Bucking the Trend: Why do IPOs Choose Controversial Governance Structures and Why Do Investors Let Them

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Keywords: IPOs, governance, dual class, classified board, shareholder voting, founders, carve-outs

JEL Classifications: G23, G32, G34

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Bucking the trend: Why do IPOs choose controversial governance structures and why do investors let them?

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1. Introduction

Over the past three decades, there has been increased concern about the negative effects of corporate governance structures such as classified boards and dual class stock, which have been found to entrench managers, reduce director effectiveness, and reduce firm value.[1] Activist investors have become increasingly vocal in their opposition to firms with poor governance, and likely in response to such concerns, mature firms have increasingly eliminated these structures. While almost 60% of S&P1500 firms had a classified board in the decade from 1990 to 2000, only 35% had a classified board by 2017. There has been a similarly stark decline in firms with dual class share structures: from 12% of the S&P1500 in the 1990-2000 decade, to 7% in 2017.

Strikingly, newly public firms' structures have moved in the opposite direction. As shown in Figure 1, the percentage of firms going public with a classified board has nearly doubled, from 40% in 1990 to over 70% in 2017, and the percentage with dual class stock has more than doubled, from less than 10% before 2000 to more than 25% of all IPOs in 2017.

These contrasting trends raise challenging questions regarding firms' corporate governance choices. Market participants have learned to appreciate the difference between good- and poor-governance (see, e.g., Bebchuk, Cohen and Wang, 2013), and mature firms have been pressured into eliminating poor governance structures. However, young firms are increasingly able to go public with these seemingly poor governance structures in place. The objective of this paper is to study the forces underlying these strikingly different trends.

We begin with the null hypothesis that firms go public with the governance structures that are optimal for them, which we refer to as the *Optimal Governance Hypothesis*. Classified boards and

[1] In firms with classified boards, also known as staggered boards, directors typically serve three-year terms, with one-third of the directors up for election in any given year. Thus, it takes at least two election cycles for dissidents to gain majority control of the board. With dual class shares, typically the firm has two classes of shares; insiders hold the high-voting shares (e.g., ten votes per share) and IPO investors purchase shares with low votes (typically one vote per share). For evidence on classified boards, see, e.g., Bebchuk, Coates, and Subramanian (2002), Bebchuk and Cohen (2005), Faleye (2007), Guo, Kruse and Nohel (2008), and Cremers, Litov and Sepe (2017). For evidence on dual class share structures, see, e.g., Masulis, Wang and Xie (2009) and Gompers, Ishii, Metrick (2010).

dual class share structures provide benefits as well as costs, and the benefits are more valuable for certain types of firms. Bratton and Wachter (2010), Strine (2006), and Lipton and Rosenblum (1991) argue that classified boards make directors less susceptible to short-term market pressures (see, e.g., Stein, 1988, 1989), since directors are up for election only once every three years. Dual class stock similarly shields firm insiders from the whims of short-term investors, in this case by separating control rights from cash flow rights. The costs of these structures will be lower among firms with other mechanisms to control agency costs, for example incentive-based compensation structures, and the benefits of these structures should be greater among firms with high information asymmetry, in which managers cannot credibly convey the value of long-term initiatives to external investors. The Optimal Governance Hypothesis posits that the net benefits of classified boards and dual class stock are positive – particularly in more recent years – for newly public firms, which tend to have high information asymmetry and are more likely to employ stock-based compensation.

The alternative *Agency Hypothesis* posits that managers establish classified boards or dual class shares to entrench themselves (Jensen, 1988; Jensen, 1993). Under this hypothesis, the heightened attention to governance over our sample period leads IPO firm managers to increasingly adopt protective measures while they can, i.e., prior to going public.[2] These measures enable managers to raise money in the offering while preemptively protecting themselves against subsequent market discipline. This protection is particularly important in the years following the IPO, when managerial ownership stakes tend to decline. The costs of these measures are greatest among firms in which agency costs tend to be higher, for example due to weak monitoring or weak incentives to maximize shareholder value. To the extent that the increased availability of capital to private firms in more recent years has given entrepreneurs greater bargaining rights (see, e.g., Ewens and Farre-Mensa, 2020), agency-related factors may contribute to the increasing frequency of these

[2] While such protective structures should lower the price at which a firm can go public, insiders will nevertheless gain if the value of their private benefits exceed the decrease in valuation.

structures.

The two hypotheses are not mutually exclusive. In fact, we conjecture that agency concerns are stronger for dual class. Because classified boards shield managers from short-term pressures for just two years, i.e., until a majority of board members can be replaced, classified boards represent a compromise between the benefits of a longer-term focus and the benefits of external monitoring, for example in the form of takeovers or activist intervention. In contrast, dual class structures shield the firm from external monitoring more indefinitely, particularly in cases where the superior voting class effectively has complete power.

Descriptive evidence highlights the heterogeneity of firms with these structures, and it suggests varying motivations for choosing these governance structures. For example, 22% of dual class firms represent equity carve-outs. These carve-outs are arguably better characterized by Zingales' (1995) "one step in the sale of the firm" story rather than a founder striving to maintain control. Among dual class firms, carve-outs are five times as likely to convert to single class within the first five years of the IPO (30% vs 6%) and twice as likely to be acquired (32% versus 15%). We also observe that the types of firms choosing classified boards and dual class structures have changed over time: they increasingly represent founder firms, suggesting possible agency motivations, but also firms from technology / biotech industries, which tend to have high information asymmetry.

Typically, tests based on stock valuations are employed to robustly assess governance structures. However, in our setting, the severe endogeneity precludes such an approach. Lacking a natural experiment or a powerful instrument that relates to IPO firms' governance choices but not firm valuation, we pursue an alternative approach. Every publicly traded firm has a shareholder meeting each year, and investors vote on all directors up for election. Mutual funds have a fiduciary duty to vote on these directors. During our sample period, they could satisfy this obligation by following the recommendation of a proxy advisory service company, such as ISS, or by evaluating the items up for vote themselves. We take advantage of both this heterogeneity in voting strategies

and the fact that the votes are restricted to entities with 'skin in the game' to empirically test our hypotheses. Our empirical approach, which is less sensitive to endogeneity biases than other potential approaches, represents one of the contributions of the paper.

We begin by evaluating the voting recommendations of the largest proxy advisory firm, ISS. We find a striking disparity in ISS's support levels: ISS recommends against 24% of all directors up for vote in newly public firms (defined as the first three annual meetings following firms' IPOs), compared to only 6% of mature S&P1500 firms (defined as firms that have been publicly traded for at least five years). At least a portion of this difference relates to firms' governance choices. ISS states that they recommend against directors of companies with either dual class or classified boards, and this is precisely what we observe in our data.

Is ISS more likely to recommend against directors of these firms because their governance structures are best explained by the Agency Hypothesis? Or alternatively, does ISS not recognize that these structures are value-increasing for some IPO firms, as posited by the Optimal Governance Hypothesis? Because ISS tends to utilize one-size-fits-all strategies in making its recommendations (see, e.g., Iliev and Lowry, 2015 and Malenko and Shen, 2016), it may not consider the unique governance demands of newly public firms. To answer these questions, subsequent tests focus on the votes of firm owners, specifically mutual funds, who have 'skin in the game' and are more likely to recognize a firm's unique situation.

Whereas ISS is 7.9% less likely to recommend voting for directors of firms with classified boards, mutual funds are only 3.5% less likely to vote for such firms. To understand the determinants of mutual funds' support, we form two indices. The information asymmetry index is based on: firm age, firm assets, firm EBITDA / assets, and R&D / assets. Similarly, we form an agency index based on: founder firm, CEO-Chair duality, CEO tenure, and industry incentive pay. We find that mutual funds' support for classified boards is significantly lower among firms with higher agency and greater among firms with higher information asymmetry. The votes of the most engaged mutual

funds, which are more likely to evaluate firm-specific governance demands and least likely to indiscriminately follow ISS's recommendations (see, e.g., Iliev and Lowry, 2015), provide further support for this conclusion. Among high information asymmetry firms, the most engaged mutual funds are equally likely to vote for directors of firms with versus without classified boards, consistent with a conclusion that classified boards represent optimal governance at this point in the life cycle.

Findings regarding dual class firms are starkly different. Mutual funds are 6.7% less likely to vote for directors of dual class firms, and this relation is not mitigated by firms' level of information asymmetry. Moreover, mutual funds' opposition is significantly greater among firms with a higher value of the agency index and also among firms with a higher voting-cash flow wedge.

The supply of capital to private firms has risen in recent years (Ewens and Farre-Mensa, 2020), raising the question of whether greater bargaining rights of founders have contributed to an increase in agency-motivated governance structures. We find some support for this conjecture. In recent years, mutual funds are more likely to vote against both dual class and classified board firms. However, we find no similar change in recent years among the cases that are most likely to represent optimal governance, that is, for high asymmetry firms with classified boards

To provide further evidence on our hypotheses, we examine whether the time trend in IPO firms adopting these structures is concentrated within certain types of firms. Consistent with the Optimal Governance hypothesis, the increase in classified boards is concentrated among the type of firm for which the benefits of this governance structure are greatest, that is, firms with high information asymmetry. In contrast, the rise in dual class structures is greater among firms with higher potential agency costs, consistent with the Agency hypothesis.

In the last section of the paper, we examine post-IPO dynamics. We find that newly public firms face significantly less external pressure than more mature firms, for example as measured by shareholder proposals. Perhaps because of this lower pressure, 56% of firms still have a classified board ten years after the IPO, compared to only 47% of mature firms. Lower information asymmetry

later in a firm's life cycle suggests that these structures are less likely optimal at that point.

Our paper contributes to the ongoing debate regarding the merits of classified boards and dual class structures. Although most research in this area focuses on mature firms, the increasing popularity of both classified boards and dual class is concentrated among IPO firms. Given the widespread evidence that these structures have zero or negative value among mature firms,[3] we pose the question: could these structures be value-maximizing for such a large portion of IPO firms, especially in more recent years? Our results highlight the extent to which the answer to this question is nuanced – with no single explanation (e.g., optimal governance vs agency) explaining all cases.

Our paper also contributes to a small but growing literature examining the potentially unique governance demands of IPO firms. Field, Lowry, and Mkrtchyan (2013) conclude that busy boards provide positive value for firms in the years immediately after the IPO, but not for more mature firms. Contemporaneous work by Kim and Michaely (2019), Cremers, Lauterbach and Pajuste (2020), and Johnson, Karpoff and Yi (2022) reach similar conclusions for dual class structures and other takeover defenses. Aggarwal, Eldar, Hochberg and Litov (2022) conclude that the increased availability of capital to private firms has facilitated the ability of founders to go public with dual class share structures. Our finding that entities with 'skin in the game' assess dual class structures to be motivated by agency is consistent with this conclusion. Incremental to this, our findings highlight the ways in which the concentration of voting control, the presence of factors that facilitate or mitigate agency within the firm, and the degree of information asymmetry between management and external stakeholders jointly influence shareholders' assessments regarding the value of both dual class share structures and classified board structures. Broadly, our paper contrasts with prior literature in this area along three dimensions. First, we adopt an empirical approach that is less sensitive to endogeneity biases. Second, we shed light on the divergent trends between newly public

[3] See, e.g., Bebchuk and Cohen (2005), Faleye (2007), Cohen and Wang (2013), Bates, Becher, and Lemmon (2008), Gompers, Iishi and Metrick (2010), Masulis, Wang, and Xie (2009), Smart and Zutter (2003), and Smart, Thiromalai, and Zutter (2008).

and mature firms. Third, we focus on multiple sources of heterogeneity in dual class IPOs, for example the extent of insider voting rights and the presence of carve-out structures, both of which contrast with common perceptions and which relate directly to the motivation behind these governance choices.

2. Data

For our IPO sample, we identify all firms that went public between 1988 and 2017, as listed on the Securities Data Company (SDC) database. We end the sample in 2017 to enable us to follow firms for several years after the IPO. We follow the procedure detailed in Lowry, Michaely, and Volkova (2017) to construct our sample. Specifically, we exclude units, REITs, American depositary receipts (ADRs), closed-end funds, limited partnerships, IPOs with an offer price below five dollars, companies whose "primary exchange nation" is any country other than the United States, Foreign Private Issuers (as designated in the IPO prospectus), and companies not listed on CRSP within 14 days of the IPO.[4] We omit utilities (SIC codes 4900-4999), we limit the sample to offerings of common shares, and finally, we make corrections to the SDC data as identified by Jay Ritter's website.[5] We use SDC to identify IPOs that are equity carve-outs (there are no spin-offs in our sample). As described in more detail below, we use multiple data sources to ascertain whether each IPO has either a classified board or an annual board, and whether it has a dual class or single class share structure. After requiring data on these governance structures, our final sample of IPO firms consists of 6,143 firms.

For each IPO firm, we examine the prospectus to determine the governance structure as the

[4] The SEC defines a Foreign Private Issuer as a company incorporated or organized outside the U.S., *unless* more than 50% of its outstanding voting securities are owned by U.S. residents, and one or more of the following are true: a majority of the company's executive officers or directors are U.S. citizens or residents; more than 50% of the company assets are located in the U.S.; or the company's business is administered primarily in the U.S.

[5] Specifically, the limiting of the sample to offerings of common shares excludes the following security types (as listed in SDC): "Units", "Ltd Prtnr Int", "MLP-Common Shs", "Shs Benficl Int", "Ltd Liab Int", "Stock Unit", "Trust Units" and "Beneficial Ints". We thank Jay Ritter for making corrections available at https://site.warrington.ufl.edu/ritter/files/2019/04/SDC-corrections.pdf.

firm goes public. For 1988-1992, we use data from Field and Karpoff (2002). For IPOs beginning in May 1996, we use the Security and Exchange Commission's (SEC) EDGAR database to obtain prospectuses. For IPOs issued from 1993 through April 1996, we examine the first proxy statement available on EDGAR (usually in 1996, but in some cases earlier proxies are available).[6] From these prospectuses, we identify whether the firm had a classified board and whether it had a dual class share structure at the IPO. For firms with multiple classes of shares, we collect the number of share classes, number of votes per class, shares outstanding per class, and ownership of each share class. We examine proxy statements on EDGAR to determine whether firms had either a classified board or a dual class share structure five and ten years after the IPO. For all IPOs for which we have access to the prospectus, we hand-collect data on ownership of the CEO, the Chairman of the Board, and all officers and directors at the time of the IPO. In addition, we determine whether the CEO is also the Chairman of the Board and whether either the CEO or Chairman founded the firm. We calculate firm age based on the year of founding.[7] We use SDC to identify firms that have been the target of an acquisition attempt or were acquired after the IPO.

Our mature firm sample consists of S&P 1500 firms that have been public for more than five years. For mature firms, we use the Investor Responsibility Research Center (IRRC) database to determine board structure and whether the firm had a dual class structure, each year from 1990-2017.

We use stock price data from the Center for Research in Security Prices (CRSP) and financial data from Compustat. We obtain the state of incorporation from the CRSP / Compustat merged database and the headquarter state from Compustat. Voting data are from ISS Voting Analytics, covering firm annual meetings between 2006 and 2018. These data include both the ISS

[6] The fact that we observe very few changes in either board structure or share class structure over the first three years after the IPO mitigates concerns related to measuring these factors one to three years after the IPO. However, this procedure results in the exclusion of IPOs from the 1993-1995 period that did not survive until 1996, which may cause us to overestimate the percentage of dual class IPOs during this period (because these firms are less likely to be acquired). Importantly, this does not affect our main empirical tests, which rely on voting data that begin in 2006.

[7] Year of founding is obtained from prospectuses as well as Jay Ritter's website. For further detail see Field and Karpoff (2002) and Loughran and Ritter (2004).

recommendation on each proposal across a broad set of firms and the vote of each individual mutual fund on each of these proposals.

Throughout the paper, we focus on IPO firms through the first three annual meetings after the IPO. We refer to this set of firms interchangeably as IPO firms or newly public firms. We contrast these with S&P1500 firms that are included in IRRC and have been public for more than five years. For conciseness, we refer to this set of firms as mature firms.

Table 1 provides descriptive statistics for the sample of IPO firms, where variables are measured prior to the IPO (with the exception of initial return and market capitalization, which by definition must be measured after the firm begins public trading). We describe both the overall sample, as well as subsamples based on whether the firm has a classified or annually elected board, and whether the firm has a dual class or single class share structure, at the time of the IPO. Overall descriptive statistics are consistent with those provided in other studies, for example the firm and offer characteristics reported in the review paper by Lowry, Michaely and Volkova (2017) and statistics related to firm directors in Field, Lowry and Mkrtchyan (2013).

Across our overall sample, firms with classified boards are more likely to belong to technology / biotech industries (as shown in columns 2 and 3), which is suggestive of higher information asymmetry. They also have higher average initial returns and higher average post-IPO Tobin's Q.[8] In contrast, evidence regarding the agency costs of firms with classified boards is more mixed. Although firms with classified boards are more likely to be founder firms, the CEO is significantly less likely to be Chairman of the Board. Finally, the average CEO pre-IPO ownership is significantly lower, which may reflect either lower incentive alignment or lower bargaining power.

Panel A of Figure 2 provides some evidence on the changes in types of IPO firms choosing classified boards, over the later years of our sample. We focus on differences between the 1988 –

[8] Firms with classified boards are also significantly older, though this at least partly reflects a time trend effect: over time, firms going public have both become older and more likely to have a classified board. In subsequent analyses, we examine the determinants of these structures within a regression framework.

2014 period versus the 2015 – 2017 period.[9] We find some evidence that both the information asymmetry and the agency costs among classified board firms may be higher during the more recent 2015 – 2017 period, compared to the remainder of the sample. The percent of classified board firms belonging to technology / biotech industries increased from 57% to 62%, and the percent of founder firms increased from 35% to 42%.[10]

Turning to the comparison of dual versus single class, columns 4 and 5 of Table 1 provide several takeaways. First, across our entire sample period, there is some evidence that dual class firms have, on average, higher agency costs. For example, they have significantly higher CEO tenure. Second, there is considerable heterogeneity in dual class IPOs. Dual class is commonly portrayed as a structure chosen by founder firms, frequently in high-tech industries, where managers have substantial control (see, e.g., Kim and Michaely, 2019 and Cremers et al., 2020). However, across the entire sample period, only 34% of dual class firms represent founder firms and only 40% belong to technology / biotech industries (significantly smaller than the 55% rate among single class firms).[11] Moreover, 22% of dual class firms are equity carve-outs, in which a parent firm frequently owns the majority of the high-vote shares. Johnson, Karpoff and Yi (2015) suggest that IPO firms use takeover defenses when they have key business relationships to protect, such as between suppliers and large customers. It is possible that, for equity carve-outs, such factors motivate the dual class structure. Alternatively, the parent company may institute a dual class share structure within the subsidiary firm as a means of expropriation, in the spirit of Atanasov, Boone and Haushalter (2008). Empirical tests in subsequent sections examine both of these possibilities.

