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Disproportionate Insider Control and the Demand for Audit Quality

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Disproportionate Insider Control and the Demand for Audit Quality

We examine the relationship between disproportionate insider control, enabled through dual-class share structures, and the demand for audit quality. Using a comprehensive hand-collected sample of U.S. dual-class firms, we find that, consistent with outside shareholders' increased demand for external monitoring, as well as self-bonding by entrenched insiders, disproportionate insider control is positively associated with the propensity to hire a Big 4 or industry specialist auditor, auditor independence, and audit fees. Corroborating a self-bonding explanation, additional analyses show that audit quality mitigates the negative association of disproportionate insider control and firm value. In expanded analyses, we also investigate the separate effects of insider voting and cash flow rights on the demand for audit quality in dual-class firms. Consistent with general agency theory, we find a decreased (increased) demand for audit quality from incentive-alignment (entrenchment) effects of ownership.

1. INTRODUCTION

We examine the relationship between disproportionate insider control, enabled through dual-class share structures, and the demand for audit quality. Dual-class equity structures that provide for the possibility of disproportionate insider control have increased considerably in the U.S. capital market. In a typical dual-class firm, one class of shares carries more votes than the other class, while both classes have comparable cash flow rights. Because corporate insiders nearly always hold the superior class, dual-class shares enable insiders to exert disproportionate control due to the possession of voting rights in excess of their cash flow rights.

Firms that maintain a dual-class structure of shares have grown rapidly in the U.S. capital market.¹ In 2005, only a mere 1% of firms going public in the U.S. adopted a dual-class structure of shares. By 2014, the number of dual-class IPOs had increased to 15%. In 2015, the proportion reached 24%. On an industry basis, this development is even more staggering. Of all technology, media and telecommunications companies going public in 2015, a majority (56%) of such firms

¹ In a parallel development, equity structures that enable disproportionate insider control are also increasing in several European markets due to recent legislation providing for enhanced (typically double) voting rights for long-term shareholders, so called "loyalty shares." In France, for instance, the *Florange Act* of 2014 provides for the automatic granting of double-voting rights to registered shares held for at least two years. ISS (2015) estimates that more than fifty percent of French companies now issue shares entitled to double voting rights. In 2014, Italy also passed a similar law enabling the creation of loyalty shares.

adopted a dual-class structure (Feldman 2016). In total, dual-class firms comprised about 6% of all U.S. public firms in the 1995-2002 period (Gompers, Ishii, and Metrick 2010), but now account for 8.7% of companies included in the Russell 3000 index (Equilar 2015).

The trend of firms adopting dual-class share structures is not limited to minor or smaller enterprises. Several of the world's most valuable and dynamic companies have gone public by offering shares with unequal voting rights in the U.S. Companies electing a dual-class structure of shares at their IPO include Alphabet (Google), Facebook, LinkedIn, Comcast, Zoetis, Nike, Alibaba, and Snap. Three of the top ten worldwide largest companies by market capitalization maintain equity structures with multiple classes of shares: Alphabet, Berkshire Hathaway, and Facebook (Sharfman 2017).

The surge of firms that enable disproportionate insider control in the U.S. has triggered extensive discussions in the investing community.² Dual-class share structures are controversial: disproportionate insider control has the potential to enable the expropriation of wealth by insiders at the expense of outside shareholders and to insulate under-performing management from shareholder accountability and the market for corporate control. Yet these equity structures also enable companies to focus on long-term strategy and better resist short-term expectations that often come with being publicly traded.

Given the concern about weak corporate governance in this rapidly growing segment of U.S. public firms, our study is timely and important. How disproportionate insider control affects the demand for audit quality is not without ambiguity. On the one hand, entrenched insiders may

² See, for example, "Out of Control," *The Economist*, September 22, 2014, available at <https://www.economist.com/news/finance-and-economics/21618889-more-worlds-big-stockmarkets-are-allowing-firms-alibaba-sideline>; "Why Investors Are Fretting Over Dual-Class Shares," *Bloomberg Businessweek*, July 9, 2017, available at <https://www.bloomberg.com/news/articles/2017-07-10/why-investors-are-fretting-over-dual-class-shares-quicktake-q-a>.

use their dominant influence to hire lower quality auditors because they value their control over the company and wish to be unencumbered by strong outside monitoring. On the other hand, investors recognize that disproportionate control enhances insiders' ability to influence financial reporting and to expropriate wealth at the expense of minority shareholders. Investors therefore discount the value of firms in which insiders can exert disproportionate control (e.g., Claessens, Djankov, Fan, and Lang 2002; Harvey, Lins, and Roper 2004). Because inside shareholders bear a portion of the cost of evading efficient monitoring, contravening incentives also exist to reduce the price discount through self-bonding, i.e., enhanced external monitoring (Jensen and Meckling 1976). Our hand-collected data enable us to examine which one of these two possibilities is realized among dual-class firms in the U.S. capital market.

We take a comprehensive look at the demand for audit quality in U.S. dual-class firms. DeAngelo (1981) defines audit quality as the probability that an auditor will both (1) discover a breach in the accounting system and (2) report the breach.³ As proxies for the auditor's capability to discover a breach, we examine the client's decisions to hire a Big 4 (Lennox 2005; Niskanen, Karjalainen, and Niskanen 2011) or industry specialist auditor (Kang 2014). Our proxies for the auditor's propensity to report the breach, i.e., the auditor's independence, are economic (fee) dependence (Li 2009; Hollingsworth and Li 2012) and the ratio of non-audit to audit fees (Niu 2008).⁴ For consistency with prior studies, we also examine audit fees (Gotti et al. 2012; Mitra et al. 2007; Khalil et al. 2008).

³ According to DeAngelo (1981), "the probability that a given auditor will discover a breach depends on the auditor's technological capabilities, the audit procedures employed on a given audit, the extent of sampling, etc. The conditional probability of reporting a discovered breach is a measure of an auditor's independence from a given client."

⁴ Because our focus is on clients' demand for audit quality, we study observable inputs to the audit process controlled by the client, instead of output-based measures, such as restatements or the issuance of going-concern opinions, which are best suited for tests examining auditors' supply of audit quality (DeFond and Zhang 2014).

We conduct our analyses using a comprehensive hand-collected sample of U.S. dual-class firms in the 2000 to 2016 period.⁵ First, we examine results from within the sample of dual-class firms where we control for sample selection bias using the Heckman (1979) two-stage estimation methodology, and for endogeneity using an instrumental variable approach. To corroborate these results, we also examine a sample of dual-class and propensity-score matched single-class firms (Masulis, Wang, and Xie 2009; Jordan, Liu, and Wu 2014; McGuire, Wang, and Wilson 2014).⁶

We find that disproportionate insider control is associated with an increased probability to hire a Big 4 or industry specialist auditor, greater auditor independence (as indicated by a lower ratio of non-audit to audit fees and decreased fee dependence), as well as higher audit fees.⁷ These associations are consistent with an increased demand for audit quality by outside shareholders as well as a self-bonding explanation and identical incentives for insiders to reduce agency costs through enhanced monitoring.

To validate our interpretation of these findings, we conduct a supplemental analysis and investigate whether and how audit quality affects the association of disproportionate insider control and firm value. As in prior work (Gompers et al. 2010, Baran and Forst 2015), we confirm a significant negative relationship between disproportionate control and firm value (Tobin's Q), which is consistent with a valuation discount applied by investors who are concerned about poor corporate governance. Importantly we find a positive and significant interaction term of

⁵ In all, our sample encompasses 4,748 firm-years from 641 non-financial dual-class firms in the 2000 to 2016 period. Upon merging with other necessary data from Compustat, CRSP, and AuditAnalytics, our final sample includes 499 firms contributing 3,647 firm-years.

⁶ Specifically, we follow Gompers et al. (2010) and estimate a probit model predicting whether a firm will adopt a dual-class structure or not. We then match each dual-class firm (without replacement) with a single-class firm with the closest predicted probability of choosing a dual-class structure. Using this procedure, we create a sample of firms that are similar with respect to characteristics affecting the election of a dual-class equity structure.

⁷ These results conflict with Niu (2008), who finds a negative association of dual-class status with auditor independence. Moreover, while we confirm Khalil, Magnan, and Cohen's (2008) finding of a positive association of disproportionate insider control and audit fees, our more comprehensive analysis of five proxies for audit quality suggests a demand- rather than a supply-based explanation.

disproportionate insider control and audit quality, indicating that audit quality significantly attenuates this negative association. Hence, consistent with a self-bonding explanation, and Jensen and Meckling's (1976) conjecture that wealth effects provide incentives for insiders to self-bond through increased audit quality, our findings indicate that financial markets reward firms that are characterized by disproportionate insider control for higher audit quality.

Insider ownership affords the potential to align the interests of shareholders and corporate insiders, but it also provides a means for entrenchment (Morck, Shleifer, and Vishny 1988; Claessens et al. 2002). These two distinct consequences of insider ownership—incentives and entrenchment—are confounded in single-class firms, and must be identified using only one variable, insider stock ownership. A number of studies have therefore utilized firms with more than one class of common stock as a workaround, because in dual-class firms voting rights and cash flow rights held by insiders diverge (Francis, Schipper, and Vincent 2005; Masulis et al. 2009; Gompers et al. 2010).

Consistent with the entrenchment effect of ownership, we find that in our dual-class firm sample voting rights held by insiders are associated with an increased probability to hire a Big 4 or industry specialist auditor, greater auditor independence, and higher audit fees. Supporting the incentive-alignment effect of ownership, the association of these characteristics with insider cash flow rights is of the opposite sign. Taken together, these findings provide evidence that in dual-class firms the effects of insider ownership on the demand for audit quality are non-linear: the incentive and entrenchment effects of ownership work in opposing directions.

Overall our findings of a positive association of disproportionate insider control and the demand for audit quality are consistent with general agency-theoretical expectations which imply that outside shareholders will require enhanced external monitoring, and/or insiders will

voluntarily increase the observability of their actions to minimize the share of agency costs they bear (Jensen and Meckling 1976). The consistent positive association we find suggests that disproportionate insider control appears unlikely to compromise the rigor of the audit function.

In Section 2, we discuss the related literature and develop our research expectations. We describe our sample, and present our research design and variable computation, in Section 3. Section 4 discusses our empirical results. Concluding remarks appear in Section 5.

2. LITERATURE REVIEW AND RESEARCH EXPECTATIONS

Agency theory and the literature on managerial ownership and agency costs provide the theoretical underpinnings of this study. The agency conflict between owner-managers and outside shareholders derives from owner-managers' propensity to appropriate perquisites out of firm resources for their own consumption when ownership and control diverge (Jensen and Meckling 1976). Among other mechanisms, effective third-party monitoring can substitute for the inability of outside shareholders to observe insiders' actions directly. For this reason, prior work has identified the extent of agency conflicts as the principal determinant of a given client's demand for audit quality (Watts 1977; DeAngelo 1981; Francis and Wilson 1988; DeFond 1992).

