Multi-Class Shares Around the World: The Role of Institutional Investors

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Abstract

This paper examines multi-class share structures around the world. Using a comprehensive sample of publicly listed firms in 45 countries over the period 2001–2016, we find that institutional investors exhibit strong aversion towards multi-class firms, investing less in these firms and discount their valuation. The presence of institutional investors correlates with a higher likelihood of share-class unification. These effects are stronger for local (particularly U.S.) and actively managed investors. Overall, our paper highlights the role of institutional investors in the current debate regarding banning multi-class stocks from global stock indices.

JEL classification: G31, G32

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"We are concerned that the creation of a dual share class may result in an over-concentration of power in the hands of a few shareholders. (…) However, we believe policymakers, not index providers, should set corporate governance standards. (…) Index providers should make every effort to reflect the investable marketplace in the broad benchmark indexes that they produce. (…) allow investors who feel strongly about corporate governance issues to "vote with their feet", while allowing other investors who prefer their broad market index investments to reflect the investable universe to continue to do so."

– Barbara Novick, Vice Chairman, Blackrock
Open Letter Regarding Consultation on the Treatment of
Unequal Voting Structures in the MSCI Equity Indexes, 2018

1. Introduction

The merits of differential voting rights in publicly-listed companies have long been debated. Firms can have two (dual-) or more (multi-) classes of shares with unequal votes that are allocated to different types of investors.[1] Typically the superior voting shares are primarily held by founders and other insiders to achieve control of a firm. This allows insiders to operate without the interference from outside shareholders, who may be less well-informed or more short-term oriented than insiders. On the other hand, separating control from ownership may be harmful by insulating insiders from investor accountability and weakening their incentives to maximize shareholder value. The net benefits of multi-class share structure may depend on firms' life cycle.[2] It may can also depend on the type of investors in a firm's shareholder base. In this paper, we focus on one important type of shareholders – institutional investors, and ask the following questions: What is institutional investors' preference towards multi-class share structures? How do they express their preferences? How do the answers to these questions depend on institutional investors'

[1] To simplify the language used in the paper, we adopt the terminology of "multi-class" firms which encompasses the sub-case of "dual-class" firms, a term more commonly used in U.S. studies where shares tend to have just two classes.
[2] Reviews of the theoretical and empirical literature by Burkart and Lee (2008) and Adams and Ferreira (2008) were not conclusive that differential voting rights were contrary to the interests of ordinary shareholders. More recently, Bebchuk and Kastiel (2017) discuss these "life cycle" dynamics, while Cremers, Lauterbach and Pajuste (2018) and Kim and Michaely (2018) offer empirical evidence that the valuation of multi-class firms decreases with a firm's age.

type?

The U.S. equity market has historically been the paradigm of the "one-share one-vote" model, but this has been changing in the past decades with the trend of technology companies tapping markets while limiting the voting rights of public shareholders.[3] Gompers, Ishii, and Metrick (2010) documented that only 6% of U.S. publicly-listed firms had dual-class share structures in 2002. However, over the last decade, more than 15% of companies that went public had multiple classes of shares (Ritter (2017)). Multi-class shares have featured in high-profile IPOs such as Google (2004), Facebook (2012), Square (2015), and the recent issuance of non-voting shares by Snap (2017). These IPOs have attracted much debate, from both regulators and market participants.

The debate on differential voting rights goes beyond the U.S. equity markets. On the one hand, some observers have blamed U.S. listing standards for causing a "race to the bottom" between stock exchanges around the world. Faced with the loss of listings of local companies such as Baidu and Alibaba, Hong Kong Stock Exchange and Singapore Exchange both changed their rules in 2018 to allow for multi-class listings.[4] On the other hand, other markets have experienced a "race to the top". Historically, Brazil had many dual-class firms. In 2000, Bovespa launched Novo Mercado ("New Market"), a premium segment that imposes single-class share structure, and it has grown to represent about 40% of the market (Matos (2017)). Besides these emerging markets, multi-class shares have also been an important control-enhancing mechanism and the subject of debate in developed markets such as Canada and continental Europe.

As institutional investors hold a larger fraction of shares across the world, these professional money managers have been vocal in their concerns over expropriation by multi-class firms' insiders. For example, the Council of Institutional Investors (CII), an organization representing U.S. pension funds, petitioned NYSE and NASDAQ to ban multi-class firms with public age of 7

[3] The NYSE historically prohibited multi-class structures but, after AMEX allowed voting ratios of up to 10:1 in 1976, it allowed low-vote shares in 1985 and, in 1994, it permitted non-voting shares if these exist prior to going public.
[4] The Economist, "Hong Kong and Singapore succumb to the lure of dual-class shares" (March 1, 2018).

years or more.[5] In 2017, FTSE Russell announced that it would require its future index constituents to have a minimum voting rights of 5% in hands of free-float shareholders, while S&P Dow Jones Indices would no longer add multi-class companies to S&P 1500. In contrast, MSCI decided to retain multi-class companies in its current indices after a ten-month consultation period.[6] With the rise of passive strategies, the listing standards of index providers are an important battleground for investors. The world's largest asset manager, Blackrock, while in favor of "one-share one-vote" (see opening quote), expressed the view that policymakers, not index providers, should set corporate governance standards.[7] The worry is that excluding these firms from market indexes will limit the diversity of the underlying industries and economies whose performance these indexes seek to capture.[8]