[9] Data provided on Jay Ritter's website (https://site.warrington.ufl.edu/ritter/files/IPOs-Dual-Class.pdf) indicates a substantial shift in the types of firms with dual class share structures starting in 2015. Yearly percentages on Jay Ritter's IPO data page show that the percentage of dual class IPOs has remained high in 2018-2021, varying between 20.0% and 32.5%.

[10] Internet Appendix Table A1 provides the full set of descriptive statistics by time period: for all IPO firms, for firms with classified boards, and for firms with dual class share structures.

[11] While dual class is commonly portrayed as a structure chosen by founder firms, frequently in high-tech industries, where managers have substantial control (see, e.g., Kim and Michaely, 2019 and Cremers et al., 2020), many dual class firms do not fit this characterization.

Panel B of Figure 2 illustrates the ways in which the characteristics of dual class IPOs have changed in more recent years. The percent of dual class firms that represent founder firms in technology / biotech industries increased from 14% to 39%. Another dimension along which dual class IPOs have changed is in their propensity to be backed by venture capital (see Internet Appendix Table A1). During the earlier 1988 – 2014 period, only 21% of dual class firms were VC backed (compared to 43% of single class firms). In the more recent 2015 – 2017 period, a much higher 46% of dual class firms are VC backed (compared to a similar 48% among single class firms, untabulated). This potentially reflects the fact that the increased availability of capital to private firms has weakened VCs' bargaining rights and strengthened those of founders.

Figure 3 provides more detail on the heterogeneity across dual class firms, by examining the distribution of voting power, in particular how much power is controlled by those who would benefit most in terms of protecting perquisites. Panels A and B present histograms based on all dual class IPOs: percent of vote controlled by the CEO and percent controlled by all officers and directors, respectively. Patterns are striking. Across all dual-class IPOs, the CEO controls less than 10% of the vote in nearly 60% of cases. Moreover, the CEO lacks majority control in over 80% of cases. Perhaps even more surprising, officers and directors control less than 10% of the vote in nearly one-quarter of dual class IPOs. Notably, these percentages are computed pre-IPO; the dilution associated with the new share issue results in managerial control falling further.[12]

To evaluate the concentration of voting control among firms most subject to agency costs, Panels C and D of Figure 3 show similar histograms measured across founder firms with dual class structures at the IPO. Even among this subset, the CEO controls less than 10% of the voting power in 38% of cases. Among this narrower subset of firms, officers and directors rarely control less than

[12] It is possible that shareholders have not objected more to dual class IPOs because non-insiders have sufficient control to constrain the most egregious management behavior. In fact, evidence that post-IPO market returns of dual class IPOs are not significantly lower than those of single class IPOs is consistent with minority investors successfully deterring insiders from abusing the outside shareholders. For evidence on returns, see statistics on Jay Ritter's website: https://site.warrington.ufl.edu/ritter/files/IPOs-Dual-Class.pdf.

10% of the vote, but they lack majority control in nearly 30% of IPO firms. We observe similar heterogeneity in voting control during the more recent years of our sample period, 2015 – 2017 (not tabulated). Subsequent analyses that test the Optimal Governance versus Agency hypotheses consider this heterogeneity.

Internet Appendix Table A2 provides more detail on the types of dual class IPOs in which officers and directors (O&D) have little voting control. Of the 555 dual class IPO firms for which we can identify O&D voting control, we find that O&Ds control less than 10% of the vote in 131 firms (24% of all dual class IPOs). Among these firms, most are controlled by blockholders: 60% are equity carveouts and another 29% have corporate blockholders that control most of the vote (these blockholdings include corporations, private equity funds, pension funds, and banks, among others).[13] Details on these firms and the remaining 10% without corporate blockholders are given in Table A2.

3. Trends in governance

As noted earlier, Figure 1 illustrates the substantial changes in the percent of IPO and mature firms with classified boards (Panel A) and dual class share structures (Panel B) over the thirty-year period, 1988−2017. Looking first at Panel A, only 30% of companies going public in 1988 had a classified board. Between 1988 and 2002, the percentage of newly public firms with classified boards increased almost monotonically. After a dip in 2002 and 2003 around the time of Sarbanes-Oxley and associated pressures on firms' governance structures, the steady increase resumed. Since 2012, approximately 70-80% of firms going public each year have had a classified board. This substantial increase in the percentage of IPO firms with classified boards contrasts sharply with trends among mature firms. In the late 1980s through about 2004, slightly less than 60% of mature firms had classified boards. Since 2004, this percentage has decreased monotonically, such that only 30% of mature S&P 1500 firms as of 2017 had a classified board (see, e.g., Cremers, Litov and Sepe, 2017).

[13] Although these blockholders may have representatives on the board, these representatives do not claim beneficial ownership and, as a result, these blockholdings are not included in the officer and director holdings disclosed in the prospectus.

Panel B shows a similar contrast in the frequency of firms with dual class stock. The percentage of IPO firms with dual class stock was generally less than 10% through 2001, exceeded 10% in most years since 2007, and reached over 25% in 2017. In contrast, among mature firms, the rate of dual class structures has decreased from approximately 10% over the 1990-2006 period, to 6% in more recent years.

To assess whether industry trends can explain the increasing use of classified boards and dual class among IPOs over time, we classify firms into the twelve Fama-French industries (except utilities, which are excluded from the sample). To mitigate the effects of noise and outliers related to few IPOs in certain years while still enabling an analysis of time-series trends, we categorize IPOs into seven time periods: 1988-1992, 1993-1995, 1996-2000, 2001-2005, 2006-2010, 2011-2014, 2015-2017.[14] As shown in Panels A and B of Table 2, neither the upward trend in the tendency of IPO firms nor the downward trend in the tendency of mature firms to have classified boards is driven by any particular industry. For most industries, IPO firms have generally been increasingly likely to implement classified boards, while mature firms have been less likely to do so.[15]

4. Shareholder voting in newly public firms

The fact that so many IPO firms in recent years are choosing either classified boards or dual class share structures, particularly at a time when mature firms are less likely to have them, raises questions regarding the underlying motivation for these choices. As formalized in our Optimal Governance hypothesis versus Agency hypothesis, the motivation may be either to facilitate a focus on long-term shareholder value or, alternatively, to protect private benefits of control. This section focuses on testing these alternatives through an examination of how different sets of shareholders express their voice on firms' corporate governance related choices, in the form of shareholder voting.

[14] The definition of time periods is motivated by underlying data sources as described in Section 2 and also by macroeconomic events, such as the collapse of the Internet Bubble and the Financial Crisis.

[15] The lower frequency of dual class structures across most of the sample period, combined with clustering of IPOs in different industries over time, precludes a similar analysis for dual class firms across industry.

As noted earlier, shareholder votes provide a metric of the assessments of entities with 'skin in the game'. If certain governance structures facilitate agency costs, firm owners have an incentive to voice their opposition through their votes.

There have been dramatic changes in shareholder voting and more broadly in attention to corporate governance over our 30-year sample period. The influence of proxy advisory service firms such as ISS has increased, and mutual funds play an increasingly active role both through voting and engagement.[16] Empirical tests in this section focus on shareholder votes following the IPO for firms going public in 2006 – 2017. Both ISS and mutual funds have had considerable influence throughout this period. To test the two hypotheses, we take advantage of the fact that these entities' respective approaches toward governance differ. In Section 5, we evaluate conclusions from these cross-sectional tests through the time-series lens, focusing on our entire 30-year sample period.

4.1. Optimal governance versus agency: Predictions from shareholder voting patterns

Our empirical tests focus on both ISS's recommendations and the contrasting votes of funds that are more versus less likely to indiscriminately follow these recommendations. ISS evaluates each director, taking into account the overall governance structure of the firm. However, Iliev and Lowry (2015) and Malenko and Shen (2016) conclude that a shortcoming of ISS's assessments is that they do not adequately consider firm specifics and the associated valuation effects for each individual firm; rather, they are based on more one-size-fits all approaches. This suggests that ISS will tend to oppose an agenda item that has been shown to be suboptimal for a 'typical' firm, for example a more mature firm, irrespective of whether that agenda item potentially satisfies the more unique governance demands of a newly public firm.

Mutual funds vary in their propensity to follow ISS's recommendations – they base their

[16] ISS was founded in 1985, received added support in 1988 when the Labor Department ruled that pension fund managers who ignored proxy votes were subject to legal risk, and grew further in the mid-1990s when Thomson Financial bought ISS and invested in systems that lowered institutional investors' costs of voting. ISS received further credibility following two SEC no-action letters in 2004, which essentially affirmed that investment managers could satisfy their fiduciary duty when voting by relying on proxy advisory service company recommendations.

voting strategies on the costs and benefits of independently assessing and evaluating the issues up for vote. Following Iliev and Lowry (2015), we categorize mutual funds into two groups based on these costs and benefits. 'Engaged funds' are defined as funds with high net benefits of conducting their own research, due to economies of scale, lower costs of information sharing, and longer holding periods. The engaged fund measure comes from a principal factor analysis based on mutual fund family size, mutual fund size, mutual fund concentration within the metropolitan statistical area (MSA), and mutual fund turnover. Funds with an above-median value of this principal factor are labeled as engaged funds. Engaged funds are more likely to conduct independent research, and, analogously, less likely to indiscriminately follow ISS's recommendations.

To examine heterogeneity across IPO firms, we form two indexes. The *Information asymmetry index* represents the sum of four indicator variables: below-median firm age, below-median assets, below-median EBITDA/assets, and above-median R&D/assets. The *Agency index* represents the sum of the following dummy variables: founder firm, CEO-Chair duality, high CEO tenure, and low industry incentive compensation. The last component captures the tendency of a firm to have a compensation plan that facilitates agency, that is, a plan that provides low incentives to maximize shareholder value. Because we lack compensation data for each IPO firm, we calculate average incentive pay as a fraction of total pay, across young publicly traded firms, specifically Execucomp firms that have been public for less than five years, within each IPO firm's industry×year. We calculate median incentive pay for each industry-year and determine if the IPO firm belongs to an industry-year that is below median.[17]

We begin in Section 4.2 with an analysis of ISS's recommendations. Both hypotheses predict that ISS will be more likely to oppose directors of IPO firms, compared to more mature firms. This opposition reflects either IPO firms' higher agency costs or their more unique governance demands

[17] Specifically, we calculate the percentage of total pay that comes from factors other than salary, for each firm-year in the Execucomp database (among firms that have been publicly traded for less than five years). We assign a dummy equal to one for IPO firms that belong to industry-years with below median incentive compensation.

(which ISS does not consider). We further predict that this opposition will be concentrated among IPO firms with classified boards and dual class structures. Under the Agency Hypothesis, this is because IPO firms choose these governance structures to protect private benefits of control. Relatedly, firms with these governance structures would be more likely to select directors who are less diligent monitors. In contrast, under the Optimal Governance hypothesis, the greater ISS opposition stems from ISS's failure to recognize that these governance structures are value-maximizing for IPO firms. By shielding firms from short-term market pressures, these structures facilitate a focus on long-term value, which is particularly valuable for firms in a high information asymmetry environment, who typically cannot credibly signal their long-term plans. For example, Cremers, Litov and Sepe (2017) find that classified boards are value-increasing for firms engaged in innovation. Alchian and Demsetz (1972) and DeAngelo and DeAngelo (1985) conclude that dual class share structures lower the probability of ousting efficient managers and provide better incentives for managers to invest in firm-specific human capital.

Section 4.3 contains more direct tests of the two hypotheses, by focusing on the votes of entities with 'skin in the game'. Firm owners should be more likely to vote for directors of firms with optimal governance structures, and they should be more likely to oppose directors of firms whose governance structures are motivated by agency. This tendency will be strongest for the more engaged mutual funds, who are most likely to consider firm-specific characteristics when voting. The predictions of the two hypotheses are summarized in Table 3.

One point to highlight is that our empirical tests focus on the directors up for vote in these firms, rather than classified boards or dual class structures per se.[18] The underlying premise is that if these governance structures facilitate agency costs, then management will nominate directors who are weak monitors and contribute little to shareholder value. In contrast, if these governance choices are

[18] While firms have a variety of issues up for vote at their annual meetings, the largest category is director proposals, and all firms have such items on their agendas. For this reason, we focus our empirical tests on director proposals.

optimal, then the proposed directors will analogously represent candidates who contribute positively to firm value. Related to this, ISS states that it generally recommends against directors of IPO firms with either dual class structures or classified boards.

4.2. ISS's tendencies to recommend against proposals of newly public firms

We begin in Table 4 by examining ISS's propensity to recommend against directors within newly public firms. Panel A of Table 4 shows the frequency of ISS 'against' recommendations within our sample of IPO versus mature firms, where 'against' includes: 'abstain', 'against', 'do not vote', 'none', and 'withhold'. As described above, the IPO sample includes the first three annual meetings after each firm goes public, and the mature firm sample includes S&P1500 firms that have been publicly traded for more than five years. Findings show that within every calendar year, ISS recommends against more proposals for newly public firms than for mature firms. Across the entire sample period, ISS recommends against 24% of directors proposed by recent IPO firms, compared to only 6% among more mature firms.

Panel B shows that ISS's opposition is greater among firms with classified boards or dual class share structures. ISS recommends against 27% of directors within IPO firms with classified boards, compared to 20% among IPO firms with annual boards. In dual class versus single class firms, the analogous rates are 29% versus 23%.

Regressions in Table 5 show that these differences are robust to controlling for other firm characteristics. We begin in column 1 with a sample of directors up for vote across a broad sample of both newly public firms and mature firms, over the 2006 – 2017 period. The dependent variable equals 100 if ISS recommends for the director, and zero if it recommends against. Control variables include proxies for information asymmetry and proxies for agency costs, as well as other firm and offer-characteristics and meeting year fixed effects.

Looking first at Column 1, the independent variable of interest is IPO firm, equal to one if the firm is a recent IPO firm (i.e., this is one of the first three meetings after the IPO), and zero

otherwise. Results show that ISS is 12.5% less likely to recommend for directors of recent IPO firms, compared to more mature firms. The economic magnitude of this effect is striking, given that on average across mature firms ISS recommends against only 6% of directors (as shown in Table 4). Columns 2 and 3 examine the prediction (of both hypotheses) that ISS's opposition will be greater within IPO firms with classified boards or dual class structures. We limit the sample to recent IPO firms and add IPO-specific controls. Years since IPO ranges from one to three, by definition, and firm age at the time of the IPO is defined as number of years since founding. We also control for whether the company is a controlled company, for reasons other than being dual class ("controlled company, not dual").[19] Consistent with predictions, we find that ISS is 7.9% less likely to support directors of IPO firms with classified boards and 10.8% less likely to support directors of dual class firms. These magnitudes are notable when evaluated relative to the average ISS against rate among IPO firms of 24% (as shown in Table 4).

Columns 3 and 4 of Table 5 examine whether ISS considers the more detailed features of the dual class structures. First, following Gompers, Iishi and Metrick (2010), we define the wedge in dual class firms as insider voting rights minus cash flow rights, where insiders include all officers and directors. Gompers et al (2010) and Masulis, Wang and Xie (2009) conclude that a higher wedge is associated with higher agency costs. Second, carve-out firms potentially choose dual class structures for different reasons than other firms, as discussed previously. Third, we interact each governance structure with the *Information asymmetry index.* If protective governance structures are more optimal for firms with higher information asymmetry, we would expect these interaction terms to be positive. Fourth, we interact each governance structure with the *Agency index*. To the extent that higher agency firms' governance choices are more likely motivated by an effort to protect

[19] Both NYSE and Nasdaq define a controlled company as one in which over 50% of the voting power for director elections is held by a single person, entity, or group. Controlled companies are exempt from the requirement that the majority of directors be independent. There is a substantial overlap between controlled companies and those with dual class structures, with 47% of dual class companies also being controlled companies.

private benefits of control, we would expect these interaction terms to be negative. Consistent with ISS largely relying on a one-size fits all strategy, none of the coefficients on these interaction terms are significant in the predicted direction.

Coefficients on other independent variables in Columns 2 – 4 provide insight into the influence of other IPO firm characteristics. We find some evidence that ISS is more likely to recommend for directors from lower information asymmetry firms, as proxied by the positive coefficients on *Firm age* and on the *Information asymmetry index*. We find mixed evidence regarding the effects of agency: ISS's recommendation is negatively related to *CEO-chair duality* but positively related to *Founder firm*. We also find that ISS's recommendation is negatively related to *CEO ownership*. Finally, ISS is more likely to recommend against controlled companies and firms that have gone public more recently.

Results in this section demonstrate that ISS is significantly more likely to oppose directors of newly public firms, particularly those with controversial governance structures such as classified boards and dual class shares. This opposition is neither concentrated among firms with greater agency costs nor mitigated by firm's information asymmetry. The next subsection focuses on the votes of firm owners, who have 'skin in the game', to evaluate whether ISS's concerns are justified.

4.3. Mutual funds' votes in newly public firms

4.3.1. Classified boards and dual class, votes across all mutual funds

Table 6 shows regressions in which the sample consists of mutual fund votes across the same set of proposals examined in columns 2 – 4 of Table 5: directors in the first three annual meetings after the IPO. The dependent variable equals 100 if the mutual fund voted for the director, zero otherwise. Controls include those used in Table 5. Standard errors are clustered at the fund level.

Column 1 indicates that mutual funds are 6.7% less likely to vote for directors of dual class firms and 3.5% less likely to vote for directors of classified board firms, both statistically significant

at the 1% level.[20] These results provide suggestive evidence consistent with the Agency hypothesis. However, it is also important to highlight that both these coefficients are lower in magnitude than the analogous rates for ISS (-10.8% and -7.9%, as shown in Table 5). This contrast suggests that mutual funds, who are more likely to consider firm-specific characteristics, may perceive the agency costs of these governance structures to be concentrated within narrower subsets of firms.

In column 2, we examine whether mutual funds perceive the Agency Hypothesis to explain the governance choices of some firms and the Optimal Governance hypothesis to explain the choices of other firms. We examine these predictions by interacting each governance structure with the *Information asymmetry index* and with the *Agency index*. In addition, we interact *Dual class* with *Wedge*.