Insider ownership reduces the agency conflict between corporate insiders and shareholders by aligning the interests of insiders with those of shareholders. To the extent that the incentive-alignment effect of insider ownership mitigates the agency conflict, the need for external monitoring decreases. Entrenchment effects at higher levels of ownership, however, may offset positive incentive-alignment effects (Lennox 2005). While insider ownership therefore mitigates the classic Type I agency conflict between shareholders and managers of the firm, high levels of ownership can create a Type II agency conflict between controlling and minority shareholders,

where controlling shareholders may use their dominant position in the firm to extract private benefits at the cost of minority shareholders (Villalonga and Amit 2009).

The potential for Type II agency problems appears particularly severe in dual-class firms. Unlike in firms with a single class of stock, where one share equals one vote, in dual-class firms corporate insiders typically control a portion of the vote that exceeds their economic interest. The decoupling of control and economic rights enables insiders to execute self-serving decisions at a lower cost.⁸

Few studies examine how disproportionate insider control in dual-class firms affects audit characteristics. We are aware of two studies utilizing samples of Canadian firms. Niu (2008) finds a positive relation of dual-class status and non-audit fees, both in absolute terms and relative to audit fees, in a sample of Canadian firms in 2003 and 2004. Niu's study indicates the possibility of lower auditor independence, which would be consistent with a lower demand for audit quality in firms characterized by disproportionate control.

By contrast, in another study of Canadian firms in 2004, Khalil et al. (2008) document a positive association of disproportionate insider control and audit fees, which might indicate an increased demand for audit quality. Khalil et al. (2008), however, attribute their finding to auditors' increased supply of, rather than clients' increased demand for, audit quality. The two studies appear to conflict. Khalil et al.'s (2008) interpretation that audit firms supply higher audit quality is difficult to reconcile with Niu's (2008) finding that these same audit firms are less independent.

⁸ Specifically, in single-class firms the cost of misappropriation of corporate funds is proportionate to the insiders' ownership stake. For instance, if insiders own 62% of the shares in a single-class firm, then 62% of the cost of a misappropriation of funds comes out of their own pockets. In the median dual-class firm in our sample, however, insiders command 62% of the firm's voting rights, but only own 24% of its cash-flow rights. Therefore, at the expense of outside shareholders, the insiders' cost of the consumption of private benefits is greatly reduced.

Two related studies investigate the demand for audit quality primarily among family firms, but in this context the researchers also examine separately family firms that maintain a dual-class structure of shares and those that do not.⁹ Ho and Kang (2013) find that family firms with and without dual-class shares pay lower audit fees and are less likely to hire a Big N auditor relative to the average non-family firm. Conversely, Kang (2014) shows that family firms with and without dual-class shares are more likely to appoint industry-specialist auditors than non-family firms do. The two studies do not appear to be internally consistent, as the finding that dual-class family firms have a negative (positive) association with Big N (industry specialist) auditor choice suggests a lower (higher) demand for audit quality reflecting decreased (increased) agency problems. Ho and Kang's (2013) finding also conflicts with Khalil et al. (2008) who find higher audit fees for dual-class firms in their Canadian study.

Prima facie, two competing lines of argument exist with respect to the question of how disproportionate insider control affects the demand for audit quality. Because entrenched insiders likely value their control over the company, they may prefer less capable or less independent auditors who will provide lower levels of scrutiny. Moreover, their dominant position and enhanced voting power also puts insiders in a position to select an audit firm according to their preferences. By contrast, external shareholders have a strong interest in effective, high-quality, third-party monitoring because of an elevated risk of material misstatements and the possibility of misappropriation by corporate insiders through self-serving decisions. Their inferior voting power, however, may not enable external shareholders to influence the selection of the external auditor.

⁹ Family firms and dual-class firms are distinct. Kang (2014) report that about 46% of members of the S&P 1500 index in the 2000-2008 period are family-firms, whereas dual-class firms only comprised 8.7% of the Russell 3000 index constituents in 2015 (Equilar 2015). In our sample, the original founder of the firm or his or descendants control 25% or more of the voting power in 70.6% of our dual-class firms. Applying a more stringent definition of family controlled firms, we find that in 46.3% (52.5%) of dual-class firms founders or their descendants possess at least 25% of the voting power of the firm and serve as the CEO (or in any executive capacity).

In theory, reflecting the magnitude of the agency problem, and in lockstep with the magnitude of a real (or perceived) increase in the risk of fraud, material misstatements, and/or misappropriation from outside shareholders, investors should discount the value of shares of firms with disproportionate control rights (Jensen and Meckling 1976; Gompers et al. 2010). Consistent with this conjecture, empirical work has established a negative relationship between disproportionate insider control and firm value (Tobin's Q) (Gompers et al. 2010; Baran and Forst 2015). This decrease in firm value affects the wealth of inside and outside shareholders alike. Jensen and Meckling (1976) demonstrate that insiders will therefore voluntarily submit to enhanced external monitoring, as long as the net increase in wealth generated from these self-bonding activities exceeds the value of the perquisites that are relinquished. Entrenchment effects thus suggest a positive association between disproportionate insider control and the demand for audit quality, *regardless* of whether insiders of the corporation, external shareholders, or both ultimately select the auditor.

Yet whether external auditors are truly in a position to protect outside investors from misappropriation by corporate insiders is not a foregone conclusion.¹⁰ External auditors cannot question whether specific business decisions are economically sound or in the best interest of outside shareholders. They can only provide assurance that financial statements are prepared in accordance with established accounting standards. However, there exist multiple mechanisms through which high quality audits of financial statements can at least partially protect outside shareholders from some forms of malfeasance in firms characterized by disproportionate insider control.

¹⁰ We thank an anonymous reviewer for this insight.

First and foremost, fraud is a particular concern in firms characterized by significant insider control. The Public Company Accounting Oversight Board's (PCAOB) *Interim Auditing Standard No. 316: Consideration of Fraud in a Financial Statement Audit* (AU 316) lists incentives and pressures due to a significant financial interest in the firm as a risk factor for fraudulent financial reporting (AU §316.85). In addition, AU 316 notes that opportunities for fraud are heightened when management is dominated by a small group of persons, and effective internal controls hence may be lacking (AU §316.85). As opportunities and incentives for fraud increase, so does the demand for audit quality.

Auditors limit insiders' potential for opportunistic behavior also through the required disclosures for related party transactions and the assurance of effective internal controls. Beasley, Carcello, and Hermanson (2001) find that the failure to disclose related party transactions is among the top fraud-related audit deficiencies. By ensuring that financial relationships and material transactions between a tightly controlled company and its executive officers and directors are brought to the light of day, auditors protect outside shareholders while at the same time reducing the risk of fraud.¹¹

Consistent with Masulis et al. (2009), who demonstrate a positive association between disproportionate insider control and the extent of agency problems, and standard agency theory, which stipulates that both outside shareholders and corporate insiders have incentives to employ monitoring or self-bonding mechanisms to mitigate the extent of agency conflicts (Jensen and Meckling 1976), we expect an increase in clients' demand for audit quality as disproportionate insider control increases. Accordingly, we hypothesize:

¹¹ While related party transactions have been contributing factors in numerous financial reporting frauds, continuing weaknesses in auditors' scrutiny of these areas exist to date, as noted by the PCAOB (AS 18, 2014). Related party disclosures therefore appear to be an area in which differential audit quality is relevant.

Hypothesis: Disproportionate insider control is positively associated with clients' demand for audit quality in that auditors engaged display

- a) an increased ability to discover a breach of the accounting system, and
- b) an increased probability to report the breach.

3. SAMPLE, VARIABLE MEASUREMENT, AND RESEARCH DESIGN

Sample

We construct a new sample of non-financial U.S. dual-class firms from 2000 to 2016 following the approach of Gompers et al. (2010). To this end, we first build a comprehensive list of firms that potentially issued more than one class of common stock by comparing the reported number of shares outstanding in CRSP and Compustat. We add firms to our list of potential dual-class firms if any such difference exceeds 1% and identify additional possible dual-class firms from several other sources.¹² For all dual-class firm candidates so identified, we use the Security and Exchange Commission's (SEC) EDGAR database to access proxy statements and/or 10-Ks to verify the corporate structure. Through these procedures, we are confident to present a sample that approaches the population of all public non-financial dual-class firms in the U.S. in this time period. Our dual-class sample comprises 641 firms, which provide 4,748 firm-years of data.

Once the sample is identified, we determine insider ownership for each class of stock in every year.¹³ SEC reporting requirements mandate firms to disclose ownership for directors and

¹² Because the number of shares reported in CRSP is issue specific, whereas Compustat reports the total number of common shares outstanding regardless of class, any difference between the two numbers may indicate the existence of more than one class of shares. We identify as additional candidates any firm identified as dual-class firm from CRSP, Thomson SDC's Global New Issues database, RiskMetrics, and Jay Ritter's website, <http://bear.warrington.ufl.edu/ritter/dual-class-ipo.htm>. Finally, we include as candidates all firms reported as dual-class in the Gompers et al. (2010) sample, which spans 1995 to 2002. We thank Paul Gompers, Joy Ishii, and Andrew Metrick for generously sharing their data on dual-class companies.

¹³ The SEC-required ownership disclosures include options and other rights to stock exercisable within 60 days of the disclosure date. To cleanly measure insider voting and cash flow rights, we screen the disclosures and compute ownership excluding all rights to shares. In all cases, we include shares regardless of disclaimers of ownership.

named executive officers, as well as for all directors and executive officers as a group. We define insider ownership comprehensively as this disclosed group of directors and officers (Gompers et al. 2010). Consistent with SEC disclosure requirements, we include in the number of shares held by insiders all shares owned by family members, or trusts for the benefit of family members, as well as shares owned by corporations with board representation. Upon merging our sample with AuditAnalytics for the audit related variables and with Compustat and CRSP to obtain necessary controls, our final sample consists of 3,647 firm-years (499 firms) with non-missing values for all variables needed in our analyses.

Measuring Insider Voting and Cash Flow Rights

We compute cash flow rights owned by insiders (*CFR*) as fractional equity ownership, i.e., the percentage of shares held by corporate insiders to shares outstanding of all classes, weighted by dividend rights per class (Gompers et al. 2010; Villalonga and Amit 2009). We define insider voting rights (*VR*) as the proportion of votes held by insiders to votes outstanding of all classes. Enhanced voting rights are typically accomplished by assigning a different number of votes per share to each class of stock, the most common ratio being 10:1. Alternatively, firms may establish disproportionate board representation rights for each class of shares, where each class of stock is entitled to elect a certain number of directors separately as a class (DeAngelo and DeAngelo 1985; Villalonga and Amit 2009). In these cases, we base our computation of voting rights on the voting power in the election of the board of directors.¹⁴ Our measure of disproportionate insider control is the difference between insider *VR* and *CFR* (*WEDGE*, Gompers et al. 2010). In single-class firms, the difference between voting rights and cash flow rights is zero by definition.

