritter's website. To find companies with multiple traded share classes, Gompers et al. search the CRSP database for issues with identical six-digit CUSIPs but different two-digit extensions. A further group of candidates are identified from firms listed as dual-class in the IRRC's Corporate Takeover Defenses texts from 1990 to 2002 (1990, 1993, 1995, 1998, 2000, and 2002).

intersection of CRSP and Compustat observations over the dual-class sample period. We use Thomson 13F (CDA/Spectrum S34) data to construct our institutional ownership variables and categorize the types of institutions following CDA/Spectrum's classification: 1) banks, 2) insurance companies, 3) investment companies, 4) independent investment advisors, and 5) others, which include pension funds, university endowments, and foundations. We measure institutional ownership quarterly at a security (i.e., firm-class) level and obtain the number of analysts from I/B/E/S. For debt contract-level data, we use Dealscan. We obtain loan characteristics from the credit agreements of companies in our sample. The initial dual-class sample comprises 4,495 dual-class firm-year observations, and the initial single-class sample consists of all other firms with data available on Compustat and CRSP over our sample period.[12]

3.2 Research Method

Most studies on dual-class firms deal with the relation between dual-class stock and firm value or performance (e.g., Tobin's *q*), and the endogeneity of ownership structures becomes a central issue. Demsetz and Lehn [1985] propose that ownership structures of different firms vary systematically, in ways that are consistent with firm value maximization, owing to differences in the contracting environment. Consistent with this proposal, Himmelberg et al. [1999] find that managerial ownership is strongly influenced by both observable firm characteristics and unobservable firm heterogeneity (i.e., firm fixed effects) in the contracting environment. Once they control for observable firm characteristics and firm fixed effects, they find that managerial ownership has no effect on firm value.

We acknowledge that differences in the contracting environments of dual- and single-class firms that can influence capital structure choices and institutional investment are likely to exist. To address such differences, we follow Armstrong, Jagolinzer, and Larcker [2009] and use

[12] We also compared the summary statistics of the dual-class firms with a matched single-class sample, where this matching by year, industry, and size. Other than size, most of the other differences in firm characteristics were similar to those reported.

a propensity-score matched-pair research design that matches a treatment dual-class firm with a control single-class firm. The resulting control group is observationally equivalent with respect to variables that determine the choice of dual-class structure. Following the model in Gompers, Ishii, and Metrick [2008], we perform an ordered logistic propensity-score regression on the determinants of dual-class firms. Specifically, we estimate the following ordered logistic propensity-score model for all firms in the year of their IPO (as proxied by their first appearance in Compustat):

$$Prob(DUAL\_CLASS)_{jt} = \alpha_0 + \alpha_1 \times MEDIA_{jt} + \alpha_2 \times STATELAW_{jt} + \alpha_3 \times SALESRANK_{jt} + \alpha_4 \times PROFITRANK_{jt} + \alpha_5 \times \%FIRMS_{jt} + \alpha_6 \times \%SALES_{jt} + \alpha_7 \times SALES / REGIONSALES_{jt} + \alpha_8 \times SIZE_{jt} + \alpha_9 \times R\&D_{jt} + \alpha_{10} \times FAMILY_{jt} + INDUSTRY\_DUMMIES + YEAR\_DUMMIES + \varepsilon_{jt}$$

We define each of the above variables in Appendix I. Similar to Gompers et al., we also find that the variables *MEDIA*, *SALESRANK*, *PROFITRANK*, *%SALES*, and *FAMILY* are significantly related to the probability that a firm will choose a dual-class ownership structure.[13] In addition, we find that *SALES/REGIONSALES* is also significant. We also include firm size (log of total assets) and research and development expense as additional variables to control for initial growth potential. We further include the 48 industries designated by Fama and French [1997] and year dummies in the above model. The pseudo R-square is 17%. We do not include book-to-market ratio as the data on market values are unavailable for many of the firms at the time of their IPO.

We form matched pairs by identifying those pairings of dual-class firms and single-class firms that yield the smallest differences in propensity-score (i.e., the most similar observed contracting environments) but the largest differences in ownership structure (i.e., dual-class versus single-class). This process yields 673 matched firm-pairs over the sample period. We acknowledge the existence, however, of unobservable characteristics, such as the manager's knowledge or need for control, which are likely to affect each firm's choice of ownership

[13] For brevity's sake, these results are not reported, but they are available on request.

structure. In the next section we present and discuss the summary statistics of the dependent and independent variables for both the dual-class sample and the matched sample of single-class firms.

3.3 Summary Statistics

Table 1 reports descriptive statistics for our sample firms. We define all variables in detail in Appendix I. Panel A compares dual-class firms with the propensity-score matched sample of non–dual class firms (i.e., the "single-class sample"). We present the mean, median, and standard deviations for the firm, capital structure, and institutional investment characteristics and test for significant differences between the classes. We indicate the statistical significance in means (medians) across two classes by asterisks following the mean (median) value for single-class firms. Compared with single-class firms, dual-class firms have fewer growth opportunities, distribute lesser dividends (only the median difference is significant), are less profitable (only the median difference is significant), and have lower levels of return volatility and analyst coverage. For the dual-class sample, we hand-collect data on founders or co-founders who are actively involved in the firm's management (as proxied by the founder or co-founder being the CEO of the firm and/or being a member of the board of directors). We find that the median dual-class firm has an active founder or co-founder.

Univariate comparisons of the capital structure variables yield the following results. We find that dual-class firms are more levered than single-class firms, with significant differences in both mean (0.22 vs. 0.19 for book leverage and 0.18 vs. 0.15 for market leverage) and median (0.19 vs. 0.16 for book leverage and 0.12 versus 0.09 for market leverage) leverage. Compared with single-class firm, dual-class firms also have significantly lower proportions of current debt (0.52 versus 0.58 in means; 0.47 versus 0.55 in medians) and significantly higher proportions of long-term debt (0.35 versus 0.31 in means; 0.35 versus 0.30 in medians). Dual-class firms also have longer contract maturities when measured at the facility level (44.20 versus 39.60 months in

means; the median differences are not significant, both being 36 months), a significantly higher probability of having at least one active private loan (0.55 versus 0.49 in means; 1.00 versus 0.00 in medians), and, judging by the mean (2.12 versus 1.91), rely on more financial covenants than single-class firms. Dual-class firms also have higher levels of institutional investment across all types of institutions than single-class firms. The average (median) fraction of institutional investment in dual-class firms is 0.41 (0.41), while the average (median) fraction of institutional investment in single-class firms is 0.33 (0.28) and both of these differences are significant. We obtain an analogous set of results for the number of institutions. In terms of both means and medians, banks, insurance companies, investment advisors, and pension funds and university endowments have significantly higher investments in dual-class than in single-class firms.

In Panel B of Table 1, we present the summary statistics on the separation between voting and cash flow rights, and board election and cash flow rights for the sample of dual-class firms. The average (median) insider ownership for the sample is 39% (36%), and the average (median) voting control and board control is 21% (20%) and 22% (21%), respectively. In Table 2, we present the correlations between these control mechanisms, insider cash flow ownership and the above firm characteristics. The Pearson correlations between the control mechanisms and the leverage variables and institutional investment are generally consistent with the results presented in Table 1, Panel A.[14] Specifically, higher levels of voting control and board control are associated with significantly higher levels of leverage (both book and market; however, book leverage is significantly correlated with voting control only), a higher likelihood of having private loans, greater long-term debt, and more financial covenants (the latter is significant for voting control only). Higher levels of voting control are also significantly correlated with fractional institutional ownership, number of institutional investors, as well as investment by the five types of institutions.

[14] The Spearman correlations (not reported) are very similar to the Pearson correlations. For brevity's sake, we only report the correlations for the dependent variables and for select independent variables. All reported significances are at less than the 1% level.

4. Empirical Analyses and Results

We now test our hypotheses in a multiple regression setting. First, we discuss the relation between capital-structure choices and disproportional control mechanisms in dual-class firms. Next, we proceed with our analysis of institutional investment. The dependent and independent variables used in our tests are described in Appendices I and II.

4.1 Dual-Class Firms and Capital Structure Decisions

4.1.1 Research Design

We begin by investigating the association between leverage, the presence of dual-class ownership and the control enhancing mechanisms in dual-class firms. We estimate the following regression:

$$\begin{aligned} LEVERAGE_{j,t} &= \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times DIV_{jt} \\ &+ \alpha_5 \times ROA_{jt} + \alpha_6 \times ASSET\_INT_{jt} + \alpha_7 \times TAX\_CRED_{jt} + \alpha_8 \times R\&D_{jt} + \alpha_9 \times SG\&A_{jt} \\ &+ \alpha_{10} \times STD\_RET_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \varepsilon_{jt} \end{aligned} \quad (1)$$

where *LEVERAGE* is defined as either book leverage (*LEV_BK*) or market leverage (*LEV_MKT*), and the control variables are chosen based on determinants of leverage used in prior studies (e.g., Berger, Ofek, and Yermack [1997]; Frank and Goyal [2005]). The *DUALCLASS_VARIABLE* stands for either a dummy variable that equals 1 if the firm is a dual-class firm, and 0 otherwise (*DUAL_CLASS*), or the degree of separation between ownership and control in dual-class firms. In the latter case, we limit our sample to dual-class firms. We focus on two sources of control: the traditional difference or wedge between voting and cash flow rights (i.e., voting control), and the wedge between board election rights and cash flow rights (i.e., board control).[15] Board control enhances insider control by allowing holders of dual-class stock to elect a fraction of the board of

[15] We measure the control mechanisms as the difference between voting rights and cash flow rights, and the difference between the board election rights and cash flow rights. However, in unreported tests, we repeat the above regressions by using the ratio of voting rights and cash flow rights (*RATIO_VOTE_OWN*) and the ratio of board election rights and cash flow rights (*RATIO_BD_OWN*) to address the potential concern that the results are sensitive to the functional form of the control mechanisms. All of our results are qualitatively unchanged on using this alternative specification.

directors that exceeds their vote as well as their share ownership.[16] We examine the two wedges because the capital structure is likely to vary with the extent of disproportional control from both sources enjoyed by the insiders.