Consistent with dual class structures that have a high voting-cash flow wedge being best explained by the Agency hypothesis, we find that mutual funds are significantly less likely to support directors of such firms, as reflected in the significantly negative coefficient of *Dual Class × Wedge*. This contrasts starkly with results in Table 5, which showed that ISS's recommendations were not related to the wedge, and it provides further evidence that mutual funds consider the specifics of items up for vote in more depth than ISS. We also find some evidence that mutual funds' support for directors of dual class firms is higher among higher information asymmetry firms, although the economic magnitude of the *Dual class × Information asymmetry index* coefficient is small; even among dual firms with the maximum information asymmetry index of four, mutual funds still, on average, vote against these directors.[21]

Mutual funds perceive classified boards to more likely reflect optimal governance, especially among high information asymmetry firms, as evidenced by the significantly positive coefficient on

[20] As shown in Table 5, ISS's recommendation is based on firm performance and governance characteristics, which are similarly related to mutual funds' votes. Thus, following Cai, Garner and Walkling (2009), we include the unexplained portion of ISS's recommendation, i.e., the residual from the regression shown in column 2 of Table 5.

[21] The coefficient on dual class of -6.55, plus the coefficient on *Dual Class × Information Asymmetry Index* of 0.35 multiplied by 4, equals -5.15.

Classified board × *Information asymmetry index*. Among classified board firms with the maximum information asymmetry index of 4, mutual funds do not exhibit a significant tendency to vote against directors. In contrast, mutual funds' opposition to directors of classified board firms is significantly greater among firms with higher agency, as evidenced by the significantly negative coefficient on *Classified board* × *Agency index*.

4.3.2. Votes of engaged mutual funds

Results to this point represent an average of two types of funds: funds that follow ISS and funds that independently evaluate the issues up for vote. In Table 7, we seek to more precisely identify the views of those investors most likely to consider firm-specific characteristics, such as information asymmetry and agency, and governance-specific factors, such as the size of the wedge. We interact each of the governance variables of interest with *Engaged voter*, which equals one if the mutual fund has an above median incentive to be an engaged voter (as defined above), and we consider heterogeneity across firms. To minimize the number of triple interaction terms, Panel A of Table 7 focuses on the sources of heterogeneity shown in Table 6 to be more influential: the effects of the wedge on support for dual class firms (*Dual class* × *Wedge* × *Engaged voter*), and the effects of information asymmetry on support for classified board firms (*Classified board* × *Information asymmetry index* × *Engaged voter*). In Panel B, we restrict the sample to engaged funds and include all the interaction terms from Table 6.

The coefficients on *Dual class* × *Engaged voter* and *Dual class* × *Wedge* × *Engaged voter* in Column 1 of Panel A indicate that engaged funds' opposition to directors of dual class firms is significantly greater among firms with higher wedges. A one standard deviation increase in the wedge is associated with an 1.6% decrease in support among engaged funds.[22] This provides further

[22] The standard deviation of the wedge, conditional on dual class equaling one, is 0.091. Economic significance is calculated as this standard deviation times the coefficient on Dual class × Wedge × Engaged voter (-15.78), all divided by the mean of the dependent variable, 87.283.

support for the Agency hypothesis explaining the governance choices of these firms.

Column 2 focuses on engaged funds' votes among different types of classified board firms. The coefficients on *Classified board* × *Engaged voter* and *Classified Board* × *Information asymmetry index* × *Engaged voter* indicate that engaged funds' opposition to directors of classified board firms is concentrated among firms with low information asymmetry. Engaged funds are 5.8% less likely to vote for directors of classified board firms with low information asymmetry (-4.09 + -1.71). However, among high information asymmetry firms, engaged funds are no more likely to oppose directors of classified board firms than annual board firms.[23] In sum, engaged funds conclude that classified board structures are optimal among IPO firms with higher information asymmetry, consistent with the Optimal Governance hypothesis. Column 3 shows that these conclusions are robust to including both the dual class and classified board interaction terms in one regression.

In Panel B, we restrict the sample to engaged funds; we interact both the agency index and the information asymmetry index with both governance structures, and we include the interaction between dual class and wedge. Results provide further support that most engaged shareholders consider dual class structures to be motivated by agency: the interaction term coefficients indicate that there is no subset of dual class firms in which engaged funds support directors. These funds also perceive classified boards to be detrimental among firms with low information asymmetry and with high agency. However, among firms with greater information asymmetry, fund votes indicate that classified boards represent optimal governance.

4.3.3. Have trends changed in recent years?

As discussed previously, Figure 2 shows that the characteristics of classified board firms, and especially of dual class firms, have changed in recent years. One notable shift is that firms with these

[23] For firms with an information asymmetry index of 4, engaged funds' likelihood of voting for directors of classified board firms (compared to the annual board counterparts) can be summarized by the coefficients on Classified board, Classified board × Engaged voter, (Classified Board × Information Asymmetry Index)×4, (Classified board × Information Asymmetry Index × Engaged voter)×4: -4.09 + -1.71 + (-0.34×4) + (2.24×4) = 1.8%.

structures are more likely to represent founder firms in the post-2015 period. If founders have more power to choose governance structures that protect private benefits of control, then classified boards and dual class may be more likely motivated by agency in recent years.

In Table 8, we estimate regressions similar to those in Tables 6 and 7, but we interact key variables with *Post15*, which equals one if the firm went public in 2015 or later, zero otherwise. We focus on the sources of heterogeneity that results to this point have shown to be most influential: the effects of the wedge on support for dual class firms (*Dual class* × *Wedge* × *Post15*) and the effects of information asymmetry on support for classified board firms (*Classified board* × *Information asymmetry index* × *Post15*).

Findings to this point have indicated that dual class structures are motivated by agency, and we find that this is even more so the case in the post-2015 period. Column 1 shows that mutual funds are 6.4 percentage points less likely to vote for directors of dual class firms that went public through 2014; this widened to 11.4 percentage points in the post-2015 period (-6.43 + -5.00). Column 2 shows that this greater tendency to oppose directors of dual class firms in the post-2015 period persists irrespective of the size of the wedge.

We find starkly different patterns for classified boards. During the later years of our sample period, mutual funds increasingly conclude that classified boards are motivated by optimal governance. Among firms that went public in 2015 or later, mutual funds were no more likely to vote against directors of classified board firms than of annual board firms, as reflected by the sum of the coefficients in column 1 for *Classified board* and *Classified board* × *Post2015* (-3.72 + 4.05). Consistent with earlier findings, column 2 shows that this effect is concentrated within high information asymmetry firms. Even in the post-2015 period, mutual funds are significantly less likely to vote for directors of classified board firms with low information asymmetry. However, this

reverses and becomes positive for firms with an information asymmetry index of three or greater.[24]

Column 3 evaluates the extent to which engaged funds' votes yield similar conclusions. Echoing prior findings, relative to other mutual funds, engaged funds' opposition to dual class firms is more concentrated among cases with higher wedges; this has not varied over time. Similar to other funds, engaged funds' have become increasingly likely to support classified boards among firms with higher information asymmetry.

4.3.4. A more in-depth analysis of dual class firms

An additional dimension of heterogeneity in dual class firms is whether the firm represents an equity carve-out. Table 1 shows that 22% of dual class firms represent carve-outs. Johnson, Karpoff and Yi (2015) conclude that operational connections between firms can make anti-takeover provisions valuable, suggesting that the dual class structure may be more likely to reflect optimal governance within carve-outs. Alternatively, parent firms may implement dual class as a way to control resources, in a tunneling-type fashion.

We estimate regressions similar to those in Tables 6 and 7, except that we limit the sample along two dimensions. First, we include only dual class IPOs; this enables us to examine multiple sources of variation within the dual class structure (and avoid excessive interaction terms). Second, to mitigate concerns that some features of dual class may change in the years following the IPO, we include only the first shareholder meeting after the IPO.[25]

Looking first at column 1 of Table 9, the coefficient on *Wedge × Engaged voter* is -38.45 (significant at the 1% level), indicating that a one standard deviation increase in the wedge is associated with engaged funds being 3.7 percentage points less likely to vote for the firm's directors.

[24] From Column 2, mutual funds' tendency to vote for a director of a classified board firm with an information asymmetry index of three (relative to non-classified board firms) equals the sum of the coefficients on *Classified board*, *Classified board × Post15*, (*Classified board × Information asymmetry index)*×3, (*Classified board × Information asymmetry index × Post15)*×3: -4.75 + -6.61 + 0.65×3 + 4.63×3 = 4.48.

[25] As discussed in the next section, the tendency of dual class firms to either become single class or to be acquired (and thus disappear from this regression sample) is related to whether they are a carveout firm. To mitigate any biases that result from this, we limit the regression sample in this analysis to the first meeting after the IPO.

Given the average opposition rate of 16% among engaged funds (to directors of dual class firms), this represents a 20% increase in opposition.

In column 2, the coefficient on *Carve-out* × *Engaged voter* is 5.74 (significant at the 1% level). Relative to other mutual funds, engaged funds are more likely to support directors of dual class firms that are carve-outs. In section 6, we examine in more detail the features of carve-outs with a dual class structure, which potentially relate to this more positive outlook. In columns 3 and 4, we examine the influence of the *Agency index* and the *Information asymmetry index.* Consistent with earlier findings, the coefficient on *Agency index* × *Engaged voter* is significantly negative. More surprising, the coefficient on *Information asymmetry index* × *Engaged voter* is also significantly negative. In column 5, we include all these interactions in a single regression. Results are largely similar, with the exception that the coefficient on *Carveout* × *Engaged voter* is no longer significant.

In sum, results provide consistent evidence that entities with 'skin in the game' assess classified boards to represent optimal governance among firms with high information asymmetry. However, many other governance choices of these IPO firms are more consistent with agency, including for example classified boards among low information asymmetry firms and dual class share structures. Concerns regarding dual class are greatest when the voting-cash flow wedge is higher and when other features of the firm facilitate agency.

5. Changes in firm type, over time

It is striking that both classified boards and dual class have increased over time, particularly given evidence in the prior section that firms' motivations for these structures often differ. In this section, we consider the predictions of each hypothesis, as they relate to these time series trends. The Optimal Governance hypothesis predicts that IPO firms are characterized by higher levels of information asymmetry in recent years, whereas the Agency hypothesis predicts that agency costs have increased. We begin by examining broad trends in the types of firms going public, and we then examine whether the increases in these governance structures are concentrated among firms with

high information asymmetry versus high agency.

Figure 4 provides descriptive evidence on several proxies for information asymmetry, and Figure 5 focuses on proxies for agency costs, for firms going public across our 30-year sample period. We categorize IPOs into the same seven time subperiods as in Table 2.

Panels A - C of Figure 4 suggest that the typical IPO firm is characterized by greater information asymmetry in more recent periods. The percent of IPOs with positive R&D has increased from about 40% to over 60%, and among positive R&D firms, median R&D / assets has increased from 16% to 29%. In addition, median profitability (measured as EBITDA over assets in the year prior to the IPO) has declined from 16% to –5%. Looking at Panels D and E, trends in both median pre-IPO assets and median firm age highlight the extreme changes in the IPO market following the crash of the Internet Bubble, but neither exhibits a more general trend.

Figure 5 examines five variables that capture agency and CEO characteristics. We find some evidence that CEO tenure has increased over our sample period, from less than five years during 1996-2000, to nearly six years in the recent 2015-2017 period, consistent with an increase in agency. However, median incentive pay at the industry level (as defined earlier) has increased. Finally, other proxies for agency, including the percent of founder firms and CEO-Chair duality, show less evidence of a trend. Finally, CEO ownership has decreased over our thirty-year sample period, which is potentially driven by firms going public later and thus founder ownership being diluted by the time of the IPO.[26]

The Optimal Governance hypothesis further predicts that the increasing tendency to have a classified board or dual class structure should be strongest among firms that derive the greatest benefit from this structure, e.g., high information asymmetry firms. In contrast, the Agency hypothesis suggests that the increasing trends should be concentrated among firms with the greatest

[26] The percent of the vote controlled by the CEO has also decreased, while both ownership and the percent of the vote controlled by all officers and directors has remained relatively stable (shown in Internet Appendix Figure A1).

agency costs. We estimate a series of regressions, shown in Table 10. The dependent variable in column 1 (column 2) equals one if the firm has a classified board (dual class structure) at the time of the IPO, zero otherwise. The sample includes IPO firms over our thirty-year sample period, 1988-2017. Independent variables of interest include both the information asymmetry index and the agency index, as used in earlier tables, each interacted with a time trend.

Consistent with the Optimal Governance hypothesis, Column 1 shows that the increase in classified boards is concentrated among high information asymmetry firms and low agency firms, as evidenced by the significantly positive coefficient on *Information asymmetry index × Time* and the significantly negative coefficient on *Agency index × Time.* Classified boards are also more common among VC backed firms. Venture capitalists typically have substantial share ownership and thus strong incentives to sell the firm at the maximum price, which incentivizes them to set firms up with value-maximizing governance mechanisms (Hochberg, 2011).[27] Column 2 indicates that the increase in dual class is concentrated within a very different group of firms. The coefficient on *Information asymmetry index × Time* is insignificant and close to zero in magnitude, while the coefficient on *Agency index × Time* is significantly positive. Finally, in contrast to classified boards, we find that VC backed firms are significantly less likely to go public with a dual class structure.

In sum, results in Table 10 indicate that the increasing tendency of firms to have classified boards is concentrated within cases that are most likely to represent optimal governance, i.e., high information asymmetry firms. In contrast, agency factors play a larger role in explaining the use of dual class.[28]

[27] In economic terms, the significantly negative coefficient on the information asymmetry index, combined with the significantly positive coefficients on the time trend and on the information asymmetry index × time, indicates that firms with a median or greater level of information asymmetry (i.e., a value of two or greater) are more likely to go public with a classified board in years 1992 and later, i.e., when *Time* = 5 (relative to the starting year of 1988): *Info asym index*×2 + (*Info asym index*×*Time)*×2 + *Time* = -5.13×2 + 0.31×5×2 + 1.53×5 = 0.49. Analogously, findings in column 2 indicate that firms with a median or greater level of agency are more likely to go public with a dual class share structure in years 2006 and later.

[28] There are insufficient cases each year of dual class IPOs with high versus low wedges, or that represent carve-outs or founder firms, to examine the heterogeneity in dual class within the time-series framework.

6. Post-IPO changes in firm governance and ownership

If shareholders effectively pressure firms to change suboptimal governance structures, then we should observe changes in the years following the IPO for those structures that primarily serve to protect insiders benefits of control, i.e., structures motivated by agency. Alternatively, if frictions impede effective shareholder pressure, then such changes will be less likely. Section 6.1 examines the extent of external pressure to change any governance-related issues within these firms, as proxied by shareholder proposals. Section 6.2 examines the percentage of firms that change their governance structures and the percentages that either delist for poor performance or get acquired.

6.1. External pressure on firms

As one metric of external pressure, Figure 6 examines the incidence of shareholder proposals over the first ten years after the IPO. We include shareholder proposals on any issue: governance-specific issues, environmental issues, and social issues. Thus, the number of these proposals for any firm-year should represent a broad measure of external pressure, rather than just governance-specific problems.[29] We compare the frequency of these proposals across two alternative sets of mature firms. Our first comparison group consists of matched mature firms. For each IPO firm-year, among firms that have been publicly traded for at least five years and fall within the same 2-digit SIC code, we select the firm with the closest market capitalization. Our second comparison group consists of all firms that have been publicly traded for at least five years.

The first takeaway from Figure 6 is that firms receive virtually no shareholder proposals on any item within the first five years after the IPO. In the first year, only 0.1% of firms receive a shareholder proposal, and it increases very gradually up to 3.6% in year five. This compares to an average 4.5% of the matched mature firm-years have a shareholder proposal, as shown by the blue bar on the right of the figure. Newly public firms reach a similar rate by year seven after the IPO.

[29] One concern is that firms with fewer governance problems will tend to have fewer shareholder proposals. We have re-done this analysis with just environmental and social proposals, and patterns are qualitatively similar.

Interestingly, in subsequent years, the proportion of newly public years receiving shareholder proposals exceeds that of the matched mature firms. This pattern is consistent with the benefits of dictatorship-like governance structures that are often instituted at the time of the IPO having waned, and thus the net costs of these structures becoming greater.

Figure 6 also shows that the frequency of shareholder proposals across all mature firms is much higher than that of either the matched mature firm sample or the IPO firm sample: 18% versus 4 – 5%. This is largely driven by newly public firms, and hence the matched firms, representing smaller firms. The lower pressure on all smaller firms facilitates the ability of these firms to maintain governance structures that are suboptimal.

6.2. Post-IPO changes

The lack of external pressure on newly public firms suggests that relatively few firms will either declassify their boards or shift to single class share structures. As length of time since the IPO increases, two factors should contribute to more governance changes. First, the extent of external pressure on firms increases, as shown in Figure 6. Second, the benefits of more dictatorship-like governance structures decrease, for example as firms' information asymmetry lessens.

Looking at Panel A of Figure 7, findings are consistent with predictions. By year five, only 2.0% of the firms that went public with classified boards switched to an annual structure. Accounting for the fact that 38% of firms are either delisted or acquired by year 5, this represents 3.2% of those firms that are still public by year 5. As shown in Panel B, across firms still publicly traded at year ten, 10.2% have switched from a classified to an annual board, which is over three times the rate observed through year five. However, across all IPO firms still trading at year ten, 56% still have a classified board, compared to only 47% of mature firms measured in similar calendar time.[30]

One commonly cited negative aspect of classified boards is that they prevent the market for

[30] To ensure comparability, we calculate the percent of mature firms over the 1998 – 2017 period, where 1998 represents ten years after the first IPOs in our sample went public.

external control from working effectively. Consistent with this notion, Bates, Becher and Lemmon (2008) find that classified boards deter takeovers within a sample of mature firms. However, we find no evidence that firms with classified boards are less likely to be acquired, within either five or ten years after the IPO. This contrast provides further evidence that the newly public firms' motivation for adopting classified boards is often fundamentally different than that of mature firms.

Panels C and D look at the post-IPO dynamics among dual class firms. We focus first on share unifications, which can either be contracted *ex ante* through sunset provisions or can be agreed upon at some point after the IPO. Given Kim and Michaely's (2019) finding that many sunset provisions are ineffective, combined with the possibility that firms may decide at a post-IPO date to change the share structure, we focus on the actual frequency of share unifications.[31]

Several factors lead us to separately analyze the evolution of the dual class firms in carve-out versus non-carve-out firms. First, the parent firm has considerable power prior to the IPO, for example when sunset provisions tend to be set. Second, the parent firm frequently owns the superior voting class, meaning they effectively control decisions regarding acquisition of the firm. We begin with a sample of all carve-outs that went public with a dual class structure. For each of these carve-outs, we form a matched sample of non-carve-outs that also went public with a dual class structure. We match first on year (requiring the offer dates to be within two years of each other), then on industry (Fama French 48 if a match exists, and Fama French 12 otherwise), and finally on size (taking the firm with the closest market capitalization). This process yields 111 dual class IPOs.