¹⁴ For instance, assume the board has ten members. There are 20,000 Class A shares, all owned by insiders, which entitle their holders to elect six directors. There are also 100,000 Class B shares, which entitle their holders to elect the remaining four directors. If 10% of the Class B shares are owned by insiders, then the insider voting rights amount to 64%, because insiders can elect all six Class A directors plus 10% of the four Class B directors.

Empirical Models

Audit characteristics are often determined by an interplay of supply and demand factors. Because we examine the client's demand for audit quality, we focus on observable inputs to the audit process which are under the control of the client instead of output-based measures, such as restatements or the issuance of going-concern opinions, which are best suited for tests that examine the auditor's supply of audit quality (DeFond and Zhang 2014). For instance, the choice of a BIG4 or industry specialist auditor are more likely reflective of the client's demand of audit quality, than of the auditor's supply, because supplying increased audit quality by becoming a BIG4 or industry specialist auditor is not a feasible strategy for an audit firm, certainly in the short run and in response to a current audit engagement. Likewise, regarding our independence measure, the client is in control about the extent of non-audit services contracted from the auditor and hence the extent to which independence (or the appearance thereof) might be compromised through the provision of non-audit services by the external auditor.¹⁵

We examine five proxies for clients' demand for audit quality: two commonly used proxies for auditors' ability to discover a breach in the accounting system (the propensity to hire a Big 4 or industry specialist auditor); two proxies for auditors' propensity to report the breach, i.e., auditor independence (the ratio of non-audit fees to audit fees and the auditor's fee dependence); and audit

¹⁵ Whether the provision of non-audit services negatively affects auditor independence or not, is probably not settled in the literature. On the one hand, the provision of non-audit services by external auditors has been of significant regulatory concern; on the other hand, empirical evidence has often been inconclusive. However, while it is not clear whether the provision of non-audit services actually impedes the external auditors' independence, contracting significant non-audit services can negatively affect the appearance of independence (Dopuch, King, and Schwartz 2003; Krishnan, Sami, and Zhang 2005). Accordingly, a demand for increased audit independence in the form of lowered utilization of the external auditor for non-audit services might be equally driven by a demand for improved audit quality as well as clients' increased sensitivity for appearances and a desire to appear above reproach.

fees, which we include for consistency with a majority of empirical auditing studies.¹⁶ A positive (or negative) association of disproportionate insider control and audit fees may be informative interpreted in the context of our findings for our other dependent variables. Because the audit fee, i.e., the price of the audit, is determined by both supply and demand factors, an examination of audit fees by itself may not be sufficient to distinguish between competing supply- and demand-side arguments of audit quality.¹⁷

We investigate the association of *WEDGE* and clients' choice of a *BIG4*, *SPECIALIST*, or economically dependent (*DEPEND*) audit firm building on models from Godfrey and Hamilton (2005), Lennox (2005), and Kang (2014):

$$CHOICE_{it} = \beta_0 + \beta_1 WEDGE_{it} + \beta_2 SIZE_{it} + \beta_3 M_to_B_{it} + \beta_4 LEVERAGE_{it} + \beta_5 ROA_{it} + \beta_6 FOREIGN_{it} + \beta_7 SEGMENTS_{it} + \beta_8 LOSS_{it} + \beta_9 MA_{it} + \beta_{10} LITRISK_{it} + \beta_{11} CAPINT_{it} + \beta_{12} CATA_{it} + \beta_{13} Z_SCORE_{it} + \beta_{14} INVMILLS_{it} + \beta_j YEAR_{it} + \beta_k INDUSTRY_{it} + \varepsilon \quad (1)$$

In model (1), *CHOICE* represents the election of a Big 4, or industry specialist, audit firm. The binary dependent variable *BIG4* equals one if the auditor is a Big 4 audit firm (Big 5 prior to 2002), and zero otherwise. *SPECIALIST* represents an indicator variable that equals one if the firm has the largest market share in a Fama-French (1997) industry category and its market share is at least 10 percent greater than the next largest industry leader in both the national and regional

¹⁶ DeAngelo (1981) highlights that audit firm size at the national level also enhances independence because larger firms are less likely to be economically beholden to any particular client. In this respect, Big 4 auditor choice may be ambiguous and reflect both, clients' demand for auditors' ability and auditors' independence. However, economic dependence may be better captured at the local office level, because a single client can represent a large portion of office-level revenues, yet play an insignificant role at the national level (Li 2009). Accordingly, we believe that the choice of a Big 4, i.e., large national audit firm, *per se* is more reflective of a client's demand for the auditors' superior capabilities, rather than independence, which is predominately determined at the office level.

¹⁷ From a demand perspective, the audit fees reflect the client's demand for audit effort and quality. From an audit supply angle, disproportionate insider control may increase concerns about the probability of material misstatements. The increased audit risk and auditor business risk, which follows as a consequence could prompt auditors to increase their effort and/or to increase audit risk premia. Accordingly, it is questionable whether an analysis of audit fees can lend credence to either a supply or demand explanation, because the audit fee, i.e., the price of the audit, is a joint outcome of demand and supply. Auditors cannot charge for additional effort supplied unless there also exists a corresponding demand for the effort (DeFond and Zhang 2014).

market, and zero otherwise (Kang 2014).¹⁸ Fee dependence (*DEPEND*) is measured as the proportion of the client's total fees paid to all fees from publicly traded clients for a given auditor office in the year.¹⁹ All other control variables are defined in Appendix A.

We examine the association of *WEDGE* with the ratio of non-audit to audit fees, and audit fees based on Niu (2008), Ghosh and Pawlewicz (2009), and Dao, Raghunandan, Rama (2012):

$$\begin{aligned}
 FEES_{it} = & \beta_0 + \beta_1 WEDGE_{it} + \beta_2 SIZE_{it} + \beta_3 M_to_B_{it} + \beta_4 LEVERAGE_{it} + \beta_5 ROA_{it} + \\
 & \beta_6 FOREIGN_{it} + \beta_7 SEGMENTS_{it} + \beta_8 LOSS_{it} + \beta_9 MA_{it} + \beta_{10} LITRISK_{it} + \beta_{11} CAPINT_{it} \\
 & + \beta_{12} CATA_{it} + \beta_{13} Z_SCORE_{it} + \beta_{14} NOT_UNQUAL_{it} + \beta_{15} SPECIALIST_{it} + \beta_{16} BIG4_{it} \\
 & + \beta_{17} INVMILLS_{it} + \beta_j YEAR_{it} + \beta_k INDUSTRY_{it} + \varepsilon
 \end{aligned}
 \tag{2}$$

FEES represent the ratio of non-audit to audit fees paid in a given year (*NA/AUDFEES*), or the natural log of audit fees (*AUDFEES*), respectively. Compared to model (1), model (2) includes the additional independent variables *NOT_UNQUAL*, *SPECIALIST*, and *BIG4*.

Research Design

Like any study of corporate governance characteristics, endogeneity concerns and sample selection bias may hamper the interpretation of our analyses. We address these concerns by conducting our analyses using two different samples. The first sample contains all dual-class firm-year observations with a complete record of data ($n = 3,647$). Our second sample is a propensity score matched sample of dual-class and single-class firms ($n = 6,320$).²⁰

Because the decision to establish a dual-class structure is not random, results from a sample of only dual-class firms could be affected by self-selection bias. Specifically, it is possible dual-

¹⁸ We define the audit office's regional market based on the Core-based Statistical Area (CBSA). If the audit firm's ZIP code is not associated with a CBSA, we use the county as the relevant geographic area to define the audit market.

¹⁹ Because our focus is on the client's demand for audit quality, we use a continuous measure of fee dependence. This is more reasonable than a dichotomous variable in our context because a client likely is aware of its relative size in the local marketplace, and hence can approximate the economic significance it may have for a given audit firm. However, a client is unlikely to know its size as a specific percentage of the auditor's fee-base. In robustness tests, we alternatively employ a dichotomous measure of fee dependence based on a specific threshold proportion (10%) of client fees to total office fees. All results are comparable.

²⁰ Our sample size is smaller when *DEPEND* is the dependent variable, $n = 2,973$ in the dual-class firm sample and $n = 5,200$ in the matched sample because we require at least ten observations for the computation of fee dependence.

class firms are different from single-class firms with respect to characteristics other than dual-class status, and that such differences affect the association between disproportionate control and audit characteristics. We therefore control for possible sample selection effects by employing the Heckman (1979) two-stage estimation methodology. To this end, we estimate a probit model based on several proxies for the decision to establish a dual-class structure (Gompers et al. 2010):²¹

$$\text{Pr}(DC) = \beta_0 + \beta_1 \text{NAME}_i + \beta_2 \text{MEDIA_IPO}_i + \beta_3 \text{SALESRANK}_i + \beta_4 \text{PROFITRANK}_i + \beta_5 \% \text{FIRMS}_i + \beta_6 \% \text{SALES}_i + \beta_7 \text{SALES/REGIONSALLES}_i + \beta_8 \text{STATELAW}_{it} + \beta_9 \text{LISTINGYEAR}_i + \beta_{10} \text{INDUSTRY}_i \varepsilon \quad (3)$$

Following Gompers et al. (2010) and McGuire et al. (2014), we use the coefficient estimates from model (3) to construct an inverse Mills ratio, which we include as an additional control for sample selection bias in all regressions using our sample of dual-class firms.²²

We also implement a two-stage least squares (2SLS) approach because a firm's ownership structure is endogenous. In the first stage, we regress *WEDGE* on a set of instrumental variables proposed by Gompers et al. (2010).²³ We then re-estimate models (1) and (2) replacing *WEDGE* with the predicted value of *WEDGE* from this first stage regression.

²¹ For brevity, we refer to Gompers et al. (2010) for the rationale of all variables included in model (3). For instance, *NAME* represents an indicator variable if the name of the company includes the name of person, and controls for the fact that family ownership is predictive of dual-class status (DeAngelo and DeAngelo 1985). We include all variables identified in Gompers et al. (2010). Because data to construct the state anti-takeover index (Gompers et al. 2003) are not available after 2006, we use the 2006 value for all more recent years. We did not observe a change in this variable for at least the last three years of available data. Including or excluding *STATELAW* does not affect results.

²² We estimate model (3) using the universe of single- and dual-class firms for which variables for models (1) and (2) are available ($n = 49,310$) (McGuire et al. 2014). Dual-class firms comprise 7.4% of total observations ($n = 3,647$). We find that *NAME*, *MEDIA_IPO*, *SALESRANK*, and *%SALES* are positively and significantly associated with dual-class choice, whereas *%FIRMS* displays a significant negative association. These results are consistent with Gompers et al. (2010), with the exception of *SALESRANK* for which Gompers et al. find a negative coefficient. We do not tabulate results from model (3) for parsimony.