The entrenchment hypothesis predicts that, to minimize the additional monitoring by lenders, dual-class firms (and firms with greater voting and board control) will opt for lower levels of leverage in their capital structure. We therefore predict, under this hypothesis, negative coefficients for *DUAL_CLASS*, *VOTE_OWN*, and *BD_OWN*. On the contrary, if insiders voluntarily opt for more debt, as is consistent with the efficiency hypothesis, we predict positive coefficients for the above variables.

To control for firm attributes that are likely to influence leverage, we include firm size (*SIZE*), growth opportunities (*BTM*), dividends declared (*DIV*), volatility of returns (*STD_RET*), and profitability (*ROA*). Following Berger, Ofek, and Yermack [1997], we control for non-debt tax effects by using the ratio of investment tax credits over total assets (*TAX_CRED*), asset intensity by the ratio of net property, plant and equipment over total assets (*ASSET_INT*), and asset uniqueness by two variables, namely, research and development expense over sales (*R&D*) and selling, general, and administrative expenses over sales (*SG&A*). We also include the age of the firm (*FIRM_AGE*) as a control.

In the regressions with the two control mechanisms (*VOTE_OWN* and *BD_OWN*), we also include the cash flow ownership of insiders (*INSIDER_OWN*) consistent with prior studies (Amit and Villalonga [2008]; Gompers et al. [2008]). In addition, given that the excess control insiders enjoy is likely to have different implications depending on whether the original founder or co-founder is still active, we control for the presence of the founder or co-founder as the CEO or a member of the board of directors (*ACTIVE_FOUNDER*). We include these variables as controls in all subsequent regressions within dual-class firms.

[16] Amit and Villalonga [2008] is the only other paper that examines the relation between board election rights in addition to other common forms of control and firm value, arguing that the effects are likely to be sensitive to the source of the control.

Next, we examine whether dual-class firms, and the control mechanisms, are associated with the likelihood of having private debt. We model the probability of having an active bank loan by estimating the probit regression:

$$\begin{aligned}\text{Prob}(PVT)_{j,t} &= \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} \\ &+ \alpha_4 \times ROA_{jt} + \alpha_5 \times LEV_{jt} + \alpha_6 \times ASS\_INT_{jt} + \alpha_8 \times FIRM\_AGE_{jt} + \varepsilon_{jt}\end{aligned} \quad (2)$$

where *PVT* is a dummy variable that equals 1 if there exists at least one bank loan in a particular year, and 0 otherwise. For the variables *DUAL_CLASS*, *VOTE_OWN*, and *BD_OWN*, we predict negative coefficients under the entrenchment hypothesis and positive coefficients under the efficiency hypothesis. Our control variables include firm size, book to market, return on assets, leverage, and asset intensity (Rauh and Sufi [2009]). In addition to these standard control variables, we also include the age of the firm (*FIRM_AGE*).

We then examine whether a significant relation exists between control mechanisms in dual-class firms and long-term debt by estimating the regression:

$$\begin{aligned}LT\_DEBT_{jt} &= \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times DIV_{jt} \\ &+ \alpha_5 \times ROA_{jt} + \alpha_6 \times ASSET\_INT_{jt} + \alpha_7 \times TAX\_CRED_{jt} + \alpha_8 \times R\&D_{jt} + \alpha_9 \times SG\&A_{jt} \\ &+ \alpha_{10} \times STD\_RET_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \varepsilon_{jt}\end{aligned} \quad (3)$$

where the dependant variable is the fraction of long-term debt (*LT_DEBT*) in total liabilities. As in the previous case, we repeat the regressions using the *DUAL_CLASS* dummy variable as well as the two control mechanisms in dual-class firms (i.e., *VOTE_OWN* and *BD_VOTE*). As we discussed in the hypotheses development section, it is difficult to predict, in isolation, the direction of the coefficients for *DUAL_CLASS* and the two control mechanisms, *VOTE_OWN* and *BD_VOTE*, under either the entrenchment or the efficiency hypothesis. However, based on the theory developed in Rajan and Winton [1995], one prediction emerges: more long-term debt in conjunction with more financial covenants (discussed next) is consistent with the efficiency

hypothesis. We base all of our control variables in equation (3) on prior literature (Wittenberg-Moerman [2009]; Barclay and Smith [1995]).[17]

Finally, we examine whether significant associations exist between dual-class ownership and the number of financial covenants in private debt contracts by estimating the regression:

$$\begin{aligned} COVENANT_{j,t} &= \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times TERM\_SPREAD_{jt} \\ &+ \alpha_3 \times CREDIT\_SPREAD_{jt} + \alpha_4 \times FACILITY\_AMT_{jt} + \alpha_5 \times MATURITY_{jt} \\ &+ \alpha_6 \times NONFIN\_COV_{jt} + \alpha_7 \times SIZE_{jt} + \alpha_8 \times BTM_{jt} + \alpha_9 \times ROA_{jt} \\ &+ \alpha_{10} \times ASSET\_INT_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \varepsilon_{jt} \end{aligned} \quad (4)$$

where *FIN_COV* is the number of financial covenants present in private debt contracts. As discussed earlier, we expect negative (positive) coefficients for *DUAL_CLASS*, *VOTE_OWN*, and *BD_OWN* under the entrenchment (efficiency) hypothesis. Consistent with prior studies (Frankel and Litov [2007]), we control for macroeconomic factors, loan features, and firm characteristics. We obtain the macroeconomic variables from the Federal Reserve Economic Data (FRED) website. The variable *TERM_SPREAD* is the yield difference between the 10-year treasury bonds and the 2-year treasury bonds, and *CREDIT_SPREAD* is the yield difference between AAA corporate bonds and BAA corporate bonds. We include controls for loan size, loan maturity, and number of non-financial covenants. Among the firm characteristics, we control for firm size, book to market, profitability, asset intensity, and the age of the firm.

It is important to acknowledge here that the standard problem with establishing causality, i.e., that a dual-class ownership structure leads to differences in choices of capital structure, applies to our study as well. However, we note that most firms in our sample have had dual-class structures in place since their IPOs, and these structures have undergone little variation over

[17] We repeat the above regression by using the maturity of debt at the facility level (measured as the logarithm of the number of months between the facility's issue date and when the facility matures) and obtain results similar to the reported long-term debt results. These additional results are not reported for brevity.

time.[18] Thus, the reverse causation argument, which implies that financing choices are what affect the choice of dual-class structure, is less likely to be an issue in our setting. We employ a propensity-score matching research design to control for differences in the contracting environments of dual- and single-class firms. We also follow Cronqvist and Nilsson [2003] and re-include in the regressions time dummies to control for general changes in market conditions and industry dummies to account for variations in ownership structures across industries. However, due to the lack of within-firm variation in the dual-class sample, we cannot include firm fixed effects in our regressions. We present the results of the various aspects of capital structure decisions in the following sub-sections.[19]

4.1.3 Results: Leverage

Table 3 presents the results of the regression with leverage as a dependent variable. The first two columns provide estimates for the relation between book leverage and market leverage and the dual-class indicator variable, while the following four columns describe the relation between book leverage and market leverage and the excess voting control and board control over economic ownership. The coefficient on the dummy *DUAL_CLASS* is positive and significant for both book leverage and market leverage. When we consider the individual sources of control, we find that the wedge between voting and cash flow rights is positive and significantly associated with both book leverage and market leverage. Board control is also positively associated with book and market leverage, but these results are not statistically significant. This evidence, that dual-class firms—and among dual-class firms, those firms with greater voting control of insiders —are likely to choose greater levels of debt, does not support the entrenchment explanation for dual-class ownership. On the contrary, all else equal, the significantly higher levels of debt

[18] Other than 159 firms, the rest of the firms had the dual class status consistently over the sample period. Repeating all our analyses by eliminating these 159 firms that had dual class unifications over the sample period did not materially alter our results.

[19] While we present the results that compare the dual-class firms with all propensity matched single-class firms over the sample period, our results are robust to using the full sample of single-class firms in Compustat.

support the theory that in such firms debt likely serves as a mechanism insiders use to signal their commitment to not expropriate current and potential investors.

Our results for the control variables are generally consistent with prior studies (Berger, Ofek, and Yermack [1997]). In general, less profitable firms have, on average, significantly higher levels of leverage. The proxy for growth, *BTM*, is significantly positively associated with market leverage, which implies that firms with fewer growth opportunities have higher levels of leverage. However, our results for book leverage have the opposite sign. As is generally consistent with prior studies, we find that asset intensity is positive and significant, the variable representing non-debt tax effects is negative and significant, and the two variables for asset uniqueness, *R&D* and *SG&A*, are both negative and significant. Contrary to expectations, however, firm size is negative and generally significant. Note that the variables representing firm size (*SIZE*) and research and development expenditures (*R&D*) are significant in spite of their inclusion in the propensity-score model.[20] Sample firms with a higher variance of stock returns use more leverage. In addition, for the dual-class sample, the age of the firm (*FIRM_AGE*) and the presence of an active founder (*ACTIVE_FOUNDER*) are not significantly associated with the level of leverage.