Among the matched non-carveout dual class firms, only 6% have unified their shares and only 15% have been acquired, as shown in Panel C of Figure 7. Although these dual class structures are motivated by agency, this suboptimal governance persists: there is a lack of external pressure, and

[31] Aggarwal et al (2021) show that many dual class IPOs have sunset provisions, which are designed to lessen the voting control of the superior class over time, suggesting that the presence of such clauses may reflect lower agency costs. However, we find no evidence that such provisions increase mutual funds' likelihood of voting for the firms' directors (untabulated). This is consistent with Kim and Michaely's (2019) conclusion that most sunset provisions are ineffective.

insiders have the power and the will to maintain control. In striking contrast, 30% of the carve-out firms unify their shares and 32% have been acquired by five years after the IPO. Of the companies still publicly traded at year five, 51% of carve-out firms converted to single class, compared to only 9% of non-carve-outs. Panel D shows that similar differences exist at year ten, though the magnitude of the gap between carve-outs and non-carve-outs is smaller by this point.

The motivation for dual class appears to be fundamentally different in carve-out versus non-carve-out firms. Our findings are consistent with a scenario in which parent firms structure the carve-outs as one step in the sale of the firm, in the spirit of Zingales (1995). In contrast, among non-carve-out firms, dual class share structures are more likely to persist. This conclusion is noteworthy, particularly in light of mutual funds' voting behavior as shown in Table 9. Findings indicated that among dual class firms, non-engaged mutual funds were significantly more likely to oppose directors of dual class carveouts, but engaged mutual funds disagreed with this assessment. Results in Figure 7 are consistent with engaged funds being more informed.

7. Evolution of other governance structures, among IPO firms

As formalized in the discussion of the Optimal Governance hypothesis and the alternative Agency hypothesis, the central debate behind both classified boards and dual class stock is whether these structures are motivated by the continuity they provide (positive net benefits of classified boards) or by a protection from value-increasing takeovers and a desire to appoint directors that are less stringent monitors (an agency cost explanation). To the extent that IPO firms' choices of classified boards are increasingly motivated by concerns about uncertainty, for example, due to firm type and/or changes in market dynamics, we would predict an increasing percentage of IPO firms to also incorporate in Delaware. As discussed by Romano (1985), the benefits of Delaware incorporation relate to lower uncertainty. Judges are appointed rather than elected, trials are not by jury, and the small size and continuity of Delaware's Chancery Court makes decisions more predictable than those of other states. Also, a substantial body of case law increases companies'

ability to forecast outcomes. Consistent with these factors, Daines (2001) concludes that incorporation in Delaware improves firm value.

Our findings are consistent with this prediction. As shown in Internet Appendix Figure A2, the percentage of IPO firms incorporating in Delaware has increased from approximately 60% in the early years of our sample to 80–85% in most years since 2010. In comparison, the percent of mature firms incorporating in Delaware has remained relatively steady at about 60%. Consistent with the increase in IPO firms' tendency to incorporate in Delaware, we find a decreased tendency for these firms to incorporate in their home state.[32] In most years since 2010, fewer than 10% of IPO firms incorporated in the same state as their headquarters, compared to 29% of mature S&P 1500 firms.

8. Conclusion

Firms have become increasingly more likely to have a classified board or dual class structure when they first access public equity markets, whereas the percent of mature firms with these structures has fallen. Within the latter years of our sample period, over 70% of IPO firms have classified boards and over 20% have dual class share structures; in comparison, the analogous percentages among mature firms are only 30% and 7%.

We posit that these differing patterns are not coincidental. Among mature firms, the decreasing frequency of these structures is consistent with evidence that they tend to facilitate agency (management entrenchment), combined with external pressure on these firms to improve governance. The contrasting trend among IPO firms reflects several factors. First, many newly public firms have optimal governance structures that differ from their more mature counterparts. We find that among high information asymmetry newly public firms, engaged mutual funds are equally likely to support directors of firms with classified boards and annual boards. Second, a subset of firms has become increasingly likely to adopt agency-facilitating governance structures, which is consistent with the

[32] In addition to the 50 U.S. states, IPO firms in our sample are also incorporated in the District of Columbia, Puerto Rico, and several Canadian provinces.

increased bargaining power of founders that has arisen with the greater availability of private capital. In the post-2015 period, mutual funds became twice as likely to vote against dual class firms, and this effect is significantly greater among firms with higher agency and a greater voting-cash flow wedge.

We also find that newly public firms are subject to less external pressure, for example in the form of shareholder proposals, compared to more mature firms that tend to be larger. Within the first five years after the IPO, less than 4% of firms receive a shareholder proposal in a year, compared to 17% of mature firms. This lower pressure potentially facilitates the ability of IPO firms to maintain governance structures, beyond when they are likely to be optimal.

Among dual class IPOs, we find that a substantial minority are equity carveouts, in which the parent controls the votes, rather than a founder. The motivation for dual class structures among equity carveouts seems to differ from that for founder firms, as 30% of dual class carveouts unify their shares and 32% are acquired within five years of the IPO. Of those carveouts still publicly traded five years post-IPO, 51% have converted to a single class, compared to only 9% for matched non-carveout dual class firms. Our evidence for carveouts is more consistent with Zingales' (1995) "one step in the sale of the firm" story than a founder striving to maintain control.

In aggregate, our findings provide strong evidence against any one-size-fits all approach toward governance. An understanding of the motivation for newly public firms' governance structures, and thus the implications of that governance for firm value, necessitates an in-depth understanding of each firm's characteristics and associated governance demands. In this vein, our paper relates to work by Coles, Daniel and Naveen (2008), Ahn and Shrestha (2013), Duru Wang and Zhao (2013), Bhojraj, Sengupta, and Zhang (2017), Daines, Li and Wang (2021), and Cremers et al. (2017). While these papers focus on samples of more mature firms, they are consistent with the conjecture that different types of firms have different governance demands. Relative to this prior body of work, our findings highlight a different dimension of this problem, specifically, the unique demands of newly public firms. This group of firms represents a key source of job creation and

economic growth, as suggested by a US Treasury Department IPO Task Force report; ensuring that these firms are well governed has real consequences.[33]

[33] IPO Task Force, 2011. "Rebuilding the IPO on-ramp: Putting emerging companies and the job market back on the road to growth." See https://www.sec.gov/info/smallbus/acsec/rebuilding_the_ipo_on-ramp.pdf.

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Appendix I: Variable descriptions

Governance structures	
Classified board	A dummy equal to one if the firm has a classified board, directors serving 3-year terms and only 1/3 of directors up for vote each year
Dual class	A dummy equal to one if the firm has a dual class share structure, defined as having two or more classes of stock. In many cases, one share has superior voting rights.
Wedge	Among dual class firms, the wedge is defined as Director and Officer voting rights minus Director and Officer cash flow rights. Voting rights equal the sum across all share classes of (voting rights per share × the number of shares owned), divided by the sum across all share classes of number of shares outstanding. Among single class firms, the wedge equals zero.
Controlled company, not dual	A dummy equal to one if the firm claims the controlled company exemption in its prospectus but does not have a dual class share structure, zero otherwise. Obtained from IPO prospectuses.
Incorporated in Delaware	A dummy equal to one if the firm is incorporated in the state of Delaware.
Incorporated in home state	A dummy equal to one if the firm's state of incorporation is the same as the state in which the firm's headquarters is located.
Firm variables	
Firm age	The year of the firm's IPO minus the year in which the firm was incorporated, as obtained from Field and Karpoff (2002), Loughran and Ritter (2004), Jay Ritter's website, and manual collection from prospectuses. We winsorize at the 99th percentile, which equates to 104 years.
Proceeds (2015 $)	Global proceeds raised in the IPO, as obtained from Thomson Financial. This does not include overallotment option shares that were exercised. It is expressed in millions of real 2015 dollars.
Post-IPO market capitalization (2015 $)	The number of shares outstanding times the closing market price one month after the IPO, expressed in millions of real 2015 dollars.
VC backed dummy	A dummy equal to one if the firm received VC funding prior to going public, as obtained from Thomson Financial
Underwriter rank	A score from 0 to 9 with higher scores reflecting higher quality underwriters, following Carter and Manaster (1990), as updated by Carter, Dark and Singh (1998) and Loughran and Ritter (2004). Data are obtained from Jay Ritter's website.
Initial return	The percentage difference between the IPO offer price and the closing price on the first day of trading.
Carve-out dummy	A dummy equal to one if the IPO represents an equity-carve-out, as obtained from Thomson Financial and manual inspection of prospectuses.
Technology/biotech company	A dummy equal to one if the IPO firm is in a high-technology industry, as defined by Thomson Financial.
EBITDA/Assets	EBITDA / assets, obtained from Compustat. Unless specified otherwise, this is measured at the end of the fiscal year prior to the annual meeting.
R&D/Assets	R&D / assets, obtained from Compustat. Unless specified otherwise, this is measured at the end of the fiscal year prior to the annual meeting. If R&D is missing, it is assumed to equal zero.
Positive R&D	A dummy equal to one if R&D / assets is positive, zero otherwise. Unless specified otherwise, this is measured at the end of the fiscal year prior to the annual meeting.

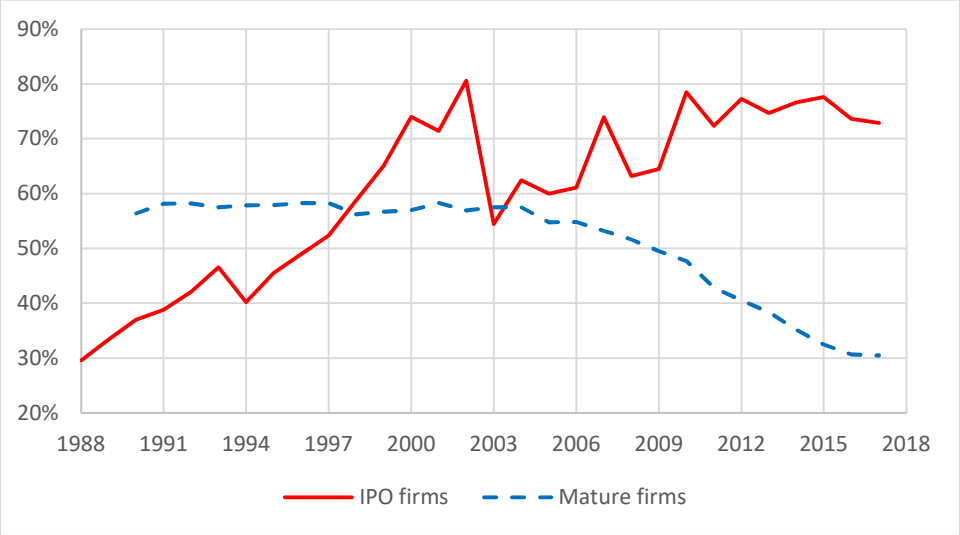
Assets	Assets, obtained from Compustat. Unless specified otherwise, this is measured at the end of the fiscal year prior to the annual meeting.
Abnormal returns	Firm returns minus returns on the value-weighted index, over the window beginning 365 days prior to the annual meeting and ending 21 days prior to the meeting.
Tobin's Q	Total Assets minus book value of equity plus market value of equity, all divided by total assets. This is obtained from Compustat and measured as of the fiscal year end prior to the annual meeting.
Book leverage	Book value of total debt as a fraction of total assets, measured as of the fiscal year end prior to the firm's annual meeting. Obtained from Compustat, and unless specified otherwise, measured at the end of the fiscal year prior to the annual meeting.
Acquisition attempt	A dummy equal to one if a firm attempted to acquire the newly public firm within the first three years after the IPO regardless of whether the attempt was successful or not, zero otherwise. Obtain from Thomson Financial, merger and acquisition database.
Completed acquisition	A dummy equal to one if a firm successfully acquired the newly public firm within the first three years after the IPO, zero otherwise. Obtain from Thomson Financial, merger and acquisition database.
Merger premium	The percentage difference between the merger offer price and the closing stock price 42 trading days prior to the merger announcement. Obtained from Thomson Financial merger and acquisition database and from CRSP.
Shares offered / Shares outstanding	Number of shares offered in the IPO (not including overallotment shares), divided by shares outstanding after the IPO. These data on shares are obtained from the prospectus.
Industry incentive pay	To calculate industry incentive pay, we calculate the percentage of total pay that comes from factors other than salary, for each firm-year in the Execucomp database. We assign a dummy equal to one for IPO firms that belong to industry-years with below median incentive compensation, where industry is defined at the Fama-French 48 level.
Information asymmetry index	The sum of four dummy variables, each of which equals one if the condition is satisfied: firm age below the sample median, firm assets below the sample median, EBITDA / assets below the sample median, and R&D / assets above the sample median
Agency index	The sum of four dummy variables, each of which equals one if the condition is satisfied: CEO is Chairman of the Board, CEO tenure above the sample median, founder firm, and industry incentive pay below the sample median.
Firm management variables	
CEO tenure	The number of years the CEO has served in this capacity at the firm, obtained from IPO prospectuses for IPO firms and from IRRC for mature firms. In regressions in which we use the logged value, we add 1.
Chair tenure	The number of years the Chairman of the Board has served in this capacity at the IPO firm, obtained from IPO prospectuses.
CEO ownership	The number of shares owned by the CEO as a percent of shares outstanding. For IPO firms, data are obtained from IPO prospectuses and all shares are measured pre-IPO. For dual class firms, both CEO shares owned and shares outstanding are summed across all share classes. For mature firms, data are obtained from IRRC and represent the most recent data prior to the annual meeting.

CEO vote percentage	For single class firms, this is the same as CEO ownership, as defined pre-IPO. For dual class firms, we do the following. For each class of shares, the number of shares owned by the CEO prior to the IPO is multiplied by the number of votes per share for that share class. This is summed over all share classes, and then divided by votes outstanding (similarly summed across all share classes). Obtained from IPO prospectuses.
Officer and director ownership	Defined similarly to CEO ownership for IPO firms, as defined pre-IPO, but summed across all officers and directors. Obtained from IPO prospectuses.
Officer and director vote percentage	Defined similarly to CEO vote percentage, as defined pre-IPO, but summed across all officers and directors. Obtained from IPO prospectuses.
CEO-chair duality dummy	A dummy equal to one if the CEO is also Chairman of the Board at the time of the IPO, zero otherwise. Obtained from IPO prospectuses.
Founder firm dummy	A dummy equal to one if the CEO or the Chairman of the Board founded or co-founded the firm, zero otherwise. Obtained from IPO prospectuses.
Shareholder voting variables	
Director proposal	Agenda items up for vote at the firm's annual meeting that pertain to directors up for vote. Obtained from ISS Voting Analytics.
Shareholder proposal	Agenda items up for vote at the firm's annual meeting that a shareholder proposes and that are listed on the firm's proxy statement. Obtained from ISS Voting Analytics.
Years since IPO	This equals one for the first annual meeting after the IPO, conditional on this meeting being within the first 18 months after the IPO. This equals two for the subsequent annual meeting, three for the meeting after that, etc.
Vote for	A dummy equal to one if the mutual fund votes For the proposal, zero otherwise.
ISS "for" (ISS against)	ISS "for" equals one if ISS recommends for the proposal, zero otherwise. Some descriptive statistics report the percentage of cases on which ISS recommends against, and this equals one if the ISS recommendation is 'abstain', 'against', 'do not vote', 'none', or 'withhold'., zero otherwise. Obtained from ISS Voting Analytics.
ISS "for" residual	The residual from a regression of ISS For on firm characteristics, specifically the residual from regressions in Table 5.
Engaged mutual fund	The principal factor extracted from our four fund-level proxies for net benefits of voting: fund size, membership in top-five family, location in top fund MSA, fund turnover. The construction of this factor follows Iliev and Lowry (2015), and is summarized in the text.
Other variables	
Time trend	A count variable equal to one in the first year of the sample (1988), and increasing by one for every subsequent year.

Fig. 1. Evolution of IPO vs mature firms' governance.

The sample consists of 6,143 IPOs between 1988 and 2017, excluding units, ADRs, REITs, closed-end funds, foreign private issuers, limited partnerships, and companies with an offer price less than $5. We further require that we can determine board status and share structure (dual or single class) as of the time of the IPO. The mature firm sample consists of S&P1500 firms that have been public for at least five years, as listed on IRRC. Panel A depicts the percent of both IPO firms and mature firms with classified boards over this period, and Panel B depicts the percent with dual class share structures.