²³ These variables are *NAME*, *MEDIA_IPO*, *SALESRANK*, *PROFITRANK*, *%FIRMS*, *%SALES*, *SALES/REGIONSALLES*, and *STATELAW* from model (3) and all control variables from model (1). *NAME*, *MEDIA_IPO*, *PROFITRANK*, and *%SALES* are significantly associated with *WEDGE* and thus retained as instruments in the first stage along with controls (results available upon request). Instruments should not be significantly associated with the second stage dependent variable(s). When we test for overidentification, we find that all variables pass this test; i.e., are not associated with our audit quality measures.

Finally, to add further robustness, we also analyze a matched sample of dual- and single-class firms, which we create following the propensity score matching (PSM) procedure outlined in Masulis et al. (2009) and McGuire et al. (2014). To this end, we derive probabilities that a firm will adopt a dual-class structure by re-estimating model (3). We then match (without replacement) dual- and single-class observations on the closest probability of choosing a dual-class structure.²⁴ This procedure creates a sample of firms with similar characteristics regarding dual-class choice, except that one firm has a dual-class structure while its matched peer does not.²⁵ PSM hence creates a sample in which dual-class status is randomized across the treatment and control group (Lawrence, Minutti-Meza, and Zhang 2011).²⁶

4. EMPIRICAL RESULTS

Descriptive Statistics

Table 1, Panel A, reports descriptive statistics of several key characteristics of our dual-class firm sample (n = 3,647 firm-years, 499 unique firms).²⁷ The majority of dual-class firms in our sample have two classes of shares outstanding. Some firms maintain yet more complex capital structures; 6.2% of observations (226 firm-years) have more than two classes of common stock. In 80.3% of cases, one class has more votes in the election of directors than the other class(es). In

²⁴ We employ the Parsons (2001) greedy 5→1 digit matching algorithm and first match firms on five digits of the propensity score. Dual-class firms that do not match are next matched to single-class firms on four digits of the propensity score, and so on. We successfully match 86.6% of our dual-class firms. The remaining incomplete matching is due to disjointed ranges of propensity scores between dual- and single-class firms in a given year (Parsons 2001).

²⁵ We verify that, as expected, no significant difference exists between dual-class and matched single-class firms with respect to any of the variables included in the selection equation, for instance, the name variable, which proxies for family-firm status.

²⁶ PSM has been employed as a control for endogeneity (Masulis et al. 2009; McGuire et al. 2014), but the method can successfully adjust only for endogeneity due to observables (Tucker 2011). If the selection bias is due to unobservable characteristics that are omitted from the selection equation, PSM cannot correct for it.

²⁷ A majority of observations are from the Consumer Discretionary, Industrials, and Information Technology industries. Observations per year are relatively constant after a decline in firms following the dot com bubble. For 2016, we do not have full data due to some yet missing records in Compustat at the time of this writing. A full breakdown of our sample by industry and year is available upon request.

addition, disproportionate board election rights are common; 1,113 observations (30.5% of sample) maintain an arrangement which entitles each class to elect a set number of directors.²⁸ While voting power differs substantially between classes of stock, dividends rights are largely identical and differ in only 10.9% of observations. We find that dual-class structures are overwhelmingly instituted to create a divergence between control and cash flow rights. In only 83 observations (2.3% of sample) are differences between the classes of stock other than differences in voting or dividend rights.

With respect to our variables of interest, firm insiders possess median (mean) voting rights of 62.0% (56.6%) compared to cash flow rights of 24.0% (28.9%). We measure disproportionate insider control, i.e., the extent of divergence of insider *VR* from *CFR*, as *VR* minus *CFR*, (*WEDGE*). The median (mean) of *WEDGE* is 28.4% (27.7%). Dual-class structures where insiders predominantly hold the inferior class of shares are rare. In only 167 observations (4.6% of sample) do we find that insider *CFR* exceed their *VR*.²⁹

We report mean and median values for our variables of interest and select control side-by-side for our sample of dual-class and matched single-class firms in Table 1, Panel B (n= 3,160 each). Paired t-tests indicate statistically significant univariate differences in means between dual- and matched single-class firm with respect to the choice of an industry specialist auditor, size, leverage, merger and acquisition activity, litigation risk, the current ratio, and the Altman z-score.

[Insert Table 1 about here]

²⁸ The percentage of firms with a different number of votes per class and the percentage of firms with disproportionate board representation rights exceeds 100% because a number of firms utilize both mechanisms.

²⁹ The existence of 2.3% dual-class firm observations in our sample with no difference in voting and cash-flow rights, in addition to 4.6% of observations where insiders hold the inferior shares, indicates the possibility of measurement error in studies that use a dichotomous variable of dual-class shares as an indicator for disproportionate insider control.

Regression Results

Using our sample of dual-class firms, in which we control for sample-selection bias using the Heckman (1979) two-stage estimation methodology, Table 2 displays the results of regressions of five proxies for clients' demand for audit quality on disproportionate insider control, *WEDGE* and controls.

With respect to the first part of our hypothesis, auditors' ability to discover a breach in the accounting system, we find positive and significant associations of *WEDGE* and *BIG4* and *SPECIALIST* (Columns A and B) indicate an increased demand for more capable auditors. Likewise, with respect to the second dimension of audit quality, auditor's propensity to report a breach in the accounting system, we find statistically significant negative associations of *WEDGE* and *DEPEND* and *NA/AUDFEES* (Columns C and D). These associations are consistent with an increased demand for auditor independence. As disproportionate insider ownership increases, firms hire auditors that are less dependent on the client's fees and provide fewer non-audit services relative to the amount of audit fees paid.³⁰ As in Khalil et al. (2008), we also confirm a positive association between *WEDGE* and audit fees ($t = 2.53, p < 0.05$, two-tailed).

[Insert Table 2 about here]

Overall, we find strong support for our hypothesis. Disproportionate insider ownership is associated with an increased demand for both auditor capability and independence, consistent with a desire to assuage financial market concerns about weak corporate governance and/or counteract the perceived, or real, risk of increased material misstatements and misappropriation. We note that our finding of a negative association of *WEDGE* with *NA/AUDFEES* conflicts with Niu (2008),

³⁰ The audit environment changed substantially upon passage of the Sarbanes-Oxley Act in 2002, which in particular affected auditors' ability to provide non-audit services to clients. To ensure that our results, especially for *NA/AUDFEES*, are not affected by the inclusion or omission of pre-/post-SOX observations in our data we include year fixed effects in all of our regressions.

who finds a positive association of dual-class status and *NA/AUDFEES*, indicating possible compromised auditor independence. Our finding of a negative ratio of non-audit to audit fees suggests lowered relative importance of non-audit services and thus increased auditor independence, consistent with our finding for *DEPEND*.³¹

Table 3 reports results of a replication of this regression, using a 2SLS approach to control for endogeneity. We estimate *WEDGE* following Gompers et al. (2010) and replace observed *WEDGE* with its predicted value in models (1) and (2). As shown in Table 3, all results remain unaffected, except the association of *WEDGE* with *NA/AUDFEES* which remains negative, but loses statistical significance at conventional levels.

[Insert Table 3 about here]

We report results of our replication of models (1) and (2) using a propensity score matched sample of dual- and single-class firms in Table 4. All results for the effects of *WEDGE* on audit or auditor characteristics are consistent with those reported in Tables 3 and 4 for the dual-class firm sample. As disproportionate insider control increases, we find a greater likelihood to hire a Big 4 or industry specialist auditor, lowered economic dependence of the audit firm, a lowered ratio of non-audit to audit fees, and higher audit fees. All of these association are statistically significant, including the association of *WEDGE* with *NA/AUDFEES*, except for the association with *BIG4* in this specification.

[Insert Table 4 about here]

³¹ We also examine the absolute amount of non-audit fees and find consistent results, i.e., a statistically significant negative association of *WEDGE* and non-audit fees, which is also contradictory to Niu (2008), who finds lowered non-audit fees in absolute amount. Taken together, our results for non-audit fees are consistent with a sensitivity of firms that are characterized by disproportionate insider control to the appearance of compromised independence due to the contracting of substantial non-audit work with their audit firm.

Results reported in Tables 2 through 4 provide evidence confirming our hypothesis. We find a positive association of disproportionate insider control and clients' demand for audit quality, reflected in both an increased demand for auditors' capability as well as auditors' independence. These results are consistent across our dual-class and matched dual- and single-class firm samples, the Heckman (1979) two-stage estimation methodology to correct for sample selection bias, and an instrumental variable approach to control for endogeneity. The robust positive association we find is consistent both with outside shareholders' increased demand for external monitoring, as well as self-bonding by entrenched insiders. In particular, the finding that firms characterized by disproportionate control display a lowered reliance on their auditors for the provision of non-audit services suggests a concern for appearances and an interest in signaling high integrity.

The positive association with the demand for audit quality we find complements Dey, Nikolaev, and Wang (2015), who document increased monitoring by debtholders in firms characterized by disproportionate insider control. Higher audit quality also corroborates Nguyen and Xu's (2010) and Chen's (2008) finding of lowered earnings management activities in firms with disproportionate insider control. Our results suggest that earnings management may not only be less prevalent among such firms due to lowered incentives or decreased market pressure for earnings management, as Nguyen and Xu (2010) or Chen (2008) suggest, but could also be due to enhanced auditor monitoring.

Extended Analysis: Disproportionate Control, Audit Quality, and Firm Value

We find consistent evidence of a positive association of disproportionate insider control and audit quality across a set of proxies for auditor capability as well as auditor independence. However, as much as Jensen and Meckling (1976) demonstrate that inside shareholders have incentives identical to those of outside shareholders to minimize agency costs through self-bonding

activities, these findings still appear to go against the grain; the counter-argument that entrenched insiders may act exactly to the opposite, i.e., appoint weak auditors to further their entrenchment, is compelling. Accordingly, to corroborate a possible self-bonding explanation, we examine whether increased external monitoring in the form of enhanced audit quality indeed decreases the disproportionate control valuation penalty imposed by investors.