4.1.4 Results: Private Debt

We present the results of the probit analysis for private debt in Table 4. We find that dual-class firms are significantly more likely than single-class firms to have at least one bank loan. Of the dual-class firms, those firms with greater voting control and board control are more likely to have a bank loan, although the result is statistically significant in case of board control only. Given that private loans are more likely to be strictly monitored, have more restrictive covenants, and be subject to greater control by banks, insider entrenchment is unlikely to explain

[20] Excluding these two variables did not significantly alter the results; however, we kept them in the model due to their statistical significance. We also repeated the analyses by including the variable for family firms, *FAMILY*; this also did not alter the results. The *FAMILY* variable was not significant, and we did not include it in the reported results because we include it in the propensity-score model.

this result. On the other hand, the choice by insiders to have more private loans likely indicates their commitment to not engage in opportunistic actions.

For both the dual-class sample and the matched dual-class and single-class sample, we find that larger firms are more likely to have private debt. As in Rauh and Sufi [2009], we find that profitable firms are more likely to have bank loans. We find a negative and significant association with book to market, which suggests that firms with more growth opportunities are also more likely to have a private bank loan. One explanation for this finding might be that because high growth firms are likely to have high agency costs, they are more likely value the additional monitoring a bank provides (Bolton and Freixas [2000]). Finally, we find that larger firms and firms with more leverage are also more likely to have a private loan.

4.1.5 Results: Long-Term Debt

Table 5 presents the results for long-term debt. As before, the first column is based on the matched dual-class and single-class sample, while the next two columns present the results for voting control and board control in dual-class firms. We find that dual-class firms have significantly higher fractions of long-term debt. Of the dual-class firms, those firms whose insiders have higher levels of voting and board election control also have higher fractions of long-term debt. While several studies have argued that higher levels of long-term debt likely indicate manager entrenchment (Datta, Iskandar-Datta, and Raman [2005]), several of the theories we discussed in Section 2 suggest otherwise. In particular, our findings on financial covenants (discussed below in sub-section 4.1.6) suggest that higher levels of long-term debt in dual-class firms indicate efficiency, rather than insider entrenchment.

Among the control variables, we find that, in general, larger, lower growth, and firms paying lesser dividends have significantly more long-term debt. Our results for profitability, as represented by the return on assets (*ROA*), are mixed; in the matched sample of dual-class and single-class firms, we find that more profitable firms have lower levels of long-term debt, but

these results reverse in the case of the two control mechanisms. Firms with more tangible assets, lesser research and development expenses and selling, general and administrative expenses have higher levels of long-term debt (these results are significant for the matched sample of dual-class and single-class firms only). In general, firms with lower tax credits and lower levels of volatility have more long-term debt. Finally, for the dual-class sample, firms with an active founder or co-founder have significantly more long-term debt.

4.1.6 Results: Financial Covenants

Table 6 presents the results related to financial covenants. We find that, compared with single-class firms, dual-class firms have a higher number of financial covenants. Within the dual-class sample, firms with higher levels of board control tend to have more financial covenants. In combination with the evidence on long-term debt, we interpret these results as supporting the efficiency hypothesis. The relation between financial covenants and voting control is positive, but statistically insignificant.

The evidence on firm characteristics suggests that smaller firms have more financial covenants. We find that firms with higher growth opportunities and less profitable firms have fewer covenants. In the dual-class sample, we find that firms with higher facility amounts are more likely to rely on covenants, which is consistent with the result that more leverage is related to more covenants. While we find a positive relation between the maturity of the facility and the number of covenants, this relation is not significant in the regressions with the control mechanisms. The results with respect to other variables are generally insignificant.

In summary, our evidence indicates that both dual-class firms and firms with a greater separation between voting rights and board election rights and economic ownership are associated with significantly higher levels of leverage, a greater probability of having private debt, more long-term debt, and more financial covenants. Collectively, these results support the efficiency

hypothesis. In the next section, we corroborate our inference by examining institutional investors and their preference for investing in dual-class stocks.

4.2 Dual-Class Firms and Institutional Investment

We examine whether dual-class firms, and the sources of control in such firms, are significantly associated with decisions made by an independent group of economic agents, namely, institutional investors. Understanding institutions' preferences for investing in firms with an extreme form of governance is likely to shed light on the economic implications of these governance structures. A significant positive (negative) association suggests potential value-improving (value-reducing) effects of control mechanisms in dual-class firms. We estimate the regression:

$$\begin{aligned} &INSTITUTIONAL\_INVESTMENT_{jt} = \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} \\ &+\alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times DIV_{jt} + \alpha_5 \times ROA_{jt} + \alpha_6 \times PRICE_{jt} + \alpha_7 \times RETURN_{jt} \\ &+\alpha_8 \times TURNOVER_{jt} + \alpha_9 \times STD\_RET_{jt} + \alpha_{10} \times S\&P500_{jt} + \alpha_{11} \times ANALYST_{jt} \\ &+\alpha_{12} \times FIRM\_AGE_{jt} + \varepsilon_{jt} \end{aligned} \quad (5)$$

where the dependant variable is the fraction of institutional ownership in a firm (*INST_FRAC*), the natural logarithm of the number of institutional investors in a firm (*L_#INST*), or each of the five types of institutional investors (*BANKS*, *INSURANCE COMPANIES*, *MUTUAL FUNDS*, *INVESTMENT ADVISORS* and *PENSIONS AND OTHER*). We run regression (5) for the sample of dual-class and matched single-class firms, as well as for the sample of dual class firms only. In the latter case, we replace the *DUAL_CLASS* dummy variable with the degree of voting control (*VOTE_OWN*) and board control (*BD_OWN*). We control for firm and stock characteristics that were previously shown to determine institutional investment (Gompers and Metrick [2001]; Li, Oritz-Molina and Zhao [2008]).

Table 7, Panel A presents the results for the matched sample of dual-class and single class firms, and Table 7, Panel B presents the results for the two control mechanisms within the dual-class sample. Because the results for fraction of ownership and number of institutions are similar,

we discuss only the results for *INST_FRAC*, pointing out any differences from the results for *L_#INST*. We find that, compared with single-class firms, dual-class firms have significantly higher levels of institutional investment. Of the dual-class firms, those firms with higher levels of both voting control and board control have significantly higher levels of institutional investment. While this finding is inconsistent with the evidence presented in Li et al. [2008], as discussed in Section 2, their finding that institutional investment is lower in dual-class firms is likely to be driven by how they measure institutional ownership. Our results on the positive association between dual-class stock and institutional investment also hold when we employ the number of institutions investing in dual-class firms as a measure of institutional investment. Our finding that institutions invest more heavily in the inferior shares of dual-class firms than of single-class firms (which is also increasing in the degree of disproportionate control) suggests that the decisions taken by the controlling insiders are perceived by institutions as warranted.

Among the types of institutions, we document that insurance companies, investment advisors, and pension funds and university endowment invest significantly more in dual-class firms than in single-class firms (see Table 7, Panel A). Within the dual-class sample (see Table 7, Panel B), while we find that investment advisors and pension funds and university endowments continue to exhibit significantly higher investments in firms with higher levels of voting and board control, in this case, we find that banks and mutual funds also exhibit significantly higher investments in these firms. Collectively, this evidence indicates that institutions, including activist types (such as pension funds) and those with longer horizons and stricter prudent laws (such as banks and insurance companies), invest more heavily in dual-class firms with higher levels of voting and board control than in single-class firms. This further reinforces our inference that greater control by insiders in dual-class firms is not associated with value destruction, as reflected in the investment choices of institutional investors.

Our results for the control variables generally conform to those documented in prior studies. In general, institutional investment is significantly higher in firms with higher stock

prices, lower prior-year returns, lower levels of return volatility, higher levels of turnover, greater profitability, greater analyst coverage, as well as in older firms that are not part of the S&P 500 index. With the exception of turnover and return volatility, these results generally hold for the dual-class sample as well.

5. Conclusion

We investigate whether dual-class ownership and the separation of insiders' voting rights and board election rights from cash flows rights in dual-class firms are related to both the capital structure choices controlling insiders make and the investment choices non-controlling institutional investors make. We aim to understand whether various aspects of capital structure choices are consistent with insider entrenchment, on the one hand, or value enhancing decisions, on the other. In support of the efficiency hypothesis, we document that, compared with the propensity-matched sample of single-class firms, dual-class firms are associated with higher book and market leverage. Additionally, we find that, compared with single-class firms, dual-class firms are more likely to have private loans outstanding, have significantly higher levels of long-term debt, and rely more extensively on financial covenants. Further, we document that dual-class firms have significantly higher levels of institutional investment (including by institutions that are more activist, have longer horizons, and have stricter prudence laws). Collectively, our results support the argument that, on average, control mechanisms in dual-class firms are associated with insiders taking actions that enhance firm value.

Thus far, the literature on the overall implications of disproportionate control has been inconclusive. We contribute to this literature by providing evidence in support of the conjecture that, on average, control-enhancing mechanisms in dual-class firms serve as an efficient governance choice, rather than insiders' attempts at rent-seeking behavior. Moreover, our evidence lends support to the idea that controlling insiders in dual-class firms use debt financing as a mechanism for minimizing the possibility of ex-post opportunism.