Panel A: Percent of firms with classified boards



Panel B: Percent of firms with dual class structures

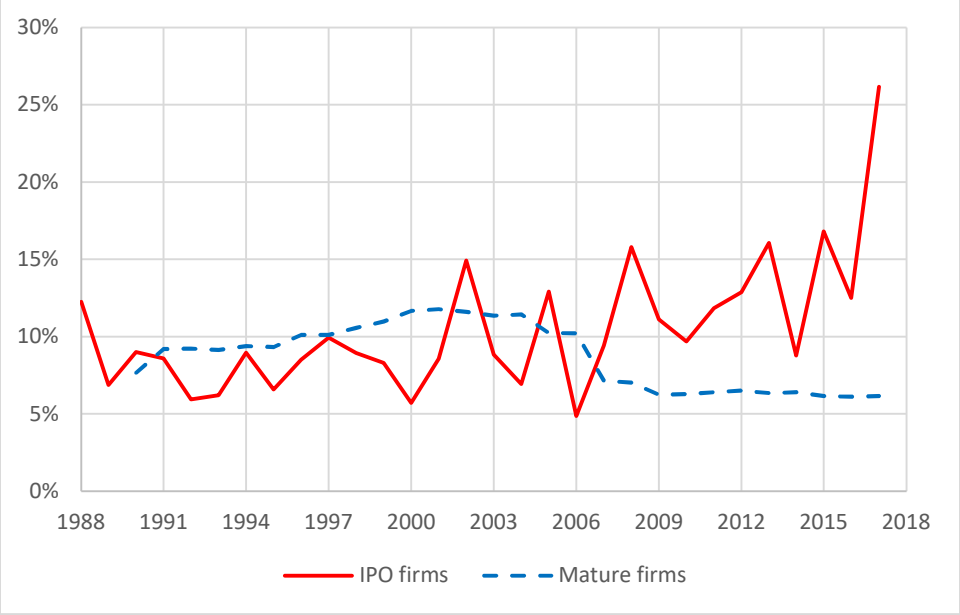
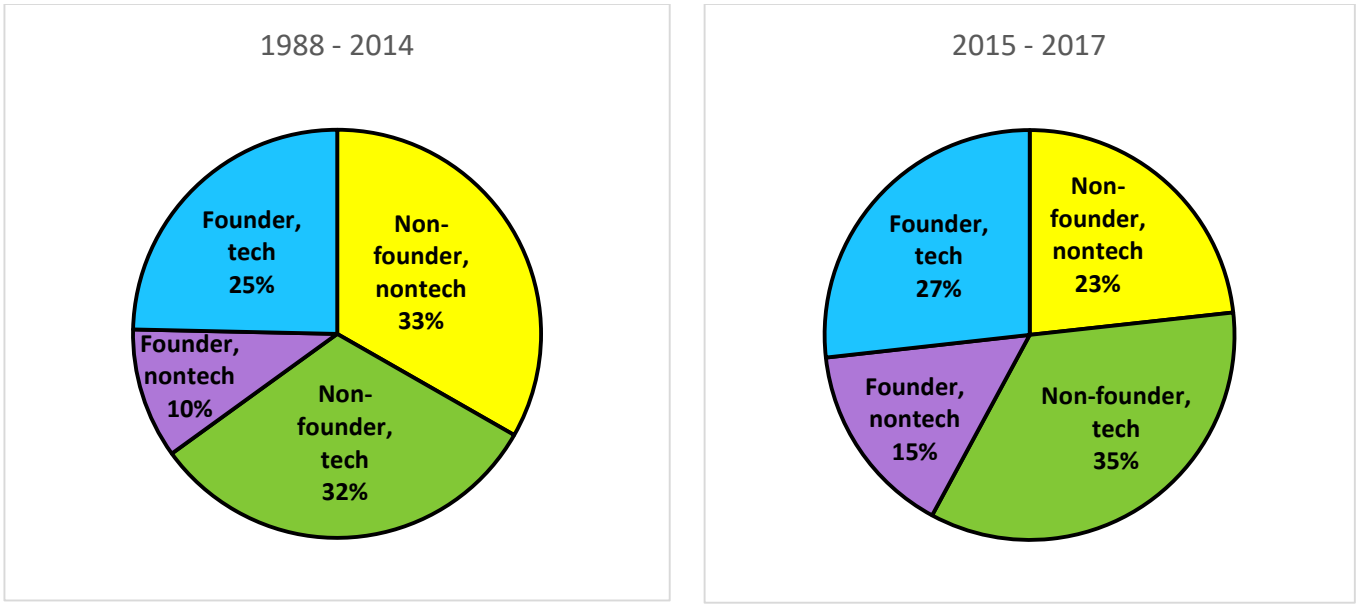


Fig. 2. Changes in average use of classified board and dual class over time by founder firms and technology firms.

The sample consists of 6,143 IPOs between 1988 and 2017, excluding units, ADRs, REITs, closed-end funds, foreign private issuers, and companies with an offer price less than $5. Panel A presents the proportion of IPOs with classified boards by *founder* status and membership in a technology/biotech industry ("*tech*") for 1988-2014 and 2015-2017. Panel B presents the proportion of IPOs with dual class structures by *founder* and *tech* status for 1988-2014 and 2015-2017.

Panel A: Changes in the average classified board firm, over sample period



Panel B: Changes in the typical dual class firm, over sample period

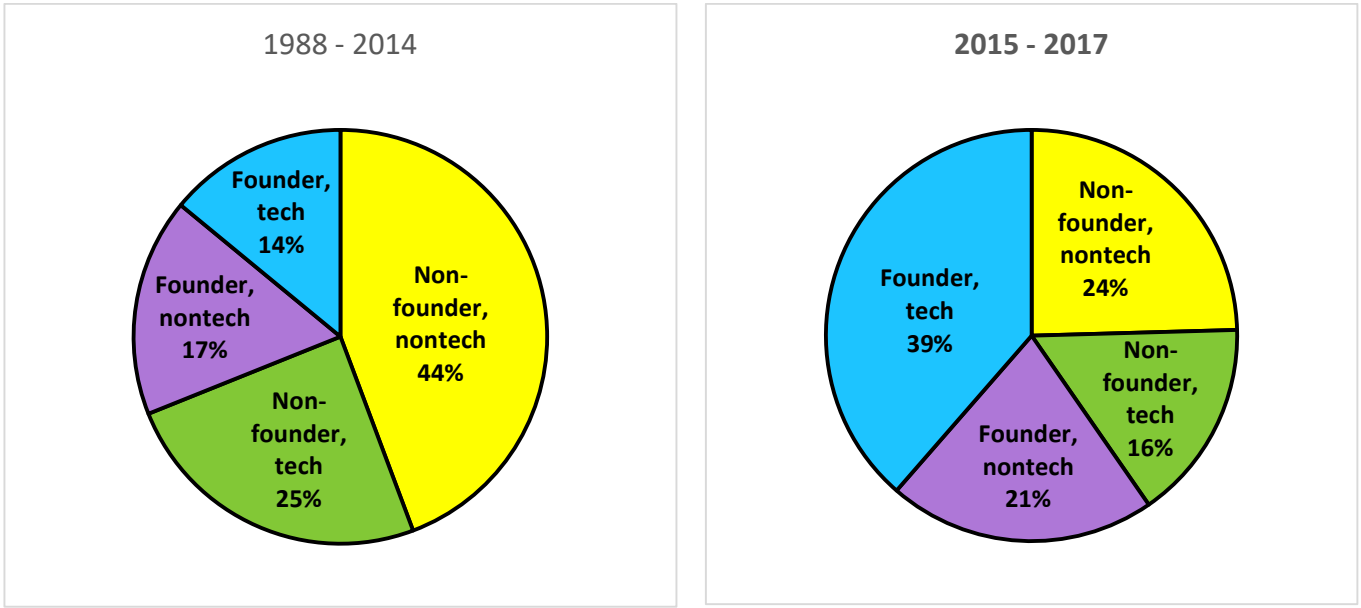
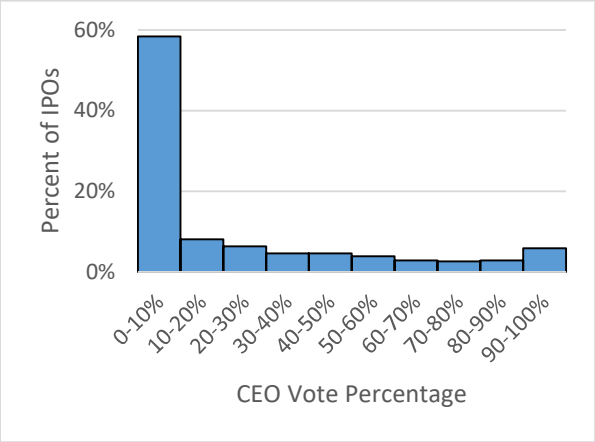


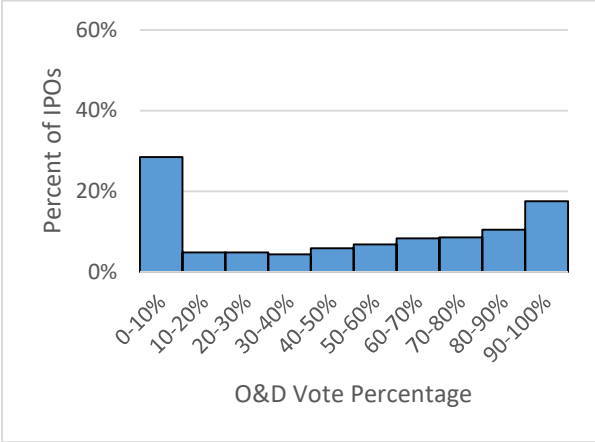
Fig. 3. Voting power within dual class IPOs.

The sample consists of IPOs as described in Figure 1, further restricted to the 438 companies over the 1996 – 2017 period with dual class share structures and with available data from prospectuses. Panel A shows a histogram depicting the distribution of IPOs within different levels of CEO voting power, i.e., the percent of IPOs in which the CEO's Pre-IPO voting percentage is less than 10%, between 10 and 20%, etc. Panel B shows a similar histogram, but it shows the distribution of officer and director (O&D) Pre-IPO voting percentage. Panels C and D are similar, but they are restricted to the subset of dual class IPOs that are founder firms.

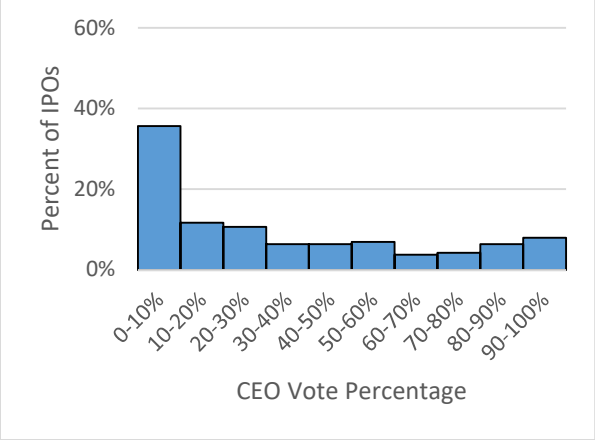
Panel A: Distribution of CEO voting power across all dual class IPOs



Panel B: Distribution of O&D voting power across all dual class IPOs



Panel C: Distribution of CEO voting power across dual class IPOs that are founder firms



Panel D: Distribution of O&D voting power across dual IPOs that are founder firms

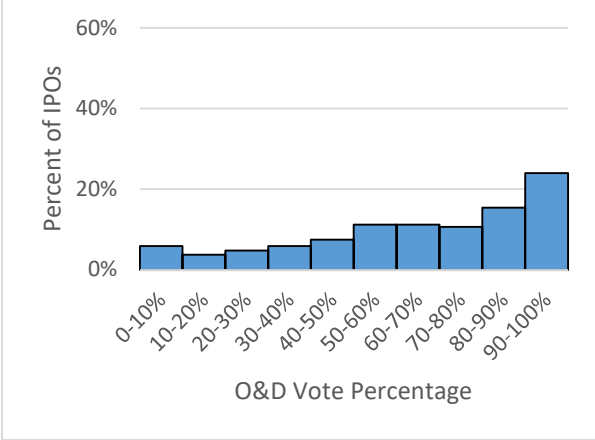
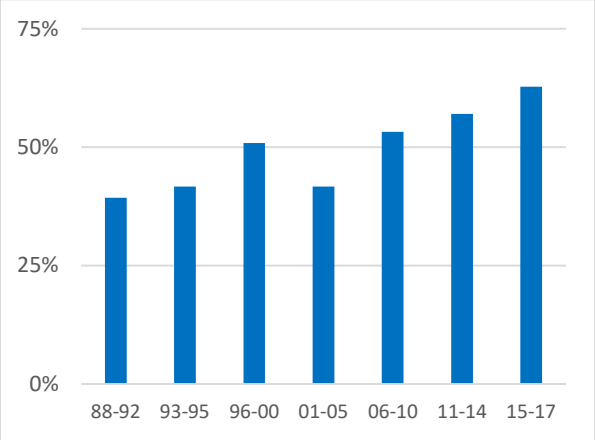
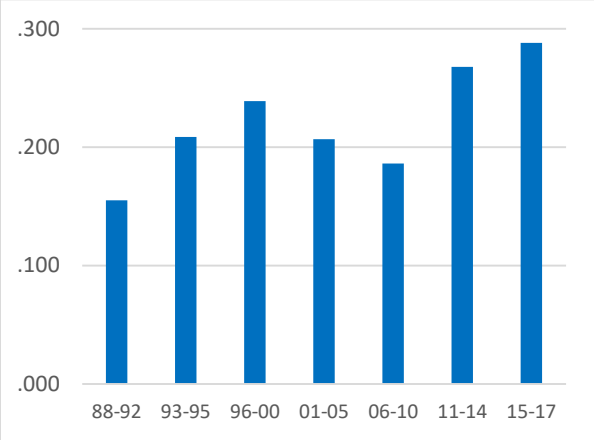


Fig. 4. Trends in information asymmetry proxies for all IPOs.
The sample consists of IPOs between 1988 and 2017, as described in Figure 1. For IPOs within each of the seven denoted time periods, Panels A - E show respectively: the percent of firms with positive pre-IPO R&D, median pre-IPO R&D / total assets among the subset of firms with positive R&D, median pre-IPO EBITDA/Assets, median pre-IPO total assets, and median firm age at the time of the IPO. Full variable descriptions are provided in Appendix I.

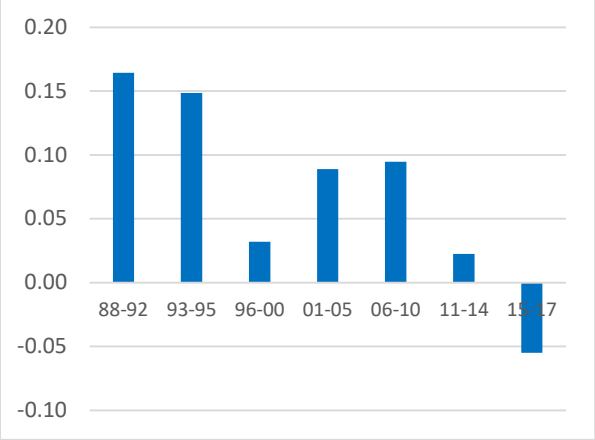
Panel A: Firms with positive R&D



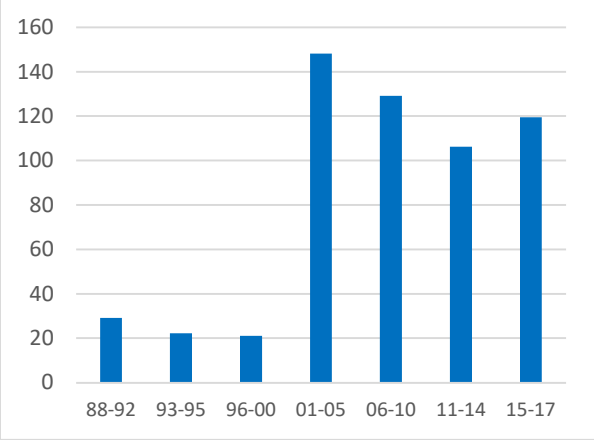
Panel B: Median R&D/A for firms with positive R&D



Panel C: Median EBITDA/Assets



Panel D: Median pre-IPO Assets (millions)



Panel E: Median Firm age

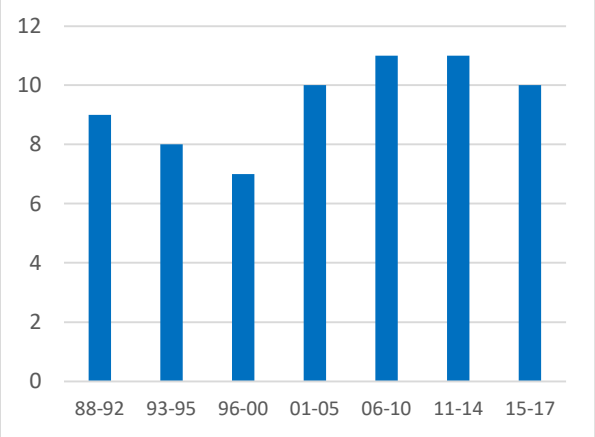
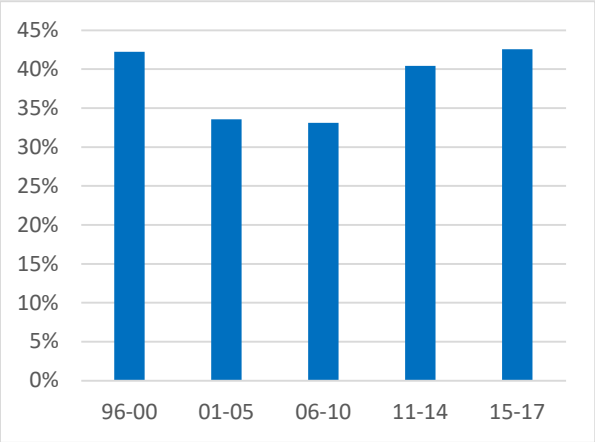


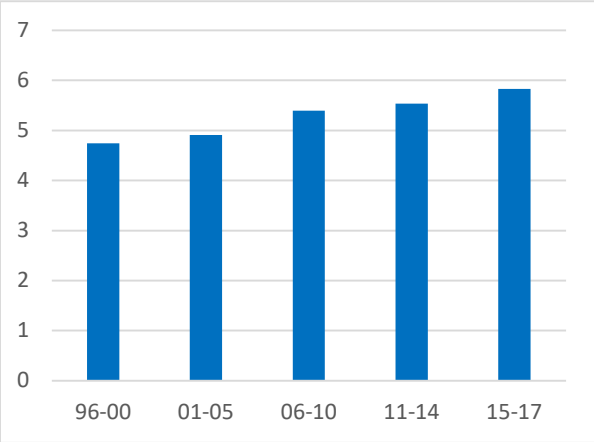
Fig. 5. Trends in agency proxies and CEO characteristics for all IPOs.

The sample consists of IPOs as described in Figure 1. Panels A – E show respectively: the percent of firms in which either the CEO or Chair is founder (founder firms), CEO tenure, the percent of firms in which the CEO is also Chairman of the Board (CEO-Chair Duality), industry-level incentive pay, and average pre-IPO CEO ownership. Each panel shows average characteristics of IPOs within each of the denoted time periods. Full variable descriptions are provided in Appendix I.