To this end, we replicate the primary results in Gompers et al. (2010) who establish a negative association of firm value (*Tobin's Q*) and disproportionate insider control. To this model, we add an interaction term of *WEDGE* and a composite measure of audit quality (*AUDQUAL*):

$$\begin{aligned}
 \text{Tobin's } Q = & \beta_0 + \beta_1 \text{WEDGE}_{it} + \beta_2 \text{WEDGE} * \text{AUDQUAL}_{it} + \beta_3 \text{AUDQUAL}_{it} + \beta_4 \text{AT}_{it} + \\
 & \beta_5 \text{LEVERAGE}_{it} + \beta_6 \text{NEGEQUITY}_{it} + \beta_7 \text{ROA}_{it} + \beta_8 \text{R\&D}_{it} + \beta_9 \text{CAPEX}_{it} + \\
 & \beta_{10} \text{ADVERTISING}_{it} + \beta_{11} \text{DIV}_{it} + \beta_{12} \text{ACQ}_{it} + \beta_{13} \text{FIRMAGE}_{it} + \beta_{14} \text{SP500}_{it} + \beta_k \text{YEAR} \\
 & + \beta_l \text{INDUSTRY} + \varepsilon
 \end{aligned}
 \tag{4}$$

Tobin's Q is the ratio of the market value of assets to their replacement cost. We examine *Tobin's Q* as well as the natural logarithm of *Tobin's Q*. Our composite measure of audit quality, *AUDQUAL*, is the principal factor of a confirmatory factor analysis of our five proxies for audit quality. Control variables included in model (4) are largely drawn from Gompers et al. (2010); variable definitions are provided in Appendix A. Results are summarized in Table 5.

[Insert Table 5 about here]

First, consistent with prior work, we find a significant negative association of disproportionate insider control and firm value, indicating that due to concerns about misappropriation, weak corporate governance, an increased risk of material misstatements, or low reputation, investors discount the value of shares of firms characterized by disproportionate insider

control. Second, crucially, the interaction of disproportionate control and audit quality, *WEDGE*AUDQUAL*, is positive, in support of our expectation.³²

The positive and significant interaction of *WEDGE*AUDQUAL* indicates that the appointment of higher quality auditors mitigates the negative effect of disproportionate insider control on firm value. This finding lends credence to the signaling, or self-bonding, explanation for our results. Investors value high audit quality in firms characterized by disproportionate insider control and reduce their valuation penalty. Insiders, who bear a significant portion of the value discount imposed by investors, accordingly have strong economic incentives to self-bond through increased audit quality (Jensen and Meckling 1976).³³

Extended Analysis: Differential Effects of Voting and Cash Flow Rights

Prior work establishes that firm value is related to insider ownership in a non-linear fashion: the association is positive at low levels of ownership, but turns negative as insider ownership increases (Morck et al. 1988; McConnell and Servaes 1990). The non-linear association of insider ownership and firm value is consistent with the notion that ownership conveys both a positive incentive-alignment effect as well as an opportunistic entrenchment effect. It is challenging for the empirical researcher to disentangle the two distinct consequences of insider ownership— incentives and entrenchment— in single-class firms, because they are confounded, and must be identified from only one variable: insider stock ownership.

³² We also examine cost of capital as an alternate metric to Tobin's Q to demonstrate the economic incentives to self-bond through higher quality audits. We find consistent results, i.e., *WEDGE* is associated with higher cost of capital, and the interaction term of *WEDGE*AUDQUAL*, is negative, indicating that increasing audit quality reduces the negative impact of disproportionate insider control on the firm's cost of capital. However, while consistent, these relationships are not statistically significant. We thank an anonymous reviewer for the suggestion to also examine cost of capital.

³³ For instance, in our sample, insiders own on average 77.8% (14.5%) of shares outstanding of the superior (inferior) class.

Our special setting of dual-class firms also allows us to *separately* assess the impact of incentive-alignment and entrenchment effects of ownership on the demand for audit quality. Table 6 displays the results of regressions of five proxies for clients' demand for audit quality on insider voting (*VR*) and cash flow rights (*CFR*) and controls. Reflecting the entrenchment (incentive-alignment) effects of ownership, we expect voting rights (cash flow rights) held by insiders to increase (decrease) the extent of agency problems, and hence the demand for audit quality.

[Insert Table 6 about here]

With respect to auditors' ability to discover a breach in the accounting system, we find positive (negative) associations of *VR* (*CFR*) and *BIG4* and *SPECIALIST* (Columns A and B). These findings indicate an increased demand for more capable auditors as insider voting rights increase, consistent with entrenchment effects of insider ownership. Insider cash flow rights, which proxy for the incentive-alignment effect of ownership, display an opposite association. Likewise, with respect to the second dimension of audit quality, auditor independence, we find negative (positive) associations of *VR* (*CFR*) and *DEPEND* and *NA/AUDFEES* (Columns C and D), which indicate a corresponding increased (decreased) demand for auditor's propensity to report a breach in the accounting system. The association of *VR* (*CFR*) and *AUDFEES* is positive (negative) (Column E), further corroborating our findings that incentive-alignment and entrenchment effects of ownership work in opposite directions. All of these associations are statistically significant except for those between *CFR* and *BIG4* and *DEPEND*.

These additional results provide evidence from our dual-class firm sample that the incentive-alignment and entrenchment effects of insider ownership indeed exhibit two distinct and separate effects on clients' demand for audit quality (Lennox 2005). We find a positive (negative) association of insider voting rights (insider cash flow rights) with our various proxies for the

demand for audit quality. These findings are consistent with agency theory, which suggests that entrenchment (incentive-alignment) effects of insider ownership will increase (decrease) clients' demand for audit quality.

Extended Analysis: Moderating Factors

The positive association between disproportionate control and the demand for audit quality we find may not be constant across all types of firms. We examine three possible factors that may moderate the association between *WEDGE* and our measures of audit quality: riskiness, size, and board monitoring strength. To this end, we include in models (1) and (2) interaction terms of *WEDGE* with return volatility (*RET_VOL*), *SIZE*, and the proportion of independent directors serving on the board of directors (*NUM_IND*).

While the relative riskiness of the firm arguably affects the demand for audit quality, we do not discern a significant interaction effect of *WEDGE*RET_VOL* with any of our five dependent variables. Similarly, we did not pick up a significant interaction of *WEDGE*NUM_IND* for any of our dependent variables, except for industry specialist auditor choice. In this case the interaction term indicates that weaker boards are more likely to hire specialist auditors, consistent with expectations.

We discern significant interactions of *WEDGE*SIZE* in our regressions of *SPECIALIST*, *DEPEND*, and *NA/AUDFEES* in the direction of smaller firms having a yet higher demand for audit quality compared to larger firms. This finding is possibly surprising because typically larger firms are more in the spotlight and hence considered to bear a higher reputational risk. On the other hand, exactly because smaller firms can more easily go under the radar, and hence arguably carry an increased risk of material misstatements and misappropriations, they may have stronger incentives for higher audit quality. Our findings are consistent with the latter explanation.

Robustness Tests

To further mitigate endogeneity concerns, we conduct a number of additional tests. Our primary control for endogeneity in the form of a correlated omitted variable bias is our 2SLS approach, reported in Table 3 and accompanying text. In addition, we test the robustness of our results to the inclusion of a number additional control variables in models (1) and (2).

One such possible omitted variable is the availability of private benefits of control. Insiders interested in extracting benefits of control may have incentives to establish weaker audits when more opportunities to extract perquisites exist. At the same time, insiders of firms with a higher capacity for private benefits are more likely to establish a dual-class structure that enables the extraction of private benefits while avoiding the pro-rata consequences of self-serving decisions. Following Masulis et al. (2009), we therefore control for existent opportunities for private benefits of control by including the variables predicting dual-class status from model (3) directly in our models (1) and (2).

We also test the robustness of our results to the influence of governance characteristics. Specifically, we include hand-collected control variables for board size, the percentage of independent directors serving on the board, and CEO-Chairman identity. We also include a hand-collected additional control for family firm status. The indicator variable *FAMILY* equals one if the founder(s) or their descendants possesses more than 25% of the voting power, and zero otherwise.³⁴ We further include four additional controls for accounting quality and the associated audit risk: Performance-matched discretionary accruals (*DAQ*) (Kothari, Leone, and Wasley

³⁴ Our primary control for family firm status our matched sample analysis, where we match dual- and single class firms on a proxy for family firm status among other characteristics.

2005); return volatility (*RET_VOL*);³⁵ an indicator variable for small positive earnings (*SPOS*) (Lang, Raedy, and Yetman 2003; Barth, Landsman, and Lang 2008); and, finally, an indicator variable for restatements (*RESTATE*). Results reported in Table 7 indicate that the inclusion of these additional controls does not affect our results.³⁶

[Insert Table 7 about here]

With respect to Big 4 auditor choice, Lawrence et al. (2011) suggest that the selection of a Big 4 auditor is explained by client characteristics, and in particular client size. Whether propensity score matching on client characteristics truly eliminates any Big 4 effect, or whether Lawrence et al.'s (2011) findings are due to design choices and a Big 4 effect indeed does persist, as argued by DeFond, Erkens, and Zhang (2016), will likely remain an unsettled question for some time. Given this current controversy surrounding the validity of Big 4 auditor choice as a proxy for audit quality, we conduct an additional robustness test, where we match a dual-class firm that chose a non-Big 4 audit firm with the dual-class firm closest in size that chose a Big 4 firm. In this size-matched sample, we successfully eliminate difference in firm size between dual-class firms that selected Big 4 auditors and those that did not at the univariate level. Results of a regression of model (1) using this sample are similar to those reported in Table 2, Column A. Disproportionate insider control, *WEDGE*, continues to be positively, and significantly, associated with engaging a Big 4 auditor ($p < .05$).³⁷

³⁵ We report results using daily stock returns volatility measured over the prior year. We alternatively compute return volatility as the monthly stock return volatility over the prior sixty-month period. Likewise, we alternatively employ discretionary accruals derived from the modified Jones model.

³⁶ We do not include these variables in our main results because they are largely not significant in the presence of other controls in our model but do reduce our sample size. For brevity, we tabulate results when jointly including all additional control variables in our regression. Results are not affected when including the additional control variables one at a time.

³⁷ We thank the editor for suggesting this test. Results available upon request.

To ensure that our results are not sensitive to the specific constructions of our dependent variables, we examine alternate definitions for audit firm industry specialization and independence. As an alternate specification of industry specialization, we define an industry specialist as one that maintains a national market share greater than 25% (30%) from 2000 to 2002 (2003 to 2016) and a city market share greater than 50% (Neal and Riley 2004; Kang 2014); results are qualitatively similar. We also test a dichotomous measure of economic dependence, and define an economically dependent auditor as one that obtains more 10% of its revenue from the client. Results using this alternate specification of economic dependence are nearly identical to our tabulated results. Finally, when using the ratio of non-audit to total fees, instead of the ratio of non-audit to audit fees, the coefficient on *WEDGE* continues to be negative, but is slightly weaker ($p = 0.11$, one-tailed).³⁸

We also employ a number of alternate specifications for our control variables. We alternatively control for segments using the total number of segments (business, operating, and geographic) instead of the number of business segments only; define firm size alternatively as the natural logarithm of total assets; and compute *LEVERAGE* as total debt to total assets (instead of total liabilities to total assets). None of these choices alter our results. Likewise, all results, including the results for the industry specialist model, are robust to using Fama-French (1997) industries, instead of GICS industries, for defining industry specialization and as industry controls.