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APPENDIX I: DESCRIPTION OF VARIABLES FOR ALL FIRMS

Category	Description of Variable (*Name*)	Measurement
Firm Characteristics	Existence of dual-class stock in a firm. (*DUAL_CLASS*)	A dummy variable that equals 1 if a firm has dual-class stock ownership structure, and 0 otherwise.
	Size of the firm. (*SIZE)*	The natural logarithm of the market capitalization of the firm, which is the product of the number of shares outstanding and year's closing price per share.
	Growth opportunities for the firm. (*BTM*)	The book value of equity divided by the market value of equity.
	Dividends declared by the firm. (*DIV*)	The ratio of common dividends declared divided by market capitalization.
	Asset intensity. (*ASSET_INT*)	The ratio of total net property, plant, and equipment divided by total assets.
	Asset uniqueness. (*R&D*)	The ratio of research and development expenses divided by sales.
	Asset uniqueness. (*SG&A*)	The ratio of selling, general, and administrative expenses divided by sales.
	Capital expenditures. (*CAPEX*)	The ratio of capital expenditures divided by sales.
	Non-interest tax shields. (*TAX_CRED*)	The ratio of investment tax credits divided by total assets.
	Stock return volatility. (*STD_RET*)	The volatility of monthly stock returns over the prior year.
	Age of the firm. (*FIRM_AGE*)	The number of years since the first year the borrower has data on CRSP/Compustat merged database.
	Operating performance of the firm. (*ROA*)	The operating income before depreciation divided by the firm's average total assets, adjusted for the industry as measured by the two-digit SIC code.
	Family firm. (*FAMILY*)	A dummy variable that equals 1 if a firm’s name has a person’s name in it, and 0 otherwise.
	Presence of an active founder or co-founder. (*ACTIVE_FOUNDER*)	A dummy variable that equals 1 if the founder or co-founder is the CEO or a member of the board of directors, and 0 otherwise.
	Stock returns. (*RETURN*)	The average monthly stock returns over the prior year.
	Share turnover. (*TURNOVER*)	The ratio of trading volume to the number of shares outstanding at the end of the prior year.
	Share price. (*PRICE*)	The logarithm of closing price at year-end.
	Number of analysts. (*ANALYST*)	The logarithm of the number of analysts covering the firm.
	S&P index membership. (*S&P500*)	A dummy variable that equals 1 if the firm is in the S&P 500 index, and 0 otherwise.

APPENDIX I: DESCRIPTION OF VARIABLES FOR ALL FIRMS (Cont.)

	Media industry. (*MEDIA*)	A dummy variable that equals 1 if the firm is in the Media industry, and 0 otherwise. Media companies are those belonging to SIC codes 2710-11, 2720-21, 2730-31, 4830, 4832-33, 4840-41, 7810, 7812 and 7820.
	State takeover laws. (*STATELAW*)	An index of state takeover laws defined in Gompers, Ishii, and Metrick (2003) from the firm's state of incorporation in the previous year.
	Percentile of sales. (*SALESRANK*)	The firm's percentile of sales in the first year it appeared in Compustat in the distribution of all other firms new to Compustat.
	Percentile of income. (*PROFITRANK*)	The firm's percentile of income before extraordinary items available for common in the distribution of all other firms new to Compustat.
	Percentage of firms in the same region. (*%FIRMS*)	The percentage of firms located in the firm's region in the year prior to its first appearance in Compustat relative to all firms in Compustat that year. Region is defined as a metropolitan area or division when one exists, and a county otherwise.
	Percentage of sales in the same region. (*%SALES*)	The percentage of all Compustat sales by firms located in the firm's metropolitan area or division when one exists, and a county otherwise, in the year prior to its first appearance in Compustat.
	Sales proportion to regional sales. (*SALES/REGIONSALES*)	The firm's sales divided by total sales in the firm's region in its first year appearing in Compustat.
Leverage Variables	The book leverage of the firm. (*LEV_BK*)	The total liabilities held by the firm divided by the book value of assets.
	Market leverage of the firm. (*LEV_MKT*)	The total liabilities held by the firm divided by the market value of equity plus book value of liabilities.
	Amount of short-term debt held by the firm. (*ST_DEBT*)	Current liabilities divided by total liabilities.
	Amount of long-term debt held by the firm. (*LT_DEBT*)	The total long-term debt held by the firm divided by total liabilities.
	Financial covenants. (*FIN_COV*)	The number of financial covenants at the package level.
	Private debt held by the firm. (*PVT*)	A dummy variable that equals 1 if the firm has at least one active bank loan outstanding, and 0 otherwise.
	Number of lenders. (*#LENDERS*)	The number of lenders in the syndicate.
	Term spread. (*TERM_SPREAD*)	The difference between the 10-year treasury constant maturity rate and the 2-year treasury constant maturity rate (obtained from Federal Reserve Economic Data)

APPENDIX I: DESCRIPTION OF VARIABLES FOR ALL FIRMS (Cont.)

	Credit spread. (*CREDIT_SPREAD*)	The difference between AAA corporate bond yield and BAA corporate bond yield measured with daily data (obtained from Federal Reserve Economic Data).
	Performance pricing. (*PERF_PRICING*)	A dummy variable that equals 1 if performance pricing is available for the loan, and 0 otherwise.
	Facility amount. (*FACILITY_AMT*)	The logarithm of the loan facility amount.
	Loan maturity. (*MATURITY*)	The logarithm of the loan maturity of the facility measured in months.
	All in drawn spread. (*ALLINDRAWN*)	The amount the borrower pays in basis points over LIBOR for each dollar drawn down. It adds the spread of the loan with any annual (or facility) fee paid to the bank group.
Institutional Investment Variables	Proportion of the firm owned by institutional investors. (*INST_FRAC*)	This is the total shares held by institutions as a percentage of the total shares outstanding.
	Number of institutional investors investing in a firm. (*L_#INST*)	This is the natural logarithm of the number of institutional investors in a firm.
	Types of institutional investors. (*BANKS, INSURANCE COMPANIES, MUTUAL FUNDS, INVESTMENT ADVISORS, PENSIONS AND OTHER*)	The five types of institutional investors, as categorized by CDA/Spectrum. The first three categories are self-explanatory; the investment advisor category includes most of the large brokerage firms; the pensions and other category includes pension funds, university endowments, and foundations.

APPENDIX II: MEASUREMENT OF CONTROL MECHANISMS IN DUAL-CLASS FIRMS

We base our measurements of the control mechanisms in dual-class firms on Amit and Villalonga [2009], whose measurements are generally consistent with the literature in this area. We label and define the different concepts as follows:

O = Shares owned: Shares held by the blockholder with investment power (with or without voting power), in sole form, as a percentage of total shares outstanding.

V = Votes owned: Votes associated with the shares held by the blockholder with voting power (with or without investment power), in sole form, as a percentage of total votes outstanding.

B = Board seats controlled: Percentage of all board seats controlled by the blockholder.

Using this notation, we can more precisely define the separation or wedge between cash-flow and voting control rights as the difference (or ratio) between *V* and *O*, which is the wedge measure used in the dual-class stock literature:

Wedge measured as difference (*VT_OWN*): $(V - O)$

Wedge measured as ratio (*RATIO_VT_OWN*): V/O

Furthermore, we include director election rights as an additional form of corporate control over the cash flow rights, by measuring the wedge (or ratio) between *B* and *O*.

Wedge measured as difference (*BD_OWN*): $(B - O)$

Wedge measured as ratio (*RATIO_BD_OWN*): B/O

TABLE 1, PANEL A

SUMMARY STATISTICS: ALL FIRMS
1995–2002

	DUAL-CLASS FIRMS			PROPENSITY MATCHED SINGLE-CLASS FIRMS		
	MEAN	**MEDIAN**	**STD. DEV.**	**MEAN**	**MEDIAN**	**STD. DEV.**
Firm Characteristics						
SIZE	5.469	5.547	1.971	5.519	5.258**	2.621
BTM	0.737	0.527	0.845	0.639***	0.483**	0.769
DIV	0.008	0.000	0.014	0.007	0.000**	0.015
ASSET_INT	0.508	0.446	0.340	0.538**	0.445	0.386
R&D	0.030	0.000	0.082	0.032	0.000	0.077
CAPEX	0.066	0.045	0.069	0.066	0.047*	0.065
SG&A	0.341	0.243	0.499	0.298**	0.230*	0.332
ROA	–0.029	0.030	0.249	–0.021	0.036**	0.232
RETURN	0.118	0.030	0.652	0.129	0.015	0.661
STD_RET	0.149	0.124	0.097	0.155*	0.132**	0.094
TURNOVER	1.127	0.707	1.227	1.091	0.686	1.171
TAX_CRED	0.000	0.000	0.000	0.000***	0.000***	0.000
S&P500	0.068	0.000	0.252	0.133***	0.000***	0.339
ANALYST	4.389	3.000	4.952	6.561***	3.000	4.997
FIRM_AGE	26.309	28.000	14.082	25.583*	28.000	14.006
FAMILY	0.219	0	0.414	0.210	0	0.407
ACTIVE_FOUNDER	0.593	1	0.491	--	--	--
Capital Structure Variables: Compustat						
LEV_BK	0.2233	0.1861	0.2133	0.1920***	0.1584**	0.1909
LEV_MKT	0.1802	0.1240	0.1855	0.1471***	0.0890***	0.1650
ST_DEBT	0.5183	0.4724	0.2793	0.5759***	0.5546***	0.2731
LT_DEBT	0.3510	0.3532	0.2772	0.3078***	0.3003**	0.2518
Capital Structure Variables: Dealscan						
PVT	0.546	1.000	0.498	0.488***	0.000***	0.500
FIN_COV	2.124	2.000	1.671	1.915**	2.000	1.675
NONFIN_COV	0.731	0.000	1.278	0.711	0.000	1.285
MATURITY	44.201	36.000	28.162	39.603**	36.000	22.617
ALLINDRAWN	171.670	152.500	118.955	162.280	150.000	127.108

TABLE 1, PANEL A, Cont.