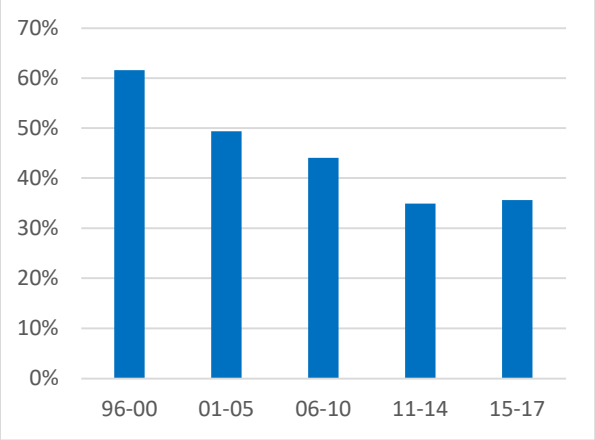
Panel A: Founder firms



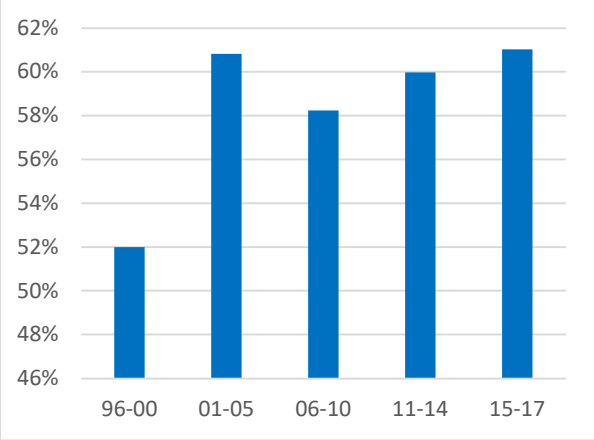
Panel B: CEO tenure (years)



Panel C: CEO-Chair duality



Panel D: Industry incentive pay



Panel E: Mean CEO pre-IPO ownership (cash flow rights)

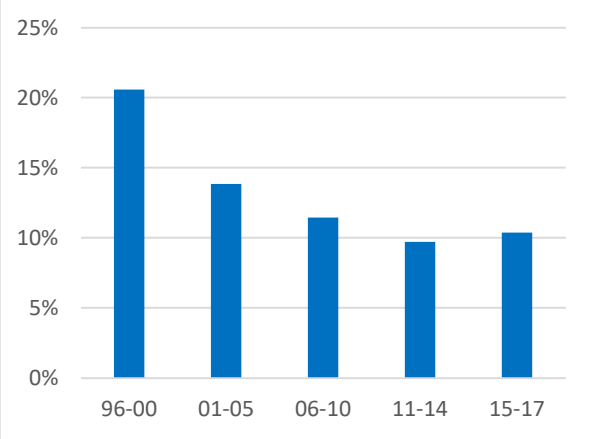


Fig. 6. Percent of firm years with shareholder proposals.

The sample represented by red bars consists of IPOs as described in Figure 1, further restricted to those over the 2005 – 2017 period for which ISS Voting Analytics data are available. Each bar shows the percent of firm-years with a shareholder proposal, for the first year after the IPO, the second year after the IPO, etc. The left-hand blue bar depicts the frequency among matched mature firms, defined as publicly traded firms included in the ISS Voting Analytics database, which have been publicly traded for at least five years, matched on date, 2-digit SIC code, and finally with the closest market capitalization. The right-hand blue bar depicts the frequency among all mature firms, defined as publicly traded S&P1500 firms included in the ISS Voting Analytics database, which have been publicly traded for at least five years.

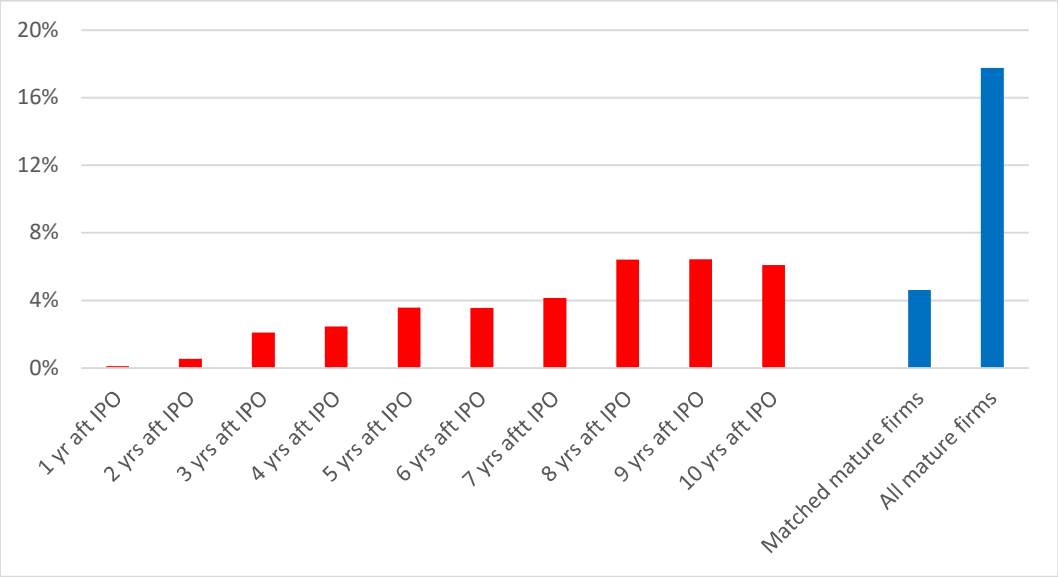
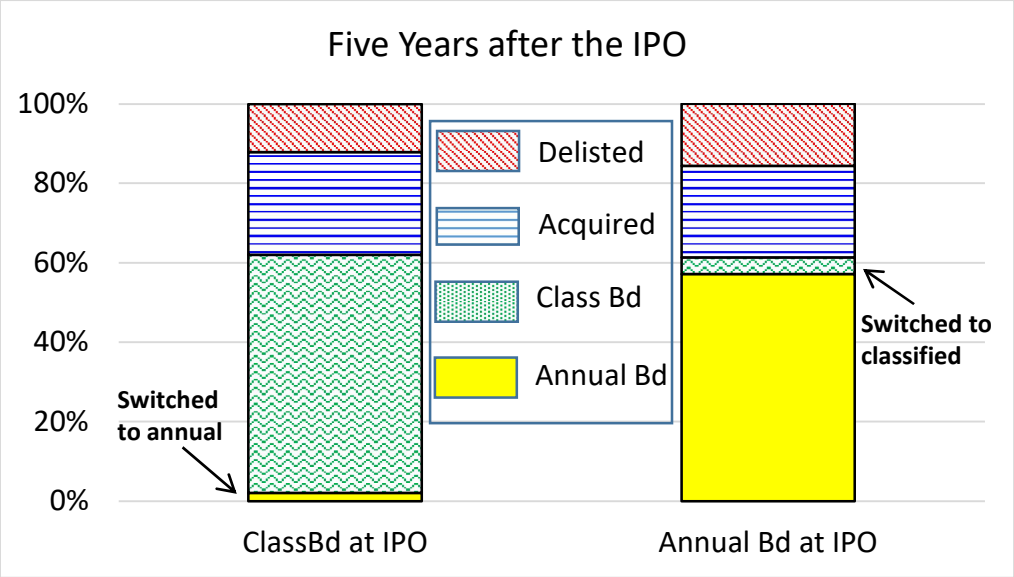


Fig. 7. Changes in firm governance, five years after IPO.

The sample in Panels A and B consists of the 6,143 IPOs as described in Figure 1. Panels A and B show the percent of IPO firms that had switched from a classified board to an annual board by either five or ten years after the IPO, and analogously the percent that had switched from an annual board to a classified board. In Panel A (Panel B), data on year 5 (year 10) exclude 448 firms (734 firms) that have been public less than five (ten) years as of 2017 and 40 (24) firms for which we are unable to determine board status as of year five (ten). In Panel C (Panel D), the sample is restricted to a sample of 111 (100) dual class IPOs that had been public for five (ten) years as of 2017, consisting of carve-outs and matched non-carve-outs. For each carve-out IPO with a dual class structure, we select a matched non-carve-out IPO that similarly had a dual class structure. We match on offer year (requiring a maximum of two years between offer dates), industry, and size, as described in more detail in the text. Bars depict the percent of these offerings that switched to single class, were still dual class, were acquired, or were delisted, five years after the IPO. The left-hand bar depicts these rates for the full sample, whereas the righthand two bars separate by carve-out versus non-carve-out.

Panel A: Evolution of firms with classified boards vs annual boards at IPO, five years after IPO



Panel B: Evolution of firms with classified boards vs annual boards at IPO, ten years after IPO

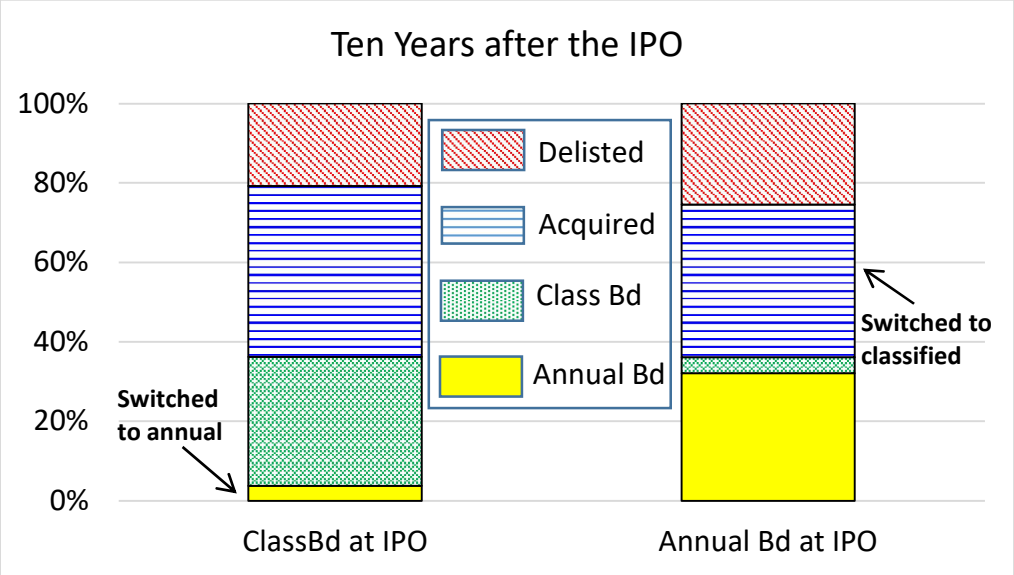
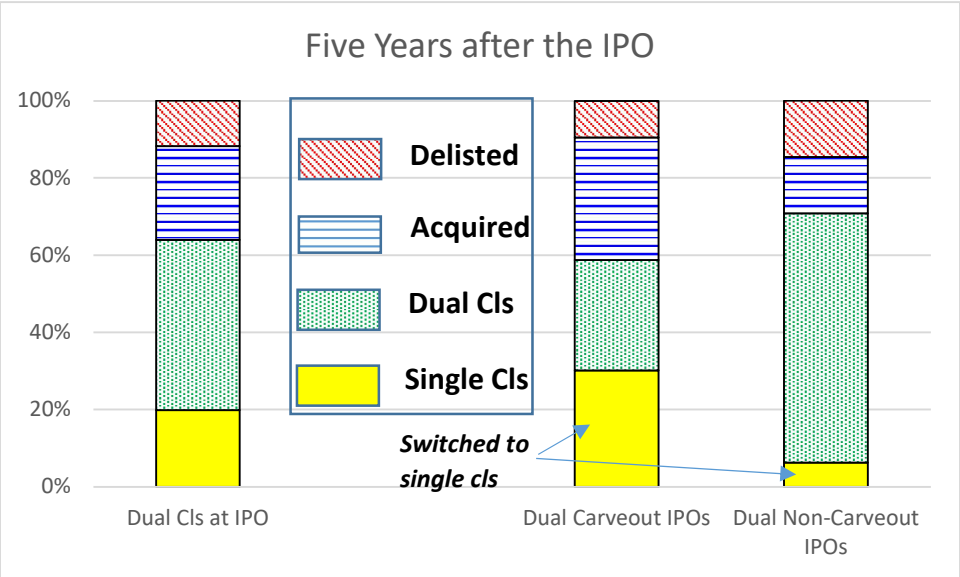


Fig. 7 (continued)

Panel C: Evolution of firms with dual class structure at IPO: Carveouts vs. non-carveouts, five years after IPO



Panel D: Evolution of firms with dual class structure at IPO: Carveouts vs. non-carveouts, ten years after IPO

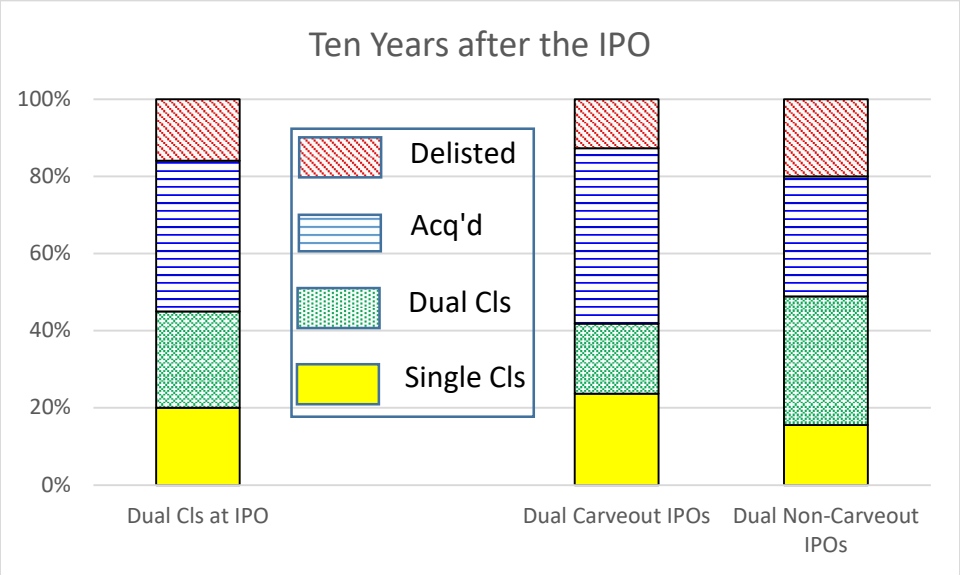


Table 1

IPO descriptive statistics.

The sample consists of 6,143 IPOs between 1988 and 2017, excluding utilities, unit offerings, ADRs, REITs, closed-end funds, foreign private issuers, limited partnerships, and companies with an offer price less than $5. We further require that we can determine boar status and share structure (dual or single class) as of the time of the IPO. Means of firm and offer-specific characteristics are reported. We present these descriptive statistics across all 6,143 IPO firms in the sample, and also across those with classified versus annual boards, and those with dual class versus single class share structures. Variable definitions are provided in Appendix 1. ***, **, and * indicate significant differences at the 1, 5, and 10% levels between (i) classified and annual boards (column 3), and (ii) dual class and single class structures (column 5).

		Board structure		Share structure	
	All firms (n=6143)	Classified (n=3453)	Annual (n=2690)	Dual class (n=555)	Single class (n=5588)
Information asymmetry proxies					
Firm age	16.39	16.82	15.83*	25.18	15.51***
R&D/assets pre-IPO	0.19	0.20	0.19	0.05	0.21***
EBITDA/assets pre-IPO	-0.16	-0.15	-0.17	0.05	-0.18***
Assets pre-IPO	786.16	765.14	813.62	1,992.90	665.40***
Technology / biotech co.	0.53	0.57	0.49***	0.40	0.55***
Agency proxies and CEO characteristics					
Founder firm	0.34	0.35	0.31***	0.34	0.33
CEO pre-IPO ownership	0.17	0.15	0.22***	0.22	0.17***
CEO tenure	5.62	5.52	5.79	6.51	5.53***
CEO-chair duality	0.62	0.59	0.65***	0.61	0.62
Measures of firm size / type					
Proceeds (mil $2015)	166.16	166.11	166.22	474.42	135.54***
Carve-out	0.15	0.15	0.15	0.22	0.14*
Quality of associated intermediaries					
Underwriter rank	7.04	7.33	6.67***	7.74	6.97***
VC backed	0.41	0.47	0.33***	0.23	0.43***
Post-IPO measures					
Initial return	20.95	23.82	17.26***	17.97	21.24**
Market cap (mil $2015)	949.39	1,016.07	863.61	2,996.70	751.55***
Tobin's Q	3.46	3.72	3.13***	2.93	3.51***

Table 2

Percent of firms with classified boards, by industry.

The sample in Panel A consists of IPOs, as described in Table 1. The sample in Panel B consists of mature firms, defined as S&P1500 firms that have been public for at least five years, as listed on IRRC. Each sample is classified according to the twelve Fama-French industries. Panel A (Panel B) shows the percent of IPO firms (mature firms) within each time period and each industry group that have a classified board.

Panel A: IPO firms

	Fama-French industry 12 group										
Time period	Consumer nondurable	Consumer durable	Manu-facturing	Energy	Chemicals	Business eqpt	Telecom	Shops	Health-care	Finance	Other
1988 - 1992	36%	33%	46%	48%	27%	37%	56%	41%	33%	43%	35%
1993 - 1995	33%	55%	45%	59%	50%	38%	44%	42%	48%	59%	46%
1996 - 2000	43%	28%	53%	44%	23%	63%	53%	56%	58%	63%	59%
2001 - 2005	53%	70%	68%	55%	89%	67%	63%	62%	77%	56%	58%
2006 - 2010	60%	33%	64%	72%	67%	76%	54%	63%	81%	68%	59%
2011 - 2014	90%	100%	77%	65%	67%	81%	89%	83%	82%	58%	70%
2015 - 2017	83%	100%	85%	56%	100%	83%	33%	78%	82%	55%	70%

Panel B: Mature firms

	Fama-French industry 12 group										
Time period	Consumer nondurable	Consumer durable	Manu-facturing	Energy	Chemicals	Business eqpt	Telecom	Shops	Health-care	Finance	Other
1988 - 1992	54%	60%	68%	54%	61%	45%	61%	55%	57%	57%	61%
1993 - 1995	54%	61%	68%	55%	62%	45%	60%	55%	51%	59%	60%
1996 - 2000	54%	62%	65%	53%	62%	45%	66%	60%	56%	58%	56%
2001 - 2005	51%	63%	68%	52%	64%	48%	49%	58%	55%	60%	57%
2006 - 2010	50%	62%	65%	53%	62%	45%	26%	50%	52%	51%	49%
2011 - 2014	34%	42%	55%	36%	52%	39%	17%	37%	43%	33%	39%
2015 - 2017	27%	29%	46%	25%	40%	31%	14%	27%	36%	27%	32%

Table 3.
Predictions for the Agency and Optimal Governance Hypotheses.

	Predictions of Agency Hypothesis	Predictions of Optimal Governance Hypothesis
IPO firms	Managers seek to protect private benefits of control and choose governance structures that allow them to do so. • Classified boards and dual class structures facilitate managers' protection of private benefits of control.	IPO firms have unique governance demands, due to long-term projects and high information asymmetry. • These unique governance demands motivate firms to implement classified boards and/or dual class structures.
ISS	Recognizes these high agency costs and, as a result, is more likely to: • Recommend against directors of IPO firms. • Recommend against directors of firms with classified boards and dual class structures.	Does not recognize the unique demands of IPO firms. Follows one-size-fits all policy and, as a result, is more likely to: • Recommend against directors of IPO firms. • Recommend against directors of firms with classified boards and dual class structures.
Mutual funds, especially the engaged funds	Independently conclude that directors of IPO firms with particular governance structures facilitate agency: • Vote against directors of IPO firms. • Vote against directors of firms with classified boards and dual class structures.	Determine that directors of IPO firms satisfy firms' unique governance demands: • Vote for directors of IPO firms. • Vote for directors of firms with classified boards and dual class structures.