5. SUMMARY AND CONCLUSION

We examine the relationship between disproportionate insider control in dual-class firms and the demand for audit quality. Because a dual-class structure of equity enables insiders to exert

³⁸ We surmise offsets are the main reason for weakened results when using total fees in the denominator, because the higher audit fees and lower non-audit fees we find among dual-class firms cancel out when added together.

disproportionate influence in the corporation, concern exists as to the monitoring ability of outside shareholders and/or the monitoring effectiveness of the board of directors (Baran and Forst 2015). For instance, in the context of Facebook's 2012 IPO, Institutional Shareholder Services (ISS 2012) warned of the "autocratic model of governance" in dual-class firms that may be less viable than companies in which all shareholders have proportional rights. Despite concerns about weak corporate governance, dual-class firms have grown rapidly in the U.S. capital market in recent years. In 2015, almost a quarter of all firms going public in the U.S. went public with a dual-class structure of shares.³⁹ In 2005, the proportion was 1% (Feldman 2016).

Prior empirical work on how disproportionate insider control affects the demand for audit quality has been limited, and at times contradictory (Niu 2008; Khalil et al. 2008). Using a comprehensive, hand-collected sample of U.S. dual-class firms from 2000 to 2016, we examine both components of DeAngelo's (1981) definition of audit quality, i.e., the probabilities that the auditor will (1) discover a breach in the accounting system and (2) report the breach, and use multiple measures for each component.

We find that disproportionate insider control is positively associated with audit fees, the likelihood of hiring a Big 4 or specialist auditor, and auditor independence (measured as fee dependence and the ratio of non-audit to audit fees). These findings reflect an increased demand for audit quality in the form of an increased demand for auditor capability, as well as an increased demand for auditor independence. Both are consistent with a desire to use enhanced external monitoring as a self-bonding mechanism (Jensen and Meckling 1976). Indeed, in extended analyses we find that audit quality alleviates the negative effect of disproportionate insider control

³⁹ Picking up on the sharply increasing trend of U.S. dual-class IPOs, and concerned about a loss of market share, the Hong Kong and Singapore stock exchanges are currently considering lifting their prohibition of dual-class stock listings, <http://www.taipeitimes.com/News/biz/archives/2017/02/18/2003665180>.

on firm value, which gives credence to self-bonding as an economically important explanation for the positive association between disproportionate control and audit quality we observe.

In extended analyses, we also examine the association of the distinct incentive-alignment effect and entrenchment effect with the demand for audit quality. We find that voting rights, which proxy for the entrenchment effect of ownership, are associated with higher audit fees, a higher likelihood to engage a Big 4 or specialist auditor, and increased auditor independence. Conversely, we find that cash flow rights owned by insiders, a proxy for the incentive-alignment effects of ownership, display associations in the opposite direction: lowered audit fees, a lower propensity to hire a Big 4 or industry specialist auditor, and decreased auditor independence. These findings from dual-class firms validate the conjectures in Lennox (2005), Niskanen et al. (2011), and Gotti et al. (2012), who predict a non-linear association of insider ownership with audit quality due to the contravening entrenchment and incentive-alignment effects of ownership.

In a recent development, citing a concern for shareholder rights in dual-class firms, index firms FTSE Russell declared that it will exclude companies with low, or no, voting rights from its indices. In turn, S&P Dow Jones announced to exclude all companies with multiple-class share structures from inclusion in the S&P Composite 1500 and component indices, including its flagship S&P 500. S&P Dow Jones's decision however will not apply to its existing index constituents.⁴⁰

We see the two index makers' 2016 decision as evidence for an intensifying battle about inferior governance and shareholder rights in firms that enable disproportionate insider control. Whether and how these changes will affect new public companies' decision to adopt dual-class

⁴⁰ FTSE Russell's decision leaves latitude for issuers to implement share classes with differential voting rights, as long as the voting power of outside shareholders meets a 5% minimum threshold. S&P Dow Jones' policy to exclude all new companies with multiple-class share structures from its key indices is much broader. <https://corpgov.law.harvard.edu/2017/08/05/sp-and-ftse-russell-on-exclusion-of-companies-with-multi-class-shares/>.

structures remains to be seen. Our findings of enhanced audit quality in firms with disproportionate insider control fit in the context of these developments. Firms under attack for weak governance and inferior shareholder rights certainly have strong incentives to put investors' concerns at ease through increased audit quality.

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Appendix A Variable Definitions

ACQ	Cash value of acquisitions scaled by total assets.
ADVERTISING	Ratio of advertising expense to total assets.
AUDQUAL	Audit quality calculated as the principal factor value from a factor analysis of our five proxies of demand for audit quality: <i>BIG4</i> , <i>SPECIALIST</i> , <i>DEPEND</i> , <i>AUDFEES</i> , <i>NA/AUDFEES</i> .
AT	Natural log of total assets.
AUDFEES	Natural log of audit fees.
BIG4	An indicator variable that equals one if the auditor is a Big 4 audit firm (Big 5 prior to 2002), and zero otherwise.
BSIZE	Board of director size.
CAPEX	Ratio of capital expenditures to total assets.
CAPINT	Ratio of gross property, plant, and equipment to total revenues.
CATA	Ratio of current assets to total assets.
CEO_IS_CHAIR	Indicator variable equal to one (zero otherwise) if the CEO is also chairman of the board of directors.
CFR	Insider cash flow rights defined as the proportion of cash flow rights owned by insiders to the total cash flow rights of the firm.
DAQ	Performance-matched discretionary accrual quality derived from the modified Jones model (Kothari et al. 2005)
DC	Indicator variable equal to one for dual-class firms and zero for single-class firms.
DEPEND	Fee dependence defined as the ratio of total client fees to all fees from publicly traded clients for a given auditor office in the year, requiring at least ten fee observations.
DIV	Cash value of dividends paid scaled by common equity.
FAMILY	Indicator variable taking a value of 1 if the firm founder or family members control more than 25% of voting rights.
FIRMAGE	Natural log of firm age.
FOREIGN	Indicator variable that equals one if foreign income is reported, and zero otherwise.
INDUSTRY	Industry fixed effects, based on GICS industries.
INVMILLS	The inverse Mills ratio derived from model (3) and included as a control for sample selection bias.
LEVERAGE	Ratio of total liabilities to total assets.
LISTINGYEAR	Indicator variables for the year of first appearance in CRSP
LITRISK	Indicator variable that takes a value of one (and zero otherwise) if the firm is subject to high litigation risk. High litigation risk firms are SIC codes 2800-2899, 3500-3699, 3800-3899, or 7300-7399 (Gul, Jaggi, and Krishnan 2007).
LOSS	Indicator variable that equals one if net income is negative, and zero otherwise.
MA	Indicator variable that takes a value of one (and zero otherwise) if the firm engages in merger and acquisition activity in a given year.
MEDIA	Indicator variable equal to one if the firm operated in the media industry, zero otherwise. Media industries are SIC codes 2710-2711, 2720-2721, 2730-2731, 4830, 4832-4833, 4840-4841, 7810, 7812, and 7820 (Gompers et al. 2010).
MEDIA_IPO	Indicator variable equal to one if a firm is a member of a media industry as defined at IPO per Gompers et al. (2010), zero otherwise.
M_to_B	Ratio of the market value of equity to the book value of equity.

NA/AUDFEES	Ratio of non-audit to audit fees.
NAME	Indicator variable equal to one if the company name contains a person's name at IPO, and zero otherwise. ⁴¹
NEGEQUITY	Indicator variable equal to one (zero otherwise) if a firm has negative equity.
NOT_UNQUAL	Indicator variable that equals one if the audit opinion is other than unqualified without additional language, and zero otherwise.
NUM_IND	Proportion of independent directors on the board of directors.
PROFITRANK	The percentile ranking of the firm's profitability in the year of its IPO relative to firms with the same IPO year.
RESTATE	Indicator variable equal to one (zero otherwise) if financial statements have been restated.
RET_VOL	Standard deviation of the prior year daily stock returns.
ROA	Ratio of income before extraordinary items to total assets.
R&D	Research and development expense scaled by total assets.
SALES/REGIONSALLES	The percentage of the firm's sales relative to the sales of all firms in the same CBSA in the year of its IPO.
SALESGR	Annual sales growth.
SALESRANK	The percentile ranking of the firm's sales in the year of its IPO relative to firms with the same IPO year.
SEGMENTS	Number of business segments
SIZE	Natural log of market value of equity.
SP500	Indicator variable for S&P 500 inclusion.
SPECIALIST	An indicator variable which equals one if the audit firm is an industry specialist, based on whether the firm has the largest market share in a GICS industry category and its market share is at least 10 percent greater than the next largest industry leader in both the national and regional market, and zero otherwise (Kang 2014). We define the audit office's regional market based on the Core-based Statistical Area (CBSA). If the audit firm's ZIP code is not associated with a CBSA, we use the county as the relevant geographic area to define the audit market.
SPOS	Indicator variable equal to one (zero otherwise) if net income scaled by total assets is between 0.00 and 0.01 (Lang et al. 2003; Barth et al. 2008).
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.
TOBIN'S Q	Tobin's Q, defined as $(\text{Book Value of Assets} + \text{Market Value of Equity} - \text{Book Value of Equity} - \text{Deferred Taxes}) / \text{Book Value of Assets}$.
VR	Insider voting rights defined as the proportion of votes held by insiders to the total existing voting rights in a given firm.
WEDGE	The difference between insider voting rights and cash flow rights. <i>WEDGE</i> equals zero for single-class firms by definition.
YEAR	Year fixed effects.
Z_SCORE	The Altman Z-score.
%FIRMS	The percentage of all firms located in the firm's CBSA in the year prior to the firm's IPO
%SALES	The percentage of all sales generated in the firm's CBSA in the year prior to the firm's IPO.

⁴¹ We thank Paul Gompers, Joy Ishii, and Andrew Metrick for providing the name indicator variable for the universe of firms in Gompers et al. (2010). For firms not included in their study, we follow the same procedure used in Gompers et al. (2010) to identify the presence of a family name in the firm name.