Institutional Investment Variables	DUAL-CLASS FIRMS			PROPENSITY MATCHED SINGLE-CLASS FIRMS		
	MEAN	**MEDIAN**	**STD. DEV.**	**MEAN**	**MEDIAN**	**STD. DEV.**
INST_FRAC	0.407	0.405	0.308	0.329***	0.280***	0.301
L_#INST	3.242	3.555	1.484	3.168**	2.996***	1.727
BANKS	0.034	0.013	0.053	0.033**	0.008***	0.056
INSURANCE COMPANIES	0.012	0.002	0.021	0.010**	0.000***	0.022
MUTUAL FUNDS	0.005	0.000	0.011	0.006	0.000***	0.013
INVESTMENT ADVISORS	0.035	0.021	0.055	0.027***	0.013***	0.041
PENSIONS AND OTHER	0.321	0.310	0.252	0.254***	0.212***	0.235

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.**

TABLE 1, PANEL B
SUMMARY STATISTICS: DUAL-CLASS FIRMS
1995–2002

	MEAN	**MEDIAN**	**STD. DEV.**
INSIDER_OWN	0.385	0.361	0.217
VOTE_OWN	0.205	0.196	0.181
BD_OWN	0.218	0.208	0.180

Table 1 presents the summary statistics for the dual-class firms and the propensity-matched sample of single-class firms in panel A, as well as the summary statistics for the control mechanisms of dual-class firms in panel B. The dual-class and single-class matched sample comprises 673 matched firm-pairs. The dual class sample comprises 730 firms. The firm, institutional investment and capital structure variables are defined as follows. *SIZE* is the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *DIV* is the ratio of the common dividends declared divided by the market capitalization; *ASSET_INT* is the ratio of net property, plant, and equipment to total assets; *R&D* is the ratio of research and development expenditures to sales; *CAPEX* is the ratio of capital expenditures to sales; *SGA* is the ratio of selling, general, and administrative expenses to sales; *ROA* is the operating income before depreciation divided by average total assets; *RETURN* is the average monthly returns over the prior year; *STD_RET* is the variance of monthly stock returns over the prior year; *TURNOVER* is the ratio of trading volume to shares outstanding at the end of the prior year; *TAX_CRED* is the ratio of investment tax credits to total assets; *S&P500* is a dummy variable that equals 1 if the firm is in the S&P 500 index, and 0 otherwise; *ANALYST* is the logarithm of the number of analysts following the firm; *FIRM_AGE* is the number of years since the year the firm first appeared on Compustat; *FAMILY* is a dummy variable that equals 1 if family name is present in the name of a firm, and 0 otherwise; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is the CEO or a member of the board of directors, and 0 otherwise; *LEV_BK* is the total debt held by the firm divided by the book value of assets of the firm; *LEV_MKT* is the total debt held by the firm divided by the market value of equity plus the book value of liabilities; *ST_DEBT* is the ratio of short-term debt divided by total liabilities; *LT_DEBT* is the ratio of long-term debt over total liabilities; *PVT* is a dummy variable that equals 1 if the firm has a bank loan contract that year, and 0 otherwise; *FIN_COV* is the number of financial covenants at the package level; *NONFIN_COV* is the number of non-financial covenants at the package level; *MATURITY* is the logarithm of the maturity of the facility measured in months; *ALLINDRAWN* is the amount the borrower pays in basis points over LIBOR for each dollar drawn down; *INST_FRAC* is the total shares held by institutional investors divided by the firm's total shares outstanding; *L_#INST* is the logarithm of the number of institutional investors in the firm; *BANKS, INSURANCE COMPANIES, MUTUAL FUNDS, INVESTMENT ADVISORS* and *PENSIONS AND OTHER* represent the different types of institutions. The variables in the dual-class sample are defined as follows. *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *VOTE_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights.

TABLE 2
CONTROL MECHANISMS IN DUAL-CLASS SAMPLE: PEARSON CORRELATIONS

	INSIDER_OWN	*VOTE_OWN*	*BD_OWN*
SIZE	–0.093*	0.025	0.059
BTM	–0.019	0.086*	0.110*
DIV	–0.067*	0.072*	0.106*
ASSET_INT	0.045	–0.030	–0.018
R&D	0.007	–0.093*	–0.123*
SGA	0.061*	–0.129	–0.129*
ROA	–0.018	0.088*	0.112*
FIRM_AGE	–0.192*	0.114*	0.174*
ACTIVE_FOUNDER	0.080*	0.146*	0.101*
LEV_BK	0.013	0.069*	0.038
LEV_MKT	0.002	0.091*	0.068*
LT_DEBT	–0.021	0.096*	0.070*
MATURITY	0.073*	0.010	–0.076*
PVT	–0.095*	0.143*	0.163*
FIN_COV	0.141*	0.082*	0.040
ALLINDRAWN	0.104*	0.105*	0.023
INST_FRAC	–0.174*	0.185*	–0.006
L_#INST	–0.112*	0.094*	0.019
BANKS	–0.075*	0.098*	0.019
INSURANCE COMPANIES	–0.122*	0.078*	0.004
MUTUAL FUNDS	–0.089*	0.091*	0.033
INVESTMENT ADVISORS	–0.083*	0.103*	–0.018
PENSIONS AND OTHER	–0.124*	0.154*	–0.004

***Significant at the 1% level.**

Table 2 presents the Pearson correlations between the control variables in dual-class firms and the firm, capital structure, and institutional investment variables. *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *VOTE_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *DIV* is the ratio of the common dividends declared divided by market capitalization; *ASSET_INT* is the ratio of net property, plant, and equipment to total assets; *R&D* is the ratio of research and development expenditures to sales; *SG&A* is the ratio of selling, general, and administrative expenses to sales; *ROA* is the operating income before depreciation divided by average total assets; *FIRM_AGE* is the number of years since the year the firm first appeared on Compustat; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is the CEO or a member of the board of directors, and 0 otherwise; *LEV_BK* is the total debt held by the firm divided by the firm's book value of assets; *LEV_MKT* is the total debt held by the firm divided by the market value of equity plus the book value of liabilities; *LT_DEBT* is the ratio of long-term debt over total liabilities; *MATURITY* is the logarithm of the maturity of the facility measured in months; *PVT* is a dummy variable that equals 1 if the firm has a bank loan contract that year, and 0 otherwise; *FIN_COV* is the number of financial covenants at the package level; *ALLINDRAWN* is the amount the borrower pays in basis points over LIBOR for each dollar drawn down; *INST_FRAC* is the total shares held by institutional investors divided by total shares outstanding of the firm; *L_#INST* is the logarithm of the number of institutional investors in the firm; *BANKS*, *INSURANCE COMPANIES*, *MUTUAL FUNDS*, *INVESTMENT ADVISORS* and *PENSIONS AND OTHER* represent the different types of institutions.

TABLE 3
DUAL-CLASS FIRMS AND LEVERAGE

$$LEVERAGE_{j,t} = \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times DIV_{jt} + \alpha_5 \times ROA_{jt} + \alpha_6 \times ASSET\_INT_{jt} + \alpha_7 \times TAX\_CRED_{jt} + \alpha_8 \times R\&D_{jt} + \alpha_9 \times SG\&A_{jt} + \alpha_{10} \times STD\_RET_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \varepsilon_{jt}$$

VARIABLES	ALL FIRMS		DUAL-CLASS FIRMS			
	LEV_BK	LEV_MKT	LEV_BK	LEV_MKT	LEV_BK	LEV_MKT
DUAL_CLASS	0.037***	0.034***				
	(3.11)	(3.33)				
VOTE_OWN			0.128***	0.112***		
			(2.99)	(3.07)		
BD_OWN					0.063	0.055
					(1.50)	(1.58)
INSIDER_OWN			0.014	0.011	0.006	0.004
			(0.38)	(0.34)	(0.16)	(0.13)
SIZE	–0.005	–0.010***	–0.010*	–0.015***	–0.009*	–0.015***
	(–1.33)	(–3.39)	(–1.82)	(–3.30)	(–1.74)	(–3.20)
BTM	–0.032***	0.021**	–0.050***	–0.001	–0.049***	0.000
	(–3.65)	(2.50)	(–4.24)	(–0.08)	(–4.09)	(0.01)
DIV	–0.395	–0.201	–0.209	–0.087	–0.276	–0.150
	(–0.84)	(–0.49)	(–0.27)	(–0.15)	(–0.36)	(–0.23)
ROA	–0.121***	–0.102***	–0.131***	–0.123***	–0.130***	–0.122***
	(–4.29)	(–4.59)	(–3.04)	(–3.44)	(–3.04)	(–3.43)
ASSET_INTENSITY	0.071***	0.054***	0.082**	0.061**	0.081**	0.061**
	(3.41)	(3.08)	(2.58)	(2.30)	(2.54)	(2.24)
TAX_CRED	–0.068**	–0.036	–0.071	–0.067**	–0.108**	–0.099***
	(–2.22)	(–1.29)	(–1.51)	(–2.19)	(–2.32)	(–3.35)
R&D	–0.563***	–0.469***	–0.619***	–0.568***	–0.603***	–0.555***
	(–6.05)	(–6.14)	(–4.78)	(–5.43)	(–4.64)	(–5.30)
SG&A	–0.043***	–0.043***	–0.048***	–0.048***	–0.048***	–0.048***
	(–5.01)	(–5.68)	(–4.38)	(–5.26)	(–4.40)	(–5.32)
STD_RET	0.023**	0.025***	0.040***	0.043***	0.041***	0.043***
	(2.47)	(2.99)	(3.04)	(3.77)	(3.03)	(3.76)
FIRM_AGE	0.001	0.001	–0.000	0.000	0.000	0.001
	(1.03)	(1.29)	(–0.21)	(0.30)	(0.05)	(0.56)
ACTIVE_FOUNDER			–0.026	–0.018	–0.021	–0.014
			(–1.42)	(–1.13)	(–1.16)	(–0.87)
NO. OF OBS.	**4,061**	**4,061**	**2,105**	**2,105**	**2,101**	**2,101**
R-SQUARE	**0.24**	**0.28**	**0.34**	**0.36**	**0.33**	**0.35**

TABLE 3, Cont.