Table 4

ISS's tendency to recommend against proposals in newly public firms.

In panel A, the sample in the left-hand columns consists of directors up for election in newly public firms' annual meetings between 2006 and 2017, for which ISS Voting analytics data on ISS recommendations are available. Specifically, we include the first three annual meetings after a firm's IPO. For each calendar year, column (1) shows the number of director proposals across these firms, and column (2) shows the percent of these directors on which ISS recommends against. Columns (3) and (4) are similar, with the exception that they focus on a sample of mature firms, defined as IRRC 1500 firms that have been publicly traded for at least five years and for which ISS Voting Analytics data are available. In Panel B, the sample is restricted to the IPOs, as used in columns (1) and (2) of Panel A. We tabulate the percent of directors on which ISS recommended against for classified boards versus annual boards (row 1), and dual class versus single class (row 2).

Panel A: Director proposals in IPO versus mature IRRC firms

	IPO firms		Mature firms	
Meeting year	# Director proposals	% Directors ISS recommends against	# Director proposals	% Directors ISS recommends against
	(1)	(2)	(3)	(4)
2006	1,120	18%	6,561	7%
2007	1,271	17%	7,107	6%
2008	954	14%	6,581	7%
2009	678	21%	7,777	13%
2010	360	18%	7,985	8%
2011	463	13%	8,288	5%
2012	659	19%	8,512	5%
2013	767	20%	8,781	5%
2014	882	17%	8,987	5%
2015	1,247	24%	9,178	6%
2016	1,307	33%	9,228	4%
2017	1,022	55%	8,900	5%
Total	10,730	24%	97,885	6%

Panel B: Director proposals within subsets of IPO firms

	% Directors ISS recommends against among	
Governance structure	Firms with	Firms without
Classified board	27%	20%
Dual class	29%	23%

Table 5

ISS recommendations.

The sample consists of director proposals in firms' annual meetings, over 2006 –2017. In column1, firm-years include IPO firms over thefirst three annual meetings after the IPO plus mature firms, as used in Panel A, Table 4 . In columns 2 and 3, the sample is restricted to the IPO firms over the first three years after the IPO. The dependent variable is a dummy equal to 100 if ISS recommended for the director, zero otherwise. In column 1, IPO firm equals one if it is a recent IPO firm (defined as one of the first three annual meetings after the IPO), zero otherwise. In columns 2 and 3, classified board and dual class equal one if the firm had this structure at the time of the IPO, zero otherwise. In column 3, wedge is defined as insider voting rights minus cash flow rights for dual class firms, where insiders include all officers and directors. Carveout equals one if the IPO was a carve-out, zero otherwise. The *Information Asymmetry Index* represents the sum of four indicator variables, each of which captures a proxy for firm information asymmetry: below-median firm age, below-median assets, below-median EBITDA/assets, and above-median R&D/assets. The *Agency Index* represents the sum of 4 variables: a dummy equal to one if the firm is a founder firm, a dummy equal to one if the CEO has above-median tenure, a dummy equal to one if the CEO is also chairman of the Board, and a dummy equal to one if the firm belongs to an industry with low incentive pay. All control variables are defined in Appendix I . Robust standard errors are shown in parentheses, and all regressions include meeting year and Fama-French 12 industry fixed effects. ***, **, and *denote significance at the 1, 5, and 10% significance levels.

	Dependent variable = ISS "for"			
	IPO & IRRC firms	IPO firms	IPO firms	IPO firms
IPO firm	-12.50***			
	(0.37)			
Dual class		-10.82***	-10.31***	-17.15***
		(1.26)	(1.75)	(3.24)
Dual class × Wedge			2.71	-1.07
			(10.78)	(11.13)
Dual class × Carve-out			-3.67	-1.59
			(3.25)	(3.44)
Dual class × Info asymmetry index				1.04
				(1.01)
Dual class × Agency index				2.26**
				(1.15)
Classified board		-7.93***	-7.92***	2.08
		(0.80)	(0.80)	(1.95)
Class board × Info asymmetry index				-5.01***
				(0.60)
Class board × Agency index				-0.24
				(0.73)
Information asymmetry proxies:				
R&D/Assets	-1.22	1.15	1.23	1.73
	(1.80)	(3.90)	(3.90)	(3.87)
EBITDA/Assets	4.48***	-0.67	-0.67	1.79
	(0.88)	(2.07)	(2.07)	(2.13)
Ln(Assets)	0.69***	-0.35	-0.36	-0.08
	(0.05)	(0.33)	(0.33)	(0.34)
Ln(Firm age at IPO)		0.10*	1.03**	2.09***
		(0.52)	(0.52)	(0.58)
Information asymmetry index				3.81***
				(0.69)
Agency proxies and CEO characteristics:				
Founder firm dummy		3.14***	3.08***	3.25***
		(0.87)	(0.87)	(1.14)
CEO ownership	-0.19***	-0.10***	-0.11***	-0.13***
	(0.01)	(0.03)	(0.03)	(0.03)
Ln(CEO tenure)	-0.38***	1.69***	1.59***	1.17
	(0.11)	(0.55)	(0.55)	(0.71)
CEO-chair duality dummy		-1.96**	-1.93**	-2.26*
		(0.86)	(0.86)	(1.19)

Agency index				0.109
				(0.88)
Other control variables:				
Abnormal returns over prior year	-0.058	-0.91	-0.88	-1.05
	(0.25)	(0.69)	(0.69)	(0.68)
Tobin's Q	0.73***	1.36***	1.37***	1.38***
	(0.09)	(0.21)	(0.21)	(0.21)
Book leverage	-5.39***	-15.4***	-15.6***	-14.18***
	(0.49)	(1.86)	(1.85)	(1.88)
Carve-out dummy		3.80***	4.63***	4.03***
		(1.33)	(1.49)	(1.49)
Controlled co, not dual		-16.36***	-16.60***	-16.98***
		(1.28)	(1.30)	(1.29)
Years since IPO		5.55***	5.54***	5.58***
		(0.50)	(0.51)	(0.50)
Initial return		-3.29*	-3.38*	-3.98**
		(1.76)	(1.77)	(1.74)
VC-backed dummy		0.64	0.59	1.36
		(1.08)	(1.08)	(1.09)
Observations	125,253	11,180	11,180	11,180
Year, Industry fixed effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.06	0.16	0.16	0.17

Table 6.

Mutual fund votes on IPO firms

The sample consists of mutual funds' votes on directors in IPO firms. Firm-years include the first three annual meetings after firms' IPOs, over 2006 –2017. The dependent variable is a dummy equal to 100 if the mutual fund voted for the director, zero otherwise. *ISS "for"residual* equals the residual from the regression shown in Column 2 of Table 5 . All other variables are defined in Table 5 and in Appendix 1 . Standard errors, clustered at the fund level, are shown in parentheses, and all regressions include meeting year and Fama-French 12 industry fixed effects. ∗∗∗, ∗∗, and ∗denote significance at the 1, 5, and 10% significance levels.

	Dependent variable = Fund for	
Dual class	-6.71***	-6.55***
	(0.35)	(0.56)
Dual class × Wedge		-8.86***
		(2.14)
Dual class × Info asymmetry index		0.35*
		(0.19)
Dual class × Agency index		0.12
		(0.25)
Classified board	-3.54***	-4.22***
	(0.25)	(0.42)
Classified board × Info asymmetry index		0.98***
		(0.16)
Classified board × Agency index		-0.54***
		(0.17)
Information asymmetry index		-0.55***
		(0.20)
Agency index		0.27
		(0.25)
ISS "for" residual	0.42***	0.42***
	(0.02)	(0.02)
R&D/Assets	-1.57*	-1.72*
	(0.92)	(0.94)
EBITDA/Assets	-0.99*	-1.13**
	(0.53)	(0.52)
Log(Assets)	0.14	0.12
	(0.15)	(0.15)
Ln(Firm age at IPO)	0.93***	0.90***
	(0.11)	(0.12)
Founder firm dummy	1.31***	1.34***
	(0.22)	(0.27)
CEO ownership	-0.05***	-0.04***
	(0.01)	(0.01)
Log(CEO tenure)	0.80***	0.85***
	(0.12)	(0.16)
CEO-Chair duality dummy	-1.15***	-1.23***
	(0.18)	(0.28)
Abnormal returns over prior year	-0.49***	-0.44***
	(0.14)	(0.14)
Tobins Q	0.80***	0.77***
	(0.07)	(0.07)
Book leverage	-8.88***	-9.12***
	(0.48)	(0.50)
Carve-out dummy	1.32***	1.29***
	(0.26)	(0.26)
Controlled co, not dual	-8.35***	-8.18***
	(0.42)	(0.43)
Years since IPO	2.19***	2.22***
	(0.19)	(0.19)

Initial return	-0.72*	-0.75*
	(0.40)	(0.40)
VC-backed dummy	0.12	-0.04
	(0.26)	(0.26)
Observations	511,924	511,924
Year, Industry fixed effects	Yes	Yes
Adjusted R^2	0.26	0.26

Table 7.

Engaged mutual funds.

The sample consists of mutual funds' votes on directors in IPO firms. Firm-years include the first three annual meetings after firms' IPOs, over 2006 –2017. Panel A includes all mutual funds, and Panel B is restricted to engaged mutual funds. The dependent variable is a dummy equal to 100 if the mutual fund voted for the director, zero otherwise. Engaged voter (equivalently referred to as engaged mutual fund) comes from a principal factor analysis based on mutual fund family size, mutual fund size, mutual fund concentration within the MSA, and mutual fund turnover, as discussed in more detail in the text. Funds with an above-median value of this principal factor are labeled as engaged funds. All other variables are defined in Table 5 and in Appendix 1 . Standard errors, clustered at the fund level, are shown in parentheses, and all regressions include meeting year and Fama-French 12 industry fixed effects. ∗∗∗, ∗∗, and ∗denote significance at the 1, 5, and 10% significance levels.

Panel A: All mutual funds

	Dependent variable = Fund for		
Dual class	-7.17***	-6.48***	-7.06***
	(0.51)	(0.34)	(0.51)
Dual class × Engaged voter	1.83***		2.12***
	(0.66)		(0.61)
Dual class × Wedge	0.91		-0.55
	(2.89)		(2.86)
Dual class × Wedge × Engaged voter	-15.78***		-13.08***
	(3.94)		(3.83)
Classified board	-3.60***	-4.09***	-4.08***
	(0.25)	(0.52)	(0.52)
Classified board × Engaged voter		-1.71***	-1.82***
		(0.64)	(0.64)
Classified board × Info asymmetry index		-0.34	-0.38
		(0.23)	(0.23)
Classified board × Info asym index × Engaged voter		2.24***	2.31***
		(0.34)	(0.34)
Information asymmetry index		0.65**	0.60**
		(0.28)	(0.28)
Info asymmetry index × Engaged voter		-2.02***	-2.01***
		(0.36)	(0.36)
ISS "for" residual	0.42***	0.42***	0.42***
	(0.02)	(0.02)	(0.02)
Engaged voter	3.93***	6.11***	5.85***
	(0.80)	(0.80)	(0.80)
Controls	Yes	Yes	Yes
Observations	511,924	511,924	511,924
Adjusted R^2	0.27	0.27	0.27

Panel B: Engaged mutual funds

	Dependent variable = Fund for	
Dual class	-5.86***	-4.93***
	(0.53)	(0.80)
Dual class × Info asymmetry index		0.16
		(0.25)
Dual class × Agency index		0.09
		(0.32)
Dual class × Wedge		-13.47***
		(2.64)
Classified board	-2.99***	-4.50***
	(0.28)	(0.53)
Classified board × Info asymmetry index		1.55***
		(0.21)
Classified board × Agency index		-0.65***
		(0.24)
Information asymmetry index		-1.11***
		(0.25)
Agency index		0.38
		(0.36)
ISS "for" residual	0.32***	0.33***
	(0.024)	(0.02)
Controls	Yes	Yes
Observations	263,354	263,354
Adjusted R^2	0.19	0.19

Table 8.

Do trends change in more recent years?

The sample consists of mutual funds' votes on directors in IPO firms. Firm-years include the first three annual meetings after firms' IPOs, over 2006 –2017. Columns 1 and 2 include all mutual funds, and column 3 is restricted to engaged mutual funds. The dependent variable is a dummy equal to 100 if the mutual fund voted for the director, zero otherwise. *Post15* is a variable equal to one for firms that went public in 2015 or later, zero otherwise. All other variables are defined in Tables 5-7 and in Appendix 1 . Standard errors, clustered at the fund level, are shown in parentheses, and all regressions include meeting year and Fama-French 12 industry fixed effects. ∗∗∗, ∗∗, and ∗denote significance at the 1, 5, and 10% significance levels.

	Dependent variable = Fund for		
	All funds	All funds	Engaged funds
Dual class	-6.43***	-5.75***	-4.57***
	(0.36)	(0.38)	(0.53)
Dual class × Post15	-5.00***	-3.43**	-2.90
	(1.52)	(1.52)	(1.81)
Dual class × Wedge		-6.72***	-11.33***
		(1.97)	(2.51)
Dual class × Wedge × Post15		-14.60	-8.94
		(9.91)	(11.20)
Classified board	-3.72***	-4.75***	-5.19***
	(0.23)	(0.37)	(0.46)
Classified board × Post15	4.05***	-6.61***	-2.70
	(1.32)	(2.29)	(2.27)
Classified board × Info asymmetry index		0.65***	1.16***
		(0.15)	(0.19)
Classified board × Info asymmetry index × Post15		4.63***	3.58***
		(0.90)	(0.80)
Info asymmetry index		-0.41**	-0.95***
		(0.18)	(0.23)
Info asymmetry index × Post15		-2.21**	-0.68
		(0.90)	(0.65)
ISS "for" residual	0.42***	0.42***	0.33***
	(0.02)	(0.02)	(0.02)
Post15	-0.20	4.79**	0.47
	(1.18)	(2.29)	(2.09)
Controls	Yes	Yes	Yes
Year, Industry fixed effects	Yes	Yes	Yes
Observations	511,924	511,924	263,354
Adjusted R^2	0.26	0.26	0.19

Table 9.

Heterogeneity within dual class IPO firms.

The sample consists of mutual funds' votes on directors in IPO firms with a dual class share structure. Firm-years include the first three annual meetings after firms' IPOs, over 2006 –2017. The dependent variable is a dummy equal to 100 if the mutual fund voted for the director, zero otherwise. All variables are defined in Tables 5–7 and in Appendix 1 . Control variables used in Table 6 are also included, but not tabulated to conserve space. Standard errors, clustered at the fund level, are shown in parentheses, and all regressions include meeting year and Fama-French 12 industry fixed effects. ∗∗∗, ∗∗, and ∗denote significance at the 1, 5, and 10% significance levels.

	Dependent variable = Fund for				
Wedge × Engaged voter	-38.45***				-20.38**
	(8.14)				(7.97)
Carve-out × Engaged voter		5.74***			-0.06
		(2.01)			(2.43)
Agency index × Engaged voter			-3.24***		-1.83**
			(0.77)		(0.91)
Info asymmetry index × Engaged voter				-4.65***	-3.73***
				(0.71)	(0.74)
Wedge	-0.15	-22.35***	-22.88***	-22.42***	-10.58
	(7.00)	(5.08)	(5.08)	(5.06)	(7.01)
Carve-out dummy	-2.87**	-6.03***	-2.92**	-2.87**	-2.73
	(1.34)	(1.82)	(1.34)	(1.33)	(1.93)
Agency index	0.18	0.15	1.91	0.45	1.35
	(1.15)	(1.14)	(1.28)	(1.14)	(1.29)
Info asymmetry index	-2.06***	-2.09***	-2.16***	0.47	-0.002
	(0.71)	(0.72)	(0.72)	(0.80)	(0.81)
ISS "for" residual	0.38***	0.38***	0.38***	0.38***	0.38***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Control variables	Yes	Yes	Yes	Yes	Yes
Year, Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	25,323	25,323	25,323	25,323	25,323
Adjusted R^2	0.26	0.26	0.26	0.26	0.26

Table 10.

Determinants of increases in classified boards and dual class, over time.

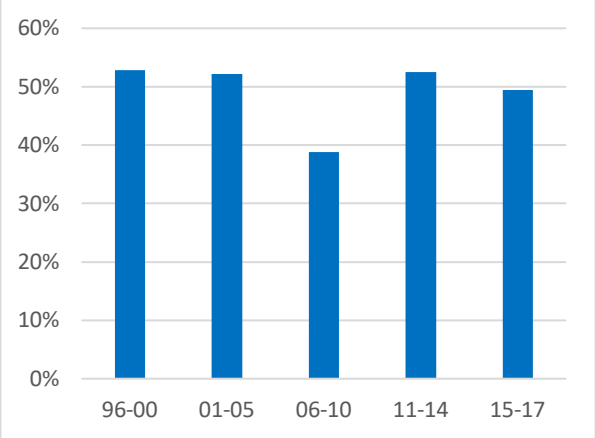
The sample consists of IPOs over the 1988 –2017 period, as described in Table 1 . We further restrict the sample to firms with available data on all variables. The dependent variable in column 1 (2) is a dummy equal to one if the IPO has a classified board (dual class) at the IPO, zero otherwise. The first independent variable is a time trend, equal to one in the first year of the sample (1988) and increasing by one for every subsequent year. This time trend is interacted with an information asymmetry index and with an agency index, as described in Table 5 and Appendix I . All variables are fully defined in the Appendix. Regressions also include Fama-French 12 industry fixed effects, and all standard errors are robust. ∗∗∗, ∗∗, and ∗denote significance at the 1%, 5%, and 10% levels.