Table 1
Descriptive Statistics of Dual-Class Firm Characteristics and Key Variables

Panel A: Select characteristics of dual-class firm sample and variables of interest, n = 3,647

	Mean	Std. Dev.	Q1	Median	Q3
More than two classes of shares	0.062	0.240	0.000	0.000	0.000
Unequal number of votes per class	0.970	0.170	1.000	1.000	1.000
Disproportionate board representation	0.305	0.460	0.000	0.000	1.000
Unequal dividends per class	0.109	0.311	0.000	0.000	0.000
Equal voting and dividend rights	0.023	0.151	0.000	0.000	0.000
Negative divergence: <i>CFR</i> exceed <i>VR</i>	0.046	0.209	0.000	0.000	0.000
<i>VR</i>	0.566	0.265	0.375	0.620	0.760
<i>CFR</i>	0.289	0.211	0.121	0.240	0.427
<i>WEDGE</i>	0.277	0.196	0.130	0.284	0.411

Panel B: Dependent and control variables in matched dual- and single-class firm sample, n = 6,320

Dependent variables	Dual (n = 3,160)		Single (n = 3,160)		t-stat.
	Mean	Median	Mean	Median	
<i>BIG4</i>	0.822	1.000	0.813	1.000	0.98
<i>SPECIALIST</i>	0.091	0.000	0.079	0.000	1.67 ^c
<i>DEPEND</i>	0.043	0.019	0.046	0.021	-1.63
<i>NA/AUD_FEES</i>	0.567	0.213	0.544	0.212	0.56
<i>AUDFEES</i>	13.622	13.626	13.584	13.639	1.24
Control variables					
<i>SIZE</i>	6.281	6.297	6.168	6.284	2.15 ^b
<i>M_to_B</i>	2.221	1.653	5.432	1.965	-1.40
<i>LEVERAGE</i>	0.524	0.494	0.557	0.535	-4.26 ^a
<i>ROA</i>	-0.016	0.031	-0.027	0.036	0.86
<i>FOREIGN</i>	0.268	0.000	0.259	0.000	0.74
<i>SEGMENTS</i>	2.389	2.000	2.308	1.000	1.62
<i>LOSS</i>	0.290	0.000	0.297	0.000	-0.66
<i>MA</i>	0.132	0.000	0.163	0.000	-3.48 ^a
<i>LITRISK</i>	0.293	0.000	0.359	0.000	-5.59 ^a
<i>CAPINT</i>	2.530	0.425	1.208	0.366	1.07
<i>CATA</i>	0.458	0.460	0.469	0.464	-1.87 ^c
<i>Z_SCORE</i>	-1.265	-1.578	-1.016	-1.364	-2.71 ^a
<i>NOT_UNQUAL</i>	0.352	0.000	0.350	0.000	0.16

This study uses a hand-collected sample of 3,647 dual-class firm-year observations (499 unique firms) between 2000 and 2016 for which matching data are available in the Compustat, CRSP, and AuditAnalytics databases. *VR* are voting rights defined as the proportion of voting rights held by insiders; *CFR* is the proportion of dividend rights owned by insiders. *WEDGE* is the divergence of insider voting rights from cash flow rights computed as the difference *VR* and *CFR*. All other variables are defined in Appendix A.

Table 2
Dual-Class Sample: Effects of Disproportionate Insider Control on Clients' Demand for Audit Quality

Dependent Variable:	Column A <i>BIG4</i>		Column B <i>SPECIALIST</i>		Column C <i>DEPEND</i>		Column D <i>NA/AUDFEES</i>		Column E <i>AUDFEES</i>	
	Coeff. est.	Wald χ^2 stat.	Coeff. est.	Wald χ^2 stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.
<i>WEDGE</i>	0.516	6.74 ^a	0.454	5.85 ^b	-0.041	-2.39 ^b	-0.497	-2.00 ^b	0.322	2.53 ^b
Controls										
<i>SIZE</i>	0.494	327.89 ^a	0.084	14.97 ^a	0.012	5.27 ^a	0.150	5.41 ^a	0.369	21.00 ^a
<i>M_to_B</i>	-0.001	0.07	-0.002	0.82	0.001	0.11	0.001	1.31	-0.001	-1.20
<i>LEVERAGE</i>	0.864	6.91 ^a	0.459	2.04	0.041	3.16 ^a	-0.136	-0.90	1.088	6.43 ^a
<i>ROA</i>	-1.989	20.50 ^a	-0.518	1.95	-0.013	-1.12	0.243	1.31	-0.623	-3.88 ^a
<i>FOREIGN</i>	0.315	12.65 ^a	0.026	0.09	0.007	0.99	-0.088	-0.95	0.308	5.96 ^a
<i>SEG</i>	-0.008	0.19	0.030	3.66 ^c	0.002	1.04	0.006	0.21	0.053	5.02 ^a
<i>LOSS</i>	-0.090	0.93	-0.019	0.04	0.008	1.88 ^c	0.103	1.55	0.174	4.30 ^a
<i>MA</i>	0.001	0.00	-0.210	3.33 ^c	0.007	1.42	-0.077	-1.71 ^c	0.114	2.88 ^a
<i>LITRISK</i>	0.273	5.73 ^b	-0.462	9.84 ^a	-0.004	-0.54	-0.134	-0.96	0.151	1.98 ^b
<i>CAPINT</i>	-0.050	3.14 ^c	-0.085	3.74 ^c	0.002	2.58 ^b	-0.017	-0.73	-0.035	-2.39 ^b
<i>CATA</i>	-0.262	1.67	-0.260	1.44	-0.009	-0.67	0.027	0.14	-0.196	-1.36
<i>Z_SCORE</i>	-0.041	0.76	-0.016	0.11	-0.002	-2.35 ^b	0.017	0.90	-0.052	-2.58 ^a
<i>NOT_UNQUAL</i>							0.041	0.57	0.152	5.00 ^a
<i>SPECIALIST</i>							0.284	1.87 ^c	0.139	2.29 ^b
<i>BIG4</i>							-0.237	-1.66 ^c	0.308	4.63 ^a
<i>INVMILLS</i>	-0.382	12.33 ^a	0.113	0.93	-0.003	-0.35	-0.075	-0.86	-0.157	-1.94 ^c
Adjusted R ² /Pseudo-R ²		0.534		0.217		0.193		0.138		0.776
N		3,647		3,647		2,973		3,647		3,647

WEDGE is the divergence of insider voting rights from cash flow rights computed as the difference between *VR*, the proportion of voting rights held by insiders, and *CFR*, the proportion of dividend rights owned by insiders. All other variables are defined in Appendix A. All models include an intercept, as well as year and industry indicator variables. Columns A and B report probit regressions; Columns C through E report regressions where test statistics and significance levels are calculated based on standard errors (Rogers) clustered at the firm level. Letters a, b, and c denote significance at the 1%, 5%, and 10% levels, respectively (two-sided tests).

Table 3
Dual-Class Sample (2SLS): Effects of Disproportionate Insider Control on Clients' Demand for Audit Quality

Dependent Variable:	Column A <i>BIG4</i>		Column B <i>SPECIALIST</i>		Column C <i>DEPEND</i>		Column D <i>NA/AUDFEES</i>		Column E <i>AUDFEES</i>	
	Coeff. est.	Wald χ^2 stat.	Coeff. est.	Wald χ^2 stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.
<i>WEDGE</i>	3.75	9.44 ^a	3.236	8.207 ^a	-0.501	-6.68 ^a	-0.808	-0.90	2.812	3.06 ^a
Controls										
<i>SIZE</i>	0.491	318.96 ^a	0.075	11.59 ^a	0.012	5.21 ^a	0.153	5.32 ^a	0.360	20.73 ^a
<i>M_to_B</i>	0.001	0.02	-0.001	0.29	0.001	1.68 ^c	0.001	0.93	0.001	0.25
<i>LEVERAGE</i>	1.026	9.31 ^a	0.644	3.93 ^b	0.006	0.46	-0.151	-0.99	1.218	7.59 ^a
<i>ROA</i>	-2.176	23.66 ^a	-0.679	3.28 ^c	0.018	1.36	0.258	1.40	-0.771	-4.64 ^a
<i>FOREIGN</i>	0.303	11.51 ^a	0.008	0.01	0.008	1.27	-0.083	-1.67 ^c	0.277	5.35 ^a
<i>SEG</i>	-0.025	1.64	0.013	0.56	0.004	2.25 ^b	0.007	0.26	0.040	3.23 ^a
<i>LOSS</i>	-0.069	0.55	-0.007	0.01	-0.001	-0.33	0.101	1.48	0.183	4.54 ^a
<i>MA</i>	0.063	0.28	-0.167	2.05	-0.004	-0.84	-0.082	-1.67 ^c	0.156	3.70 ^a
<i>LITRISK</i>	0.320	7.48 ^a	-0.434	8.83 ^a	-0.017	-2.18 ^b	-0.142	-1.02	0.213	2.75 ^a
<i>CAPINT</i>	-0.052	3.37 ^c	-0.080	3.44 ^c	0.002	3.31 ^a	-0.018	-0.78	-0.032	-2.18 ^b
<i>CATA</i>	-0.523	5.50 ^b	-0.434	3.61 ^c	0.025	1.61	0.050	0.25	-0.390	-2.45 ^b
<i>Z_SCORE</i>	-0.040	0.71	-0.017	0.13	-0.001	-1.06	0.017	0.90	-0.052	-2.70 ^a
<i>NOT_UNQUAL</i>							0.048	0.63	0.144	4.78 ^a
<i>SPECIALIST</i>							0.276	1.81 ^c	0.133	2.34 ^b
<i>BIG4</i>							-0.250	-1.65 ^c	0.314	4.58 ^a
<i>INVMILLS</i>	-0.338	9.32 ^a	0.169	1.96	-0.017	-2.31 ^b	-0.065	-0.77	-0.113	-1.49
Adjusted R ² /Pseudo-R ²		0.535		0.219		0.226		0.136		0.778
N		3,647		3,647		2,973		3,647		3,647

WEDGE is the divergence of insider voting rights from cash flow rights computed as the predicted value of *WEDGE* following Gompers et al. (2010) – see footnote 23 of this paper. All other variables are defined in Appendix A. All models include an intercept, as well as year and industry indicator variables. Columns A and B report probit regressions; Columns C through E report regressions where test statistics and significance levels are calculated based on standard errors (Rogers) clustered at the firm level. Letters a, b, and c denote significance at the 1%, 5%, and 10% levels, respectively (two-sided tests).