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. T-statistics in parentheses are based on robust firm-clustered standard errors. Time and industry dummies are included.**

Table 3 presents the results for leverage for dual-class firms versus single-class firms and for the two control mechanisms present in dual-class firms, namely voting control and disproportional board representation. The dependent variable is either the book value of leverage (*LEV_BK*) or the market value of leverage (*LEV_MKT*). The independent variable (*DUALCLASS_VARIABLE*) is either the dummy variable *DUAL_CLASS* or one of the control mechanisms, *VOTE_OWN* or *BD_OWN*. In the regression including the control mechanisms, we also include the variables *INSIDER_OWN* and *ACTIVE_FOUNDER* as controls. The dependent and independent variables are defined as follows. *LEV_BK* is the ratio of the total debt to the book value of equity; *LEV_MKT* is the ratio of the total debt to the market value of equity for the year; *DUAL_CLASS* is a dummy that equals 1 if the firm has dual-class stock, and 0 otherwise; *VOTE_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights; *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *DIV* is the ratio of the common dividends declared divided by the market capitalization; *ROA* is the operating income before depreciation divided by average total assets; *ASSET_INT* is the ratio of net property, plant, and equipment to total assets; *TAX_CRED* is the ratio of investment tax credits to total assets; *R&D* is the ratio of research and development expenditures to sales; *SG&A* is the ratio of selling, general, and administrative expenses to sales; *STD_RET* is the variance of monthly stock returns over the prior year; *FIRM_AGE* is the number of years since the year the firm first appeared on Compustat; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is either the CEO or a member of the board of directors, and 0 otherwise.

TABLE 4
DUAL-CLASS FIRMS AND PRIVATE DEBT

$$\Pr ob(PVT)_{j,t} = \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times ROA_{jt} + \alpha_5 \times LEV_{jt} + \alpha_6 \times ASSET\_INT_{jt} + \alpha_8 \times FIRM\_AGE_{jt} + \varepsilon_{jt}$$

VARIABLES	**ALL FIRMS**	**DUAL-CLASS FIRMS**	
DUAL_CLASS	0.191**		
	(2.27)		
VOTE_OWN		0.511	
		(1.63)	
BD_OWN			0.888***
			(2.67)
INSIDER_OWN		–0.611**	–0.586**
		(2.38)	(2.15)
SIZE	0.228***	0.263***	0.249***
	(8.48)	(6.72)	(6.28)
BTM	0.735***	0.661***	0.607***
	(5.65)	(3.77)	(3.44)
ROA	0.798***	0.589***	0.725***
	(4.33)	(2.83)	(2.82)
LEV	1.707***	2.351***	2.389***
	(5.23)	(8.11)	(8.22)
ASSET_INT	–0.058	0.237	0.257
	(0.22)	(0.67)	(0.72)
FIRM_AGE	0.000	0.000	0.000
	(0.46)	(0.13)	(0.36)
ACTIVE_FOUNDER		0.056	0.043
		(0.46)	(0.35)
NO. OF OBS.	**4,376**	**2,392**	**2,345**
PSEUDO R-SQUARE	**0.21**	**0.23**	**0.24**

TABLE 4, Cont.

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. T-statistics in parentheses are based on robust firm-clustered standard errors. Time and industry dummies are included.**

Table 4 presents the results of the probit regression for the likelihood of private debt held by dual-class firms versus single-class firms, as well as for the two control mechanisms present in dual-class firms, namely, voting control and disproportional board representation. The dependent variable is the dummy variable representing the existence of a bank loan (*PVT*). The independent variable (*DUALCLASS_VARIABLE*) is either the dummy variable *DUAL_CLASS* or one of the control mechanisms, *VOTE_OWN* or *BD_OWN*. For the regression with the control mechanisms, the variables *INSIDER_OWN* and *ACTIVE_FOUNDER* are included as well. The dependent and independent variables are defined as follows: *PVT* is a dummy variable that equals 1 if the firm has a bank loan outstanding in the year, and 0 otherwise; *DUAL_CLASS* is a dummy that equals 1 if the firm has dual-class stock, and 0 otherwise; *VT_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights; *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *ROA* is the operating income before depreciation divided by average total assets; *LEV* is the ratio of the total debt to the book value of equity; *ASS_INT* is the ratio of net property, plant, and equipment to total assets; *FIRM_AGE* is the number of years since the year the firm first appeared on Compustat; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is either the CEO or a member of the board of directors, and 0 otherwise.

TABLE 5
DUAL-CLASS FIRMS AND LONG-TERM DEBT

$$LT\_DEBT_{jt} = \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times DIV_{jt} + \alpha_5 \times ROA_{jt} + \alpha_6 \times ASSET\_INT_{jt}$$
$$+\alpha_7 \times TAX\_CRED_{jt} + \alpha_8 \times R\&D_{jt} + \alpha_9 \times SG\&A_{jt} + \alpha_{10} \times STD\_RET_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \varepsilon_{jt}$$

VARIABLES	ALL FIRMS	DUAL-CLASS FIRMS	
DUAL_CLASS	0.048***		
	(3.11)		
VOTE_OWN		0.050**	
		(2.23)	
BD_OWN			0.045*
			(1.88)
INSIDER_OWN		–0.023	–0.021
		(–1.19)	(–1.05)
SIZE	0.003	0.014***	0.014***
	(0.72)	(5.10)	(5.00)
BTM	0.001	0.040***	0.040***
	(0.10)	(7.27)	(7.29)
DIV	–1.168**	–0.643**	–0.675**
	(–2.21)	(–2.03)	(–2.15)
ROA	–0.115***	0.031*	0.032*
	(–3.53)	(1.71)	(1.74)
ASSET_INT	0.097***	0.017	0.016
	(3.53)	(1.00)	(0.97)
TAX_CRED	–0.113***	–0.021	–0.037*
	(–3.00)	(–1.02)	(–1.67)
R&D	–0.768***	0.003	0.001
	(–6.59)	(0.05)	(0.14)
SG&A	–0.046***	0.007	0.006
	(–3.97)	(0.99)	(0.92)
STD_RET	0.006	–0.013*	–0.014*
	(0.51)	(–1.77)	(–1.81)
FIRM_AGE	0.000	–0.000	–0.000
	(0.24)	(–0.88)	(–0.82)
ACTIVE_FOUNDER		0.021**	0.022**
		(2.39)	(2.48)
NO. OF OBS.	**4,061**	**2,105**	**2,101**
R-SQUARE	**0.25**	**0.88**	**0.89**

TABLE 5, Cont.

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. T-statistics in parentheses are based on robust firm-clustered standard errors. Time and industry dummies are included.**

Table 5 presents the results for the fraction of long-term debt for dual-class firms versus single-class firms, as well as for the two control mechanisms present in dual-class firms, namely, voting control and disproportional board representation. The dependent variable is the fraction of long-term debt (*LT_DEBT*). The independent variable (*DUALCLASS_VARIABLE*) is either the dummy variable *DUAL_CLASS* or one of the control mechanisms, *VOTE_OWN* or *BD_OWN*. For the regression with the control mechanisms, the variables *INSIDER_OWN* and *ACTIVE_FOUNDER* are included as controls as well. The dependent and independent variables are defined as follows: *LT_DEBT* is the ratio of total long-term debt to total liabilities; *DUAL_CLASS* is a dummy that equals 1 if the firm has dual-class stock, and 0 otherwise; *VOTE_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights; *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *DIV* is the ratio of the common dividends declared divided by the market capitalization; *ROA* is the operating income before depreciation divided by average total assets; *ASSET_INT* is the ratio of net property, plant, and equipment to total assets; *TAX_CRED* is the ratio of investment tax credits to total assets; *R&D* is the ratio of research and development expenditures to sales; *SG&A* is the ratio of selling, general, and administrative expenses to sales; *STD_RET* is the variance of monthly stock returns over the prior year; *FIRM_AGE* is the number of years since the year the firm first appeared on Compustat; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is either the CEO or a member of the board of directors, and 0 otherwise.