	Classified board	Dual class
Time trend	1.53***	-0.16
	(0.23)	(0.17)
Info asymmetry index × Time	0.31***	-0.01
	(0.07)	(0.05)
Agency index × Time	-0.29***	0.28***
	(0.09)	(0.07)
Information asymmetry index	-5.13***	-3.44***
	(1.18)	(0.75)
Agency index	4.86***	-3.63***
	(1.44)	(0.89)
Carveout dummy	3.42*	4.95***
	(2.04)	(1.42)
VC backed dummy	16.02***	-2.68***
	(1.84)	(1.04)
Observations	4,294	4,294
Adjusted R^2	0.10	0.08

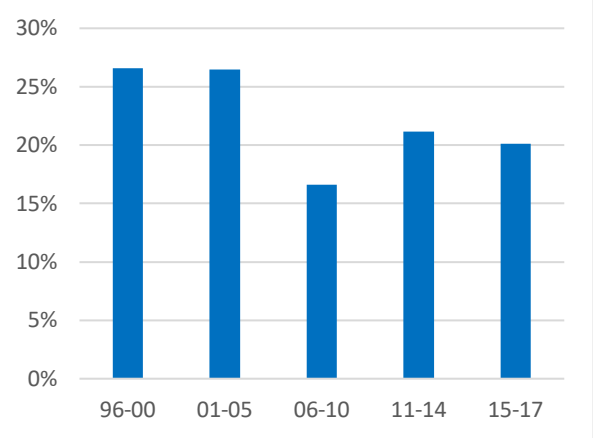
Internet Appendix Figure A-1

The sample consists of IPOs as described in Figure 1, restricted to the 1996 – 2017 period where data on all the depicted variables are available. For IPOs within each of the five denoted time periods, Panels A – D show respectively: average pre-IPO ownership across all officers and directors (O&D), average CEO vote percentage, average vote percentage across all officers and directors, and Chair tenure. Full variable descriptions are provided in Appendix I.

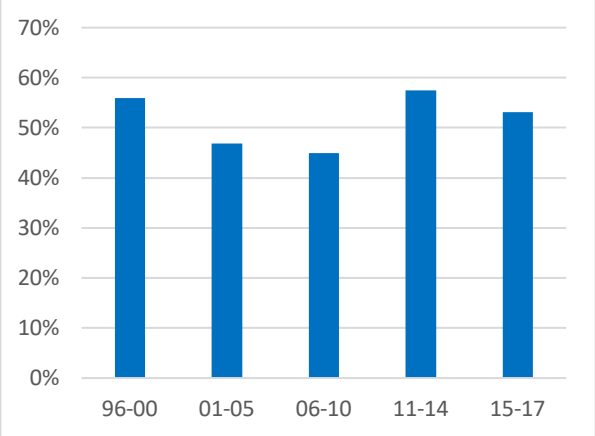
Panel A: O&D pre-IPO ownership



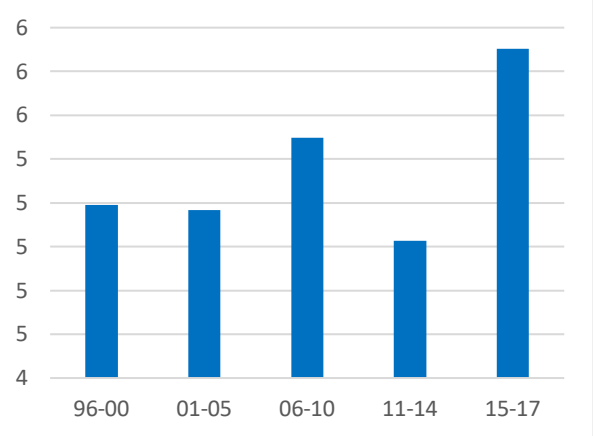
Panel B: CEO vote pre-IPO vote percentage



Panel C: O&D pre-IPO vote percentage



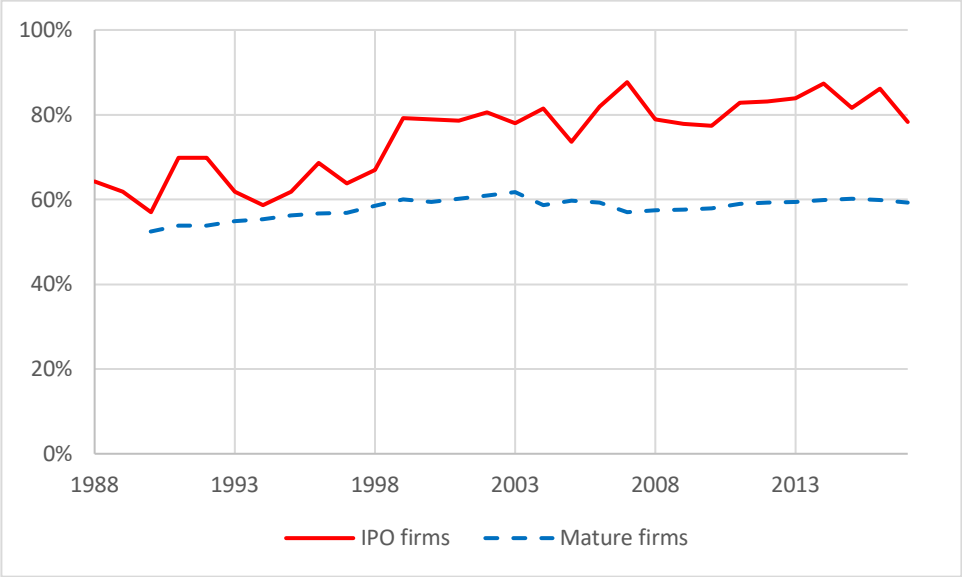
Panel D: Chair tenure



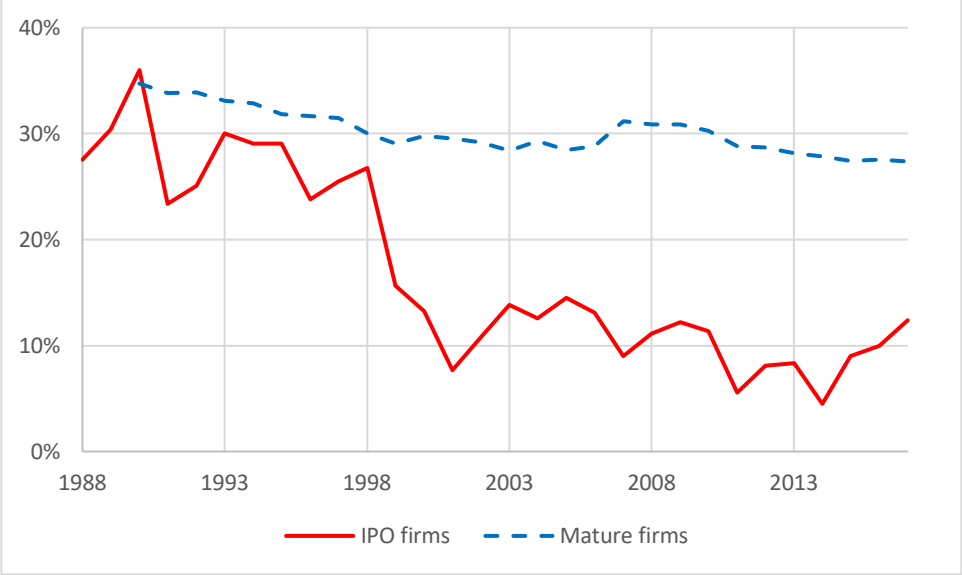
Internet Appendix Figure A-2

The sample consists of IPO firms and mature firms, as previously described in Figure 1. Panel A plots the percent of firms going public each year that are incorporated in Delaware, as well as the percent of mature firms during that year that are incorporated in Delaware. Panel B plots analogous statistics, but it measures the percent of firms incorporated in their home state, defined as the state of their headquarters.

Panel A: Percent firms incorporated in Delaware



Panel B: Percent firms incorporated in home state



Internet Appendix Table A-1: Subsample analyses of IPOs

This table presents descriptive statistics similar to those in Table 1, but it subsamples firms by the year in which they went public. Columns 1 and 2 show all IPOs that went public during 1988 – 2014 and during 2015, respectively. Columns 3 and 4 show IPOs with a classified board that went public during these same two periods. Columns 5 and 6 show IPOs with a dual class share structure that went public during these same two periods.

	All IPOs		Classified board IPOs		Dual class IPOs	
	1988 – 2014 (n=5840)	2015 – 2017 (n=303)	1988 – 2014 (n=3225)	2015 – 2017 (n=228)	1988 – 2014 (n=498)	2015 – 2017 (n=57)
Information asymmetry proxies						
Firm age	16.46	15.00	16.96	14.80	26.22	16.19
R&D/Assets pre-IPO	0.18	0.37	0.18	0.37	0.05	0.12
EBITDA/Assets pre-IPO	-0.14	-0.49	-0.13	-0.44	0.06	-0.06
Assets pre-IPO	764.06	1,203.64	740.41	1,104.53	1,816.23	3,516.66
Technology / biotech co.	0.46	0.26	0.48	0.29	0.37	0.51
Agency proxies and CEO characteristics						
Founder firm	0.33	0.43	0.35	0.42	0.31	0.60
CEO pre-IPO ownership	0.18	0.10	0.15	0.09	0.22	0.18
CEO tenure	5.61	5.83	5.49	5.82	6.32	7.85
CEO-chair duality	0.63	0.36	0.61	0.33	0.61	0.54
Measures of firm size / type						
Proceeds (mil $2015)	164.63	195.69	164.42	190.08	482.91	400.19
Carve-out	0.15	0.15	0.15	0.15	0.23	0.19
Quality of associated intermediaries						
Underwriter rank	7.07	6.38	7.38	6.59	7.84	6.85
VC backed	0.41	0.48	0.46	0.57	0.21	0.46
Post-IPO measures						
Initial return	21.25	15.09	24.29	17.16	17.67	20.58
Market cap (mil $2015)	932.93	1,263.67	999.09	1,252.98	2,960.71	3,289.53
Tobin's Q	3.48	3.00	3.75	3.22	2.84	3.70

Internet Appendix Table A-2: Description of dual class IPOs with low O&D ownership

Of the 555 dual class IPOs for which we have ownership data, officers and directors (O&Ds) control less than 10% of the vote in 24% of all dual class firms (131 firms). Of these, 60% (79 firms) equity carve-outs, in which the parent controls 91% of the votes on average (median 96%). The remaining 52 dual class firms in which the officers and directors are shown in the prospectus to control less than 10% of the vote are as follows:

- 29% (38 firms) have one or more corporate entity blockholders who control the vote. On average (median), these blockholders control 63% (64%) of the vote. *See Panel A below for listing of all firms.*

- For the remaining 14 firms *(see Panel B below for a listing of these firms)*:
    - Four are dual-class firms for which the IPO class is the only class that votes, and there are no large voting blockholders.
    - Eight are controlled by voting partnerships and member interests.
    - Two are controlled by charitable trusts or foundations established by founders:
        1. United Parcel Service, Inc. (UPS), for which the high vote shares are held by foundations and trusts established by the founders and their heirs and descendants.
        2. Readers Digest Association, for which the high vote shares were controlled by charitable foundations set up by the founders.

Panel A: Dual class IPOs with blockholders (that not carveouts) with low O&D voting

Issuer name *(first three blockholders in prospectus)*	Offer date	% vote of IPO class shares	% vote held by all 5% blockholders	% vote of O&Ds
Time Warner Telecom Inc *(a) Time Warner Companies, Inc.; (b) MediaOne; (c) Newhouse*	5/11/1999	2.17%	98%	0.00%
Spansion Inc *(a) Advanced Micro Devices, Inc.; (b) Fujitsu*	12/15/2005	71.96%	64%	0.00%
Neff Corp *(a) Wayzata Investment Partners LLC*	11/20/2014	41.20%	59%	0.00%
MasterCard Inc *(a) JPMorgan Chase & Co.; (b) Citigroup Inc.; (c) Bank of America Corporation*	5/24/2006	100.00%	41%	0.00%
Teleport Communications Group *(a) Cox Communications, Inc.; (b) TCI Communications, Inc.; (c) Comcast*	6/27/1996	1.85%	98%	0.02%
EP Energy Corp *(a) Apollo Funds; (b) Riverstone; (c) Access*	1/16/2014	100.00%	85%	0.36%
Infonet Services Corp *(a) KDD Corp; (b) KPN Telecom BV; (c) Swisscom AG*	12/15/1999	15.13%	97%	0.44%
Coty Inc *(a) JAB Holdings II B.V.; (b) Berkshire Partners LLC; (c) Rhone Capital LLC*	6/12/2013	2.27%	98%	0.63%
Celanese Corp *(a) The Blackstone Group; (b) BA Capital Investors Sidecar Fund, LP*	1/20/2005	37.37%	63%	0.67%
TerraForm Power Inc (a) SunEdison; (b) Riverstone; (c) Altai Capital Master Fund Ltd.	7/17/2014	3.93%	94%	0.71%
Virgin Mobile USA Inc *(a) Sprint Ventures; (b) Corvina Holdings Ltd*	10/10/2007	81.33%	54%	0.78%
HomeSide Inc *(a) First Nat'l Bank Boston; (b) Siesta Holdings, Inc.; (c) Thomas H. Lee Equity Fund*	1/30/1997	100.00%	81%	1.01%
Spirit AeroSystems Holdings *(a) Onex Corporation*	11/20/2006	7.02%	92%	1.09%
CBOT Holdings Inc *(a) Caledonia Investments Pty Ltd*	10/18/2005	100.00%	6%	1.17%
eMerge Interactive Inc *(a) Internet Capital Group, Inc.; (b) XL Vision, Inc; (c) XL Partners, LP*	2/4/2000	65.79%	75%	1.74%
INC Research Holdings Inc *(a) Ontario Teachers' Pension Plan Board; (b) Avista Capital Partners*	11/6/2014	82.45%	85%	1.89%
Pameco Corp *(a) TCR Investors (Three Cities Research, Inc.)*	6/4/1997	9.27%	92%	1.94%
Vantiv Inc *(a) Fifth Third Bancorp; (b) Advent International Corp*	3/21/2012	59.70%	96%	2.61%
Teligent Inc *(a) Associated Group, Inc.; (b) Telcom Ventures; (c) Nippon Telegraph Telephone*	11/21/1997	14.16%	86%	3.54%

(continued on next page)

Panel A (continued)

Issuer name *(first three blockholders in prospectus)*	Offer date	% vote of IPO class shares	% vote held by all 5% blockholders	% vote of O&Ds
Ranger Energy Services Inc	8/10/2017	55.06%	55%	3.85%
(a) Ranger Holdings; (b) Torrent Holdings; (c) CSL Opportunities II				
Bucyrus International Inc	7/22/2004	39.70%	60%	4.43%
(a) American Industrial Partners (AIP)				
Booz Allen Hamilton Hldg Corp	11/16/2010	89.35%	19%	4.52%
(a) Explorer Coinvest LLC (controlled by the Carlisle Group)				
Advanced Photonix Inc	2/11/1991	4.59%	62%	4.59%
(a) Xsirius, Inc.				
GNC Holdings Inc	3/31/2011	84.45%	68%	4.95%
(a) Ontario Teachers' Pension Plan Board; (b) Ares Corporate Opportunities Fund II				
Customers Bancorp Inc	5/15/2013	100.00%	9%	5.01%
(a) Rodella Assets Inc.; (b) Amberland Properties LLC; (c) Commerce Street Financial Partners				
Journal Communications Inc	9/23/2003	2.78%	22%	5.35%
(a) Journal Communications, Inc.; (b) Matex Inc.				
Chicago and North Western Hldg	3/31/1992	100.00%	67%	5.56%
(a) Blackstone; (b) DLJ Capital Corp.; (c) Kemper Financial Services				
Nextera Enterprises Inc	5/18/1999	41.68%	64%	5.81%
(a) Nextera Enterprise Holdings, Inc.				
National Bank Holdings Corp	9/19/2012	100.00%	27%	6.05%
(a) Wellington Management; (b) Paulson & Co.; (c) Elliott Management				
The Habit Restaurants Inc	11/19/2014	32.57%	56%	7.72%
(a) KarpReilly, LLC				
Evolent Health Inc	6/4/2015	69.39%	72%	8.04%
(a) TPG Funds; (b) UPMC; (c) The Advisory Board Company				
Security Capital Group Inc	9/17/1997	7.83%	6%	8.42%
(a) The Allstate Corporation				
TMS International Corp	4/13/2011	4.07%	95%	9.04%
(a) Onex Corporation; (b) Tube City EI II Ltd.				
Verisk Analytics Inc	10/6/2009	62.80%	26%	9.06%
(a) American Financial Group, Inc.; (b) Berkshire Hathaway, Inc.; (c) Travelers Companies, Inc.				
DynaVox Inc	4/21/2010	31.40%	45%	9.06%
(a) Vestar Capital Partners; (b) Park Avenue Equity Partners, LP				
ARM Financial Group Inc	6/18/1997	100.00%	50%	9.09%
(a) The Morgan Stanley Leveraged Equity Fund II, LP; (b) Morgan Stanley Capital Partners III, LP				
Noodles & Co	6/27/2013	77.99%	73%	9.29%
(a) Argentia Private Investments Inc.; (b) Catterton Partners				
Pamida Holdings Corp	9/18/1990	100.00%	21%	9.69%
(a) Citicorp Venture Capital; (b) Delphin Investment Assoc; (c) Raleigh Investment Mgmt				

Panel B: Fourteen dual class IPO firms with low O&D voting and no corporate blockholders

(i) Four firms in which IPO class has 100% of the votes (i.e., other classes have no votes):

Issuer name	Offer date	% vote of O&Ds
Dial Page Inc	11/5/1992	0.00%
Delco Remy International Inc	12/17/1997	0.00%
Visa Inc	3/18/2008	0.02%
Chicago Mercantile Exchange	12/5/2002	4.99%

(ii) Eight firms are controlled by voting partners or member interests:

Firm name	Offer date	% vote of IPO class	% vote of O&Ds	Who owns high vote shares?
Premier Inc	9/25/2013	20.00%	0.00%	181 hospitals, health systems and other healthcare organizations
HFF Inc	1/30/2007	38.86%	0.18%	Member interests
Accenture Ltd	7/18/2001	40.05%	0.98%	Voting agreement of partners
Pattern Energy Group Inc	9/26/2013	69.55%	0.66%	"We are using a dual-class share structure to mitigate our Class A shareholders' risk with respect to construction of our South Kent project."
Triple-S Management Corp	12/6/2007	43.95%	1.19%	Managed care owned by doctors and dentists
Taylor Morrison Home Corp	4/9/2013	23.36%	1.38%	Various partnership interests
Rock of Ages Corp	10/21/1997	8.68%	5.96%	Not clear - predecessor companies

(iii) Two firms are controlled by charitable trusts or foundations established by founders:

United Parcel Service, Inc. (UPS), for which the high vote shares are held by foundations and trusts established by the founders and their heirs and descendants.

Readers Digest Association, for which the high vote shares were controlled by charitable foundations set up by the founders.

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