Table 4
Matched Sample: Effects of Disproportionate Insider Control on Clients' Demand for Audit Quality

Dependent Variable:	Column A <i>BIG4</i>		Column B <i>SPECIALIST</i>		Column C <i>DEPEND</i>		Column D <i>NA/AUDFEES</i>		Column E <i>AUDFEES</i>	
	Coeff. est.	Wald χ^2 stat.	Coeff. est.	Wald χ^2 stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.
<i>WEDGE</i>	0.121	0.91	0.291	4.90	-0.020	-2.06	-0.241	-2.18	0.204	2.52
Controls										
<i>SIZE</i>	0.509	860.67 ^a	0.148	92.21 ^a	0.010	6.73 ^a	0.135	7.48 ^a	0.382	36.30 ^a
<i>M_to_B</i>	0.001	0.25	-0.001	1.04	-0.001	-1.81 ^c	-0.001	-1.33	0.001	0.94
<i>LEVERAGE</i>	0.966	64.57 ^a	0.159	0.97	0.018	3.44 ^a	-0.061	-0.79	0.948	12.85 ^a
<i>ROA</i>	-0.811	21.67 ^a	-0.455	5.51 ^b	0.001	0.00	0.177	1.86 ^c	-0.323	-4.46 ^a
<i>FOREIGN</i>	0.134	5.22 ^b	0.041	0.44	0.007	1.59	-0.097	-2.25 ^b	0.292	8.77 ^a
<i>SEG</i>	-0.005	0.12	0.015	1.63	0.001	0.96	0.009	0.58	0.050	7.26 ^a
<i>LOSS</i>	-0.028	0.21	-0.023	0.10	0.010	2.59 ^a	0.105	2.11 ^b	0.220	8.08 ^a
<i>MA</i>	-0.060	0.65	-0.079	0.98	0.003	0.70	-0.042	-1.59	0.146	5.32 ^a
<i>LITRISK</i>	0.033	0.21	-0.370	18.90 ^a	-0.005	-1.34	-0.043	-0.79	0.066	1.32
<i>CAPINT</i>	-0.030	1.26	-0.001	0.00	0.001	0.74	0.008	0.39	-0.073	-5.03 ^a
<i>CATA</i>	-0.103	0.59	0.076	0.25	-0.008	-0.91	0.041	0.34	-0.164	-1.92 ^c
<i>Z_SCORE</i>	-0.014	3.20 ^c	-0.009	0.26	0.001	0.11	0.004	1.49	-0.013	-3.68 ^a
<i>NOT_UNQUAL</i>							-0.004	-0.10	0.159	7.18 ^a
<i>SPECIALIST</i>							0.235	2.89 ^a	0.106	2.61 ^a
<i>BIG4</i>							-0.161	-1.95 ^c	0.343	7.98 ^a
Adjusted R ² /Pseudo-R ²		0.463		0.170		0.124		0.149		0.780
N		6,320		6,320		5,200		6,320		6,320

WEDGE is the divergence of insider voting rights from cash flow rights computed as the difference between *VR*, the proportion of voting rights held by insiders, and *CFR*, the proportion of dividend rights owned by insiders. All other variables are defined in Appendix A. All models include an intercept, as well as year and industry indicator variables. Columns A and B report probit regressions; Columns C through E report regressions where test statistics and significance levels are calculated based on standard errors (Rogers) clustered at the firm level. Letters a, b, and c denote significance at the 1%, 5%, and 10% levels, respectively (two-sided tests).

Table 5
Matched Sample: Effect of Disproportionate Insider Control and Demand for Audit Quality on Firm Value

Dependent Variable:	Column A <i>TobinQ</i>		Column B <i>Ln_TobinQ</i>	
	Coeff. est.	t-stat.	Coeff. est.	t-stat.
<i>WEDGE</i>	-0.355	-2.89 ^a	-0.223	-3.84 ^a
<i>WEDGE</i> * <i>AUDQUAL</i>	0.804	3.75 ^a	0.327	2.78 ^a
<i>AUDQUAL</i>	-0.168	-2.41 ^b	-0.029	-1.07
Controls				
<i>AT</i>	-0.026	-1.06	-0.007	-0.69
<i>LEVERAGE</i>	0.001	0.01	-0.029	-0.57
<i>ROA</i>	0.607	2.94 ^a	0.422	6.18 ^a
<i>NEGEQUITY</i>	0.970	8.21 ^a	0.488	10.18 ^a
<i>R&D</i>	5.625	6.62 ^a	2.297	9.24 ^a
<i>CAPEX</i>	3.615	5.39 ^a	1.683	6.14 ^a
<i>ADVERTISING</i>	2.529	3.07 ^a	1.258	4.09 ^a
<i>DIV</i>	2.766	5.10 ^a	1.458	7.86 ^a
<i>ACQ</i>	0.227	0.76	0.284	2.44 ^b
<i>FIRMAGE</i>	-0.260	-4.20 ^a	-0.084	-3.40 ^a
<i>SP500</i>	0.544	6.28 ^a	0.239	6.24 ^a
Adjusted R ²		0.307		0.345
N		5,200		5,200

WEDGE is the divergence of insider voting rights from cash flow rights computed as the difference between *VR*, the proportion of voting rights held by insiders, and *CFR*, the proportion of dividend rights owned by insiders. All other variables are defined in Appendix A. All models include an intercept, as well as year and industry indicator variables. Test statistics and significance levels are calculated based on standard errors (Rogers) clustered at the firm level. Letters a, b, and c denote significance at the 1%, 5%, and 10% levels, respectively (two-sided tests).

Table 6
Dual-Class Sample: Effects of Insider Voting Rights and Cash Flow Rights on Clients' Demand for Audit Quality

Dependent Variable:	Column A <i>BIG4</i>		Column B <i>SPECIALIST</i>		Column C <i>DEPEND</i>		Column D <i>NA/AUDFEES</i>		Column E <i>AUDFEES</i>	
	Coeff. est.	Wald χ^2 stat.	Coeff. est.	Wald χ^2 stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.
<i>VR</i>	0.605	9.50 ^a	0.382	4.30 ^b	-0.046	-2.67 ^a	-0.472	-1.94 ^c	0.297	2.39 ^b
<i>CFR</i>	-0.054	0.05	-1.04	17.00 ^a	0.009	0.55	0.537	2.20 ^b	-0.493	-3.20 ^a
Controls										
<i>SIZE</i>	0.510	330.40 ^a	0.077	12.49 ^a	0.011	5.31 ^a	0.151	5.49 ^a	0.366	20.70 ^a
<i>M_to_B</i>	-0.001	0.13	-0.002	0.66	0.001	0.75	0.001	1.27	-0.001	-1.01
<i>LEVERAGE</i>	0.948	7.91 ^a	0.453	2.02	0.041	3.19 ^a	-0.132	-0.87	1.080	6.40 ^a
<i>ROA</i>	-2.112	22.24 ^a	-0.483	1.73	-0.010	-0.85	0.234	1.30	-0.601	-3.70 ^a
<i>FOREIGN</i>	0.279	9.76 ^a	0.052	0.35	0.008	1.13	-0.090	-0.97	0.315	6.11 ^a
<i>SEG</i>	-0.007	0.17	0.026	2.77 ^c	0.002	0.86	0.006	0.22	0.052	4.94 ^a
<i>LOSS</i>	-0.099	1.11	-0.004	0.00	0.008	1.97 ^b	0.102	1.55	0.177	4.42 ^a
<i>MA</i>	0.006	0.00	-0.231	3.98 ^b	0.006	1.30	-0.076	-1.68 ^c	0.109	2.77 ^a
<i>LITRISK</i>	0.266	5.34 ^b	-0.455	10.75 ^a	-0.003	-0.39	-0.135	-0.97	0.158	2.06 ^b
<i>CAPINT</i>	-0.057	4.10 ^b	-0.074	2.93 ^c	0.002	2.44 ^b	-0.018	-0.75	-0.033	-2.36 ^b
<i>CATA</i>	-0.253	1.55	-0.239	1.20	-0.009	-0.63	0.023	0.12	-0.189	-1.33
<i>Z_SCORE</i>	-0.045	0.87	-0.018	0.14	-0.002	-2.24 ^b	0.017	0.87	-0.051	-2.46 ^b
<i>NOT_UNQUAL</i>							0.043	0.62	0.146	4.81 ^a
<i>SPECIALIST</i>							0.286	1.91 ^c	0.132	2.16 ^b
<i>BIG4</i>							-0.238	-1.69 ^c	0.313	4.74 ^a
<i>INVMILLS</i>	-0.382	12.32 ^a	0.134	1.29	-0.002	-0.25	-0.075	-0.87	-0.154	-1.94 ^c
Adjusted R ² /Pseudo-R ²		0.537		0.224		0.203		0.138		0.777
N		3,674		3,647		2,973		3,647		3,647

WEDGE is the divergence of insider voting rights from cash flow rights computed as the difference between *VR*, the proportion of voting rights held by insiders, and *CFR*, the proportion of dividend rights owned by insiders. All other variables are defined in Appendix A. All models include an intercept, as well as year and industry indicator variables. Columns A and B report probit regressions; Columns C through E report regressions where test statistics and significance levels are calculated based on standard errors (Rogers) clustered at the firm level. Letters a, b, and c denote significance at the 1%, 5%, and 10% levels, respectively (two-sided tests).

Table 7
Dual-Class Sample: Robustness Tests

Dependent Variable:	Column A <i>BIG4</i>		Column B <i>SPECIALIST</i>		Column C <i>DEPEND</i>		Column D <i>NA/AUDFEES</i>		Column E <i>AUDFEES</i>	
	Coeff. est.	Wald χ^2 stat.	Coeff. est.	Wald χ^2 stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.	Coeff. est.	t-stat.
<i>WEDGE</i>	0.762	10.54 ^a	0.386	3.17 ^c	-0.025	-1.78 ^c	-0.427	-1.87 ^c	0.265	2.30 ^b
Additional Controls										
<i>BSIZE</i>	0.089	9.79 ^a	0.008	0.10	-0.002	-1.00	-0.025	-1.30	0.018	1.45
<i>NUM_IND</i>	-0.036	1.34	0.050	3.65 ^c	0.006	2.78 ^a	0.056	2.14 ^b	0.056	3.99 ^a
<i>CEO_IS_CHAIR</i>	-0.254	9.98 ^a	-0.030	0.15	0.002	0.37	0.103	1.21	-0.012	-0.34
<i>FAMILY</i>	-0.184	3.86 ^b	-0.069	0.46	-0.002	-0.30	-0.067	-0.66	0.040	0.75
<i>DAQ</i>	0.033	0.91	-0.093	5.57 ^b	-0.001	-1.14	0.001	0.06	0.025	2.68 ^a
<i>RET_VOL</i>	-3.893	3.43 ^c	2.577	1.19	0.299	2.34 ^b	1.584	0.78	2.612	3.33 ^a
<i>SPOS</i>	-0.219	2.35	-0.119	0.57	0.008	1.67 ^c	0.116	1.01	0.194	4.43 ^a
<i>RESTATE</i>	-0.029	0.07	-0.016	0.02	0.004	1.00	-0.081	-2.00 ^b	0.109	3.98 ^a
<i>IVs from model (3)</i>		Included		Included		Included		Included		Included
Adjusted R ² /Pseudo-R ²		0.574		0.312		0.261		0.139		0.804
N		3,593		3,593		2,933		3,593		3,593

WEDGE is the divergence of insider voting rights from cash flow rights computed as the difference between *VR*, the proportion of voting rights held by insiders, and *CFR*, the proportion of dividend rights owned by insiders. All other variables are defined in Appendix A. All models include an intercept, all controls from Models 1 (Columns A through C) or 2 (Columns D and E), as well as year and industry indicator variables. Columns A and B report probit regressions; Columns C through E report regressions where test statistics and significance levels are calculated based on standard errors (Rogers) clustered at the firm level. Letters a, b, and c denote significance at the 1%, 5%, and 10% levels, respectively (two-sided tests).