TABLE 6
DUAL-CLASS FIRMS AND FINANCIAL COVENANTS

$$FIN\_COV_{j,t} = \alpha_0 + \alpha_1 \times DUALCLASS\_VARIABLE_{jt} + \alpha_2 \times TERM\_SPREAD_{jt} + \alpha_3 \times CREDIT\_SPREAD_{jt}$$
$$+\alpha_4 \times FACILITY\_AMT_{jt} + \alpha_5 \times MATURITY_{jt} + \alpha_6 \times NONFIN\_COV_{jt} + \alpha_7 \times SIZE_{jt} + \alpha_8 \times BTM_{jt}$$
$$+\alpha_9 \times ROA_{jt} + \alpha_{10} \times ASSET\_INT_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \varepsilon_{jt}$$

VARIABLES	**ALL FIRMS**	**DUAL-CLASS FIRMS**	
DUAL_CLASS	0.174*		
	(1.91)		
VOTE_OWN		0.489	
		(1.33)	
BD_OWN			0.686*
			(1.78)
INSIDER_OWN		0.435	0.558
		(1.25)	(1.55)
TERM_SPREAD	0.131	0.168	0.096
	(0.68)	(0.57)	(0.32)
CREDIT_SPREAD	0.265	0.528	0.469
	(0.77)	(1.01)	(0.88)
FACILITY_AMT	0.029	0.127**	0.126**
	(0.66)	(2.34)	(2.25)
MATURITY	0.074	0.187	0.205
	(0.79)	(1.37)	(1.49)
NONFIN_COV	0.428***	0.515***	0.515***
	(10.99)	(7.65)	(7.65)
SIZE	–0.172***	–0.205***	–0.210***
	(3.86)	(3.20)	(3.27)
BTM	–0.439**	–0.355	–0.389
	(2.39)	(1.30)	(1.37)
ROA	0.422	2.562***	2.478***
	(1.45)	(4.17)	(4.01)
ASSET_INTENSITY	0.421*	0.409	0.430
	(1.70)	(0.95)	(0.99)
FIRM_AGE	–0.001***	–0.001**	–0.001**
	(2.71)	(2.32)	(2.08)
ACTIVE_FOUNDER		–0.011	–0.012
		(0.07)	(0.08)
NO. OF OBS.	**1,564**	**787**	**776**
R-SQUARE	**0.40**	**0.48**	**0.48**

TABLE 6, Cont.

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. T-statistics in parentheses are based on robust firm-clustered standard errors. Time and industry dummies are included.**

Table 6 presents the results for the number of financial covenants for dual-class firms versus single-class firms, as well as for the two control mechanisms present in dual-class firms, namely, voting control and disproportional board representation. The dependent variable is the number of financial covenants (*FIN_COV*). The independent variable (*DUALCLASS_VARIABLE*) is either the dummy variable *DUAL_CLASS* or one of the control mechanisms, *VOTE_OWN* or *BD_OWN*. For the regressions with the control mechanisms, the variables *INSIDER_OWN* and *ACTIVE_FOUNDER* are included as well. The dependent and independent variables are defined as follows: *FIN_COV* is the number of financial covenants measured at the package level; *DUAL_CLASS* is a dummy that equals 1 if the firm has dual-class stock, and 0 otherwise; *VOTE_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights; *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *TERM_SPREAD* is the difference between the 10-year treasury constant maturity rate and the 2-year treasury constant maturity rate; *CREDIT_SPREAD* is the difference between the AAA corporate bond yield and BAA corporate bond yield; *FACILITY_AMT* is the logarithm of the loan facility amount; *MATURITY* is the logarithm of the loan maturity of the facility in months; *NONFIN_COV* is the number of non-financial covenants at the package level; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *ROA* is the operating income before depreciation divided by the average total assets; *ASSET_INT* is the ratio of the net property, plant, and equipment divided by total assets; *FIRM_AGE* is the number of years since the year the borrower first had data available in CRSP; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is either the CEO or a member of the board of directors, and 0 otherwise.

TABLE 7, PANEL A
DUAL-CLASS FIRMS AND INSTITUTIONAL INVESTMENT

$$INSTITUTIONAL\_INVESTMENT_{jt} = \alpha_0 + \alpha_1 \times DUAL\_CLASS_{jt} + \alpha_2 \times SIZE_{jt} + \alpha_3 \times BTM_{jt} + \alpha_4 \times DIV_{jt}$$
$$+\alpha_5 \times ROA_{jt} + \alpha_6 \times PRICE_{jt} + \alpha_7 \times RETURN_{jt} + \alpha_8 \times TURNOVER_{jt} + \alpha_9 \times STD\_RET_{jt} + \alpha_{10} \times S\&P500_{jt}$$
$$+\alpha_{11} \times ANALYST_{jt} + \alpha_{12} \times FIRM\_AGE_{jt} + \varepsilon_{jt}$$

VARIABLES	INST_FRAC	L_#INST	BANKS	INSURANCE COMPANIES	MUTUAL FUNDS	INVESTMENT ADVISORS	PENSIONS AND OTHER
DUAL_CLASS	0.051***	0.113***	0.002	0.002**	0.000	0.006***	0.041***
	(5.18)	(2.75)	(1.14)	(2.47)	(0.16)	(3.04)	(4.90)
SIZE	–0.021***	–0.032	0.000	0.000	0.000	–0.001	–0.019***
	(–4.58)	(–1.42)	(–0.41)	(–0.37)	(0.87)	(–0.63)	(–5.30)
BTM	0.000	–0.027	–0.002**	0.000	–0.004***	0.001	0.002
	(–0.03)	(–1.12)	(–2.42)	(–0.89)	(–2.69)	(0.42)	(0.46)
DIV	0.540	0.966	0.259**	–0.031	0.022	0.022	0.270
	(1.51)	(0.57)	(2.30)	(–1.36)	(1.25)	(0.38)	(0.89)
ROA	0.051**	0.052	0.006**	0.001	0.001**	0.004	0.038**
	(2.55)	(0.60)	(2.23)	(1.02)	(2.12)	(1.31)	(2.29)
PRICE	0.053***	0.193***	0.001	0.001	0.001	0.004***	0.047***
	(5.06)	(6.59)	(0.73)	(1.29)	(1.51)	(2.81)	(5.39)
RETURN	–0.021***	–0.064***	–0.003***	–0.001**	0.000	–0.003**	–0.014***
	(–3.42)	(–2.81)	(–3.00)	(–2.24)	(–0.57)	(–2.22)	(–2.77)
TURNOVER	0.018***	0.001	0.002***	0.008**	0.001***	0.001	0.013***
	(3.57)	(0.06)	(3.40)	(2.37)	(4.27)	(1.44)	(3.20)
STD_RET	–0.026**	0.034	–0.005***	–0.002*	–0.001**	–0.001	–0.017*
	(–2.43)	(0.85)	(–3.16)	(–1.91)	(–2.12)	(–0.70)	(–1.92)
S&P500	–0.073***	–0.049	0.003	0.000	–0.002***	–0.004	–0.069***
	(–4.25)	(–0.56)	(0.63)	(–0.12)	(–2.98)	(–1.42)	(–4.96)

TABLE 7, PANEL A, Cont.

VARIABLES	INST_FRAC	L_#INST	BANKS	INSURANCE COMPANIES	MUTUAL FUNDS	INVESTMENT ADVISORS	PENSIONS AND OTHER
ANALYST	0.128***	0.952***	0.011***	0.005***	0.002***	0.010***	0.099***
	(22.13)	(26.68)	(10.45)	(10.55)	(12.04)	(8.68)	(20.76)
FIRM_AGE	0.001*	0.011***	0.004***	0.000	0.000***	0.000	0.000
	(1.90)	(6.40)	(4.08)	(1.26)	(2.91)	(0.95)	(0.75)
NO. OF OBS.	**9,692**	**9,692**	**9,692**	**9,692**	**9,692**	**9,692**	**9,692**
R-SQUARE	**0.66**	**0.82**	**0.4**	**0.25**	**0.33**	**0.29**	**0.63**

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. T-statistics in parentheses are based on robust firm-clustered standard errors. Industry and time dummies are included.**

Table 7, Panel A presents the results of the institutional investment in dual-class firms versus single-class firms. The dependent variable is either the institutional investment in the firm (*INST_FRAC*), the number of institutional investors (*L_#INST*), or the different types of institutions. The dependent and independent variables are defined as follows: *INST_FRAC* is the total shares held by institutions as a proportion of the total shares outstanding; *L_#INST* is the logarithm of the number of institutional investors in the firm; *BANKS*, *INSURANCE COMPANIES*, *MUTUAL FUNDS*, *INVESTMENT ADVISORS* and *PENSIONS AND OTHER* represent the different types of institutions*; DUAL_CLASS* is a dummy that equals 1 if the firm has dual-class stock, and 0 otherwise; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *DIV* is the ratio of the common dividends declared divided by the market capitalization; *ROA* is the operating income before depreciation divided by the average total assets of the firm; *PRICE* is the logarithm of the closing price at the end of the year; *RETURN* is the average monthly stock returns over the year; *TURNOVER* is the ratio of the trading volume to the number of shares outstanding at the end of the year; *STD_RET* is the volatility of monthly stock returns over the prior year; *S&P500* is a dummy variable that equals 1 if the firm is a member of the S&P 500 index, and 0 otherwise; *ANALYST* is the logarithm of the number of analysts covering the firm; *FIRM_AGE* is the number of years since the year the borrower first had data on CRSP.

TABLE 7, PANEL B
CONTROL MECHANISMS IN DUAL-CLASS FIRMS AND INSTITUTIONAL INVESTMENT

$$INSTITUTIONAL\_INVESTMENT_{jt} = \alpha_0 + \alpha_1 \times CONTROL\_MECHANISMS_{jt} + \alpha_2 \times INSIDER\_OWN + \alpha_3 \times SIZE_{jt} + \alpha_4 \times BTM_{jt}$$
$$+\alpha_5 \times DIV_{jt} + \alpha_6 \times ROA_{jt} + \alpha_7 \times PRICE_{jt} + \alpha_8 \times RETURN_{jt} + \alpha_9 \times TURNOVER_{jt} + \alpha_{10} \times STD\_RET_{jt} + \alpha_{11} \times FIRM\_AGE_{jt} + \alpha_{12} \times ACTIVE\_FOUNDER_{jt}$$
$$+\alpha_{13} \times S\&P500_{jt} + \alpha_{14} \times ANALYST_{jt} + \varepsilon_{jt}$$

VARIABLES	INST_FRAC		L_#INST		BANKS		INSURANCE COMPANIES		MUTUAL FUNDS		INVESTMENT ADVISORS		PENSIONS AND OTHER	
VOTE_OWN	0.183***		0.302*		0.017*		0.002		0.004***		0.026*		0.135***	
	(4.61)		(1.93)		(1.95)		(0.77)		(2.81)		(1.70)		(4.19)	
BD_OWN		0.152***		0.267		0.015*		0.002		0.005***		0.019		0.112***
		(3.64)		(1.63)		(1.68)		(0.69)		(3.63)		(1.28)		(3.46)
INSIDER_OWN	–0.132***	–0.125***	–0.357***	–0.340***	–0.007	–0.006	–0.011***	–0.010***	–0.002	–0.001	–0.009	–0.008	–0.102***	–0.097***
	(–3.95)	(–3.58)	(–3.03)	(–2.76)	(–1.13)	(–0.95)	(–3.77)	(–3.60)	(–1.55)	(–1.11)	(–1.16)	(–1.02)	(–3.61)	(–3.31)
SIZE	–0.008	–0.009	0.053	0.051	0.002	0.002	0.000	0.000	0.001***	0.001***	0.001	0.001	–0.011*	–0.012**
	(–1.07)	(–1.21)	(1.51)	(1.46)	(1.50)	(1.43)	(0.45)	(0.44)	(2.81)	(2.76)	(0.57)	(0.50)	(–1.90)	(–2.03)
BTM	–0.018**	–0.017**	–0.036	–0.035	–0.003***	–0.003***	–0.001	–0.001	–0.000**	–0.000**	–0.002	–0.002	–0.011	–0.011
	(–2.19)	(–2.16)	(–1.25)	(–1.24)	(–2.83)	(–2.85)	(–0.82)	(–0.81)	(–2.01)	(–2.07)	(–1.40)	(–1.35)	(–1.62)	(–1.59)
DIV	1.026*	0.987*	1.951	1.968	0.399*	0.395*	–0.027	–0.027	0.027*	0.025	0.043	0.040	0.590	0.559
	(1.85)	(1.80)	(0.78)	(0.79)	(1.88)	(1.85)	(–0.68)	(–0.68)	(1.67)	(1.52)	(0.41)	(0.39)	(1.19)	(1.15)
ROA	0.088***	0.086***	0.162*	0.157*	0.005	0.005	0.003*	0.003*	0.001	0.001	0.006	0.005	0.073***	0.072***
	(3.33)	(3.22)	(1.70)	(1.65)	(1.46)	(1.39)	(1.71)	(1.69)	(1.21)	(1.09)	(1.13)	(1.05)	(3.33)	(3.24)
PRICE	0.030**	0.032***	0.111***	0.112***	–0.002	–0.002	0.000	0.000	0.000	0.000	0.003	0.003	0.029***	0.030***
	(2.56)	(2.67)	(2.75)	(2.77)	(–0.70)	(–0.65)	(0.13)	(0.14)	(0.33)	(0.37)	(1.32)	(1.46)	(3.04)	(3.14)
RETURN	–0.019**	–0.019**	–0.054*	–0.053*	–0.002	–0.002	–0.001	–0.001	0.000	0.000	–0.005**	–0.005**	–0.011	–0.011
	(–2.35)	(–2.33)	(–1.84)	(–1.79)	(–1.36)	(–1.38)	(–1.50)	(–1.50)	(0.04)	(0.02)	(–2.58)	(–2.56)	(–1.64)	(–1.63)
TURNOVER	0.009	0.009	–0.019	–0.019	0.001*	0.001*	0.001	0.001	0.001***	0.001***	0.001	0.001	0.006	0.006
	(1.31)	(1.28)	(–0.79)	(–0.81)	(1.81)	(1.77)	(1.39)	(1.37)	(3.25)	(3.22)	(0.42)	(0.43)	(1.02)	(1.00)
STD_RET	–0.022	–0.024*	0.028	0.024	–0.008***	–0.008***	–0.001	–0.001	–0.001**	–0.001**	–0.002	–0.002	–0.011	–0.012
	(–1.57)	(–1.68)	(0.54)	(0.45)	(–2.82)	(–2.83)	(–1.29)	(–1.31)	(–1.98)	(–2.09)	(–0.57)	(–0.64)	(–0.91)	(–1.00)

TABLE 7, PANEL B, Cont.

VARIABLES	INST_FRAC		L_#INST		BANKS		INSURANCE COMPANIES		MUTUAL FUNDS		INVESTMENT ADVISORS		PENSIONS AND OTHER	
FIRM_AGE	0.000	0.000	0.009***	0.009***	0.000*	0.000*	0.000	0.000	0.000	0.000	0.000	0.000	–0.001	–0.001
	(–0.37)	(–0.42)	(3.79)	(3.65)	(1.94)	(1.93)	(0.91)	(0.89)	(0.57)	(0.40)	(0.07)	(0.07)	(–1.10)	(–1.13)
ACTIVE_FOUNDER	–0.009	–0.006	0.058	0.064	0.004	0.004	0.000	0.000	–0.001*	–0.001*	–0.004	–0.004	–0.008	–0.006
	(–0.66)	(–0.41)	(0.96)	(1.07)	(1.07)	(1.16)	(0.22)	(0.27)	(–1.93)	(–1.86)	(–1.11)	(–0.98)	(–0.68)	(–0.48)
S&P500	–0.121***	–0.126***	–0.315**	–0.321**	–0.012*	–0.013*	–0.007***	–0.007***	–0.004***	–0.004***	–0.007*	–0.008**	–0.091***	–0.095***
	(–5.52)	(–5.33)	(–2.10)	(–2.14)	(–1.86)	(–1.90)	(–2.62)	(–2.63)	(–3.35)	(–3.47)	(–1.91)	(–2.12)	(–4.91)	(–4.82)
ANALYST	0.113***	0.114***	0.843***	0.846***	0.007***	0.008***	0.005***	0.005***	0.002***	0.002***	0.008***	0.008***	0.091***	0.092***
	(12.04)	(12.00)	[15.43]	(15.41)	(4.96)	(5.00)	(6.44)	(6.46)	(7.01)	(7.16)	(3.48)	(3.59)	(11.78)	(11.78)
NO. OF OBS.	**5,126**	**5,122**	**5,126**	**5,122**	**5,126**	**5,122**	**5,126**	**5,122**	**5,126**	**5,122**	**5,126**	**5,122**	**5,126**	**5,122**
R-SQUARE	**0.69**	**0.69**	**0.83**	**0.82**	**0.41**	**0.4**	**0.28**	**0.28**	**0.38**	**0.38**	**0.3**	**0.29**	**0.66**	**0.65**

*****Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level. T-statistics in parentheses are based on robust firm-clustered standard errors. Industry and time dummies are included.**

Table 7, Panel B presents the results of the relation between institutional investment and the two control mechanisms in dual-class firms, namely, voting control and board control. The dependent variable is either the institutional investment in the firm (*INST_FRAC*), the number of institutional investors (*L_#INST*), or the different types of institutions. The dependent and independent variables are defined as follows: *INST_FRAC* is the total shares held by institutions as a proportion of the total shares outstanding; *L_#INST* is the logarithm of the number of institutional investors in the firm; *BANKS*, *INSURANCE COMPANIES*, *MUTUAL FUNDS*, *INVESTMENT ADVISORS* and *PENSIONS AND OTHER* represent the different types of institutions*; VOTE_OWN* is the difference between voting rights and cash flow rights; *BD_OWN* is the difference between board election rights and cash flow rights; *INSIDER_OWN* measures the cash flow rights of the holders of dual-class stock; *SIZE* is measured as the natural logarithm of market capitalization; *BTM* is the book value of equity divided by the market value of equity; *DIV* is the ratio of the common dividends declared divided by the market capitalization; *ROA* is the operating income before depreciation divided by the average total assets of the firm; *PRICE* is the logarithm of the closing price at the end of the year; *RETURN* is the average monthly stock returns over the year; *TURNOVER* is the ratio of the trading volume to the number of shares outstanding at the end of the year; *STD_RET* is the volatility of monthly stock returns over the prior year; *FIRM_AGE* is the number of years since the year that the borrower first had data on CRSP; *ACTIVE_FOUNDER* is a dummy variable that equals 1 if the founder or co-founder is either the CEO or a member of the board of directors, and 0 otherwise; *S&P500* is a dummy variable that equals 1 if the firm is a member of the S&P 500 index, and 0 otherwise; *ANALYST* is the logarithm of the number of analysts covering the firm.