In this paper, we take a global perspective and examine multiple-class shares by assembling a comprehensive sample of publicly-listed companies around the world. The data comprises share classes and votes-per-share for publicly-listed firms in 45 developed and emerging markets that are part of the MSCI All Country World Index (ACWI) over the 2001-2016 period.[9] This data shows that firms with multi-class structures represent about 5% of publicly-listed firms and 10% of world market capitalization. For the U.S. market, we confirm recent findings that multi-class firms have grown in the past decade to over 8% of publicly-listed firms and 10% of market capitalization (Bebchuk and Kastiel (2017), CII (2017), Kim and Michaely (2018) and Cremers, Lauterbach and Pajuste (2018)). Outside the U.S., we find considerable variation among developed

[5] WSJ, "BlackRock, Calpers Want Exchanges to Clamp Down on Dual-Class Shares" (October 24, 2018). CII has also petitioned index providers ("CII letter to FTSE/Russell requesting public consultation on index eligibility of dual-class companies", "CII submission to S&P Down Jones consultation on no-vote shares", "CII letter to MSCI on treatment of unequal voting structures").

[6] FTSE Russell "Indexers take action on voting rights" (August 23, 2017), S&PDJI "S&P Dow Jones Indices announces decision on multi-class shares and voting rules" (July 31, 2017), and MSCI "MSCI will retain the MSCI global investable market indexes unchanged and launch a new index series reflecting the preferences of investors on unequal voting structures" (October 30, 2018).

[7] SEC Commissioner Jackson recently examined multi-class firms and found that those without sunset provisions underperformed (Jackson (2018)). However, the SEC is not expected to regulate on this issue.

[8] Blackrock, "The Investment Stewardship Ecosystem" (July 2018).

[9] We focus on the MSCI ACWI markets because these are the ones covered by most institutional investors. It also allowed us to cross-validate the share class classification country-by-country by cross-checking it with a list of firms with unequal voting rights identified by MSCI in its recent investor consultation on multi-class shares.

economies, from representing the majority of public market capitalization in Nordic markets (Sweden, Denmark and Finland), between 10% to 25% for Canada and a handful of continental European countries (Germany, Netherlands, Switzerland and Italy), to 5% or less in the majority of other countries. There is also a large variation in emerging markets, with these structures representing more than 40% of local market capitalization in Brazil and South Korea, but insignificant in a large majority of countries.

We start by examining the valuation effects of multi-class structures. In a preliminary test, we document a negative -1% stock price reaction for the small set of U.S. companies with extreme form of differential voting rights affected by the July 2017 announcement by FTSE Russell 3000 new index exclusion rules. To conduct a more comprehensive examination, we examine our 2001-2016 sample period. On average, we fail to uncover an average difference in the Tobin's Q for U.S. multi-class firms compared with similar single-class firms, in line with recent findings by Cremers, Lauterbach and Pajuste (2018) (hereafter "CLP (2018)") and Kim and Michaely (2018) (hereafter "KM (2018)"). Outside the U.S., however, there is some statistical evidence for a 4% valuation discount. When we conduct the analysis country-by-country, we find that the discount for multi-class firms is concentrated in Brazil, Canada, and Germany (which have been the focus of previous single-country studies) but, interestingly, there is no evidence for Nordic markets. We then test whether the net benefits of multi-class structures vary with a company's life-cycle. For U.S. firms, we find that the Tobin's Q of multi-class firms deteriorates compared to single-class firms with a firm's age since its IPO, which is in line with the recent evidence in CLP (2018) and KM (2018). However, such pattern only holds in non-U.S. markets when we define mature based on firms' age rather than IPO age.

We then turn to the core research question of our paper: how do institutional investors influence the valuation and the evolvement of multi-class firms? For this purpose, we gather institutional ownership data building on Ferreira and Matos (2008) and subsequent papers that have shown the growing importance of institutional investors around the world. We find that a higher presence of institutional investors is associated with a discount in Tobin's Q for multi-class firms compared

with single-class firms, both in the sample of U.S. and non-U.S. firms. This result is mainly driven by local (particularly U.S.) institutional investors and active institutional investors, consistent with them discounting multi-class firms through exit rather than intervening through voice. Such a valuation discount does not result in mispricing as we do not find long-run abnormal returns when we conduct calendar-time portfolio tests. We further find that institutional investors avoid or underweight multi-class firms relative to single-class firms in both U.S. and non-U.S. markets. For non-U.S. firms, this avoidance is more pronounced for foreign investors.

In the last section of the paper, we investigate whether firms respond to institutional investor preferences by undertaking share class unification, the voluntary conversion to a single-class share structure. Our tests suggest that institutional investors are positively associated with a multi-class firm's likelihood of switching to single-class in U.S., but not so in non-U.S. markets. When zooming in on investor types, we find the above association to be particularly strong for domestic and active investors. We further find a positive effect of unifications on Tobin's Q for non-U.S. firms, and an insignificant effect for U.S. firms, consistent with prior cross-sectional findings on the valuation of multi-class firms relative to single-class firms. These findings suggest that there would be more share value creation from adopting one-share-one-vote in non-U.S. countries but the average institutional investor in these countries may not have enough influence.

Overall, we document a "revealed" aversion towards multi-class share structures by institutional investors. Although active as well as local institutional investors are able to achieve their governance preferences through correcting the valuation of multi-class firms and influencing share-class unifications, passive and foreign institutional investors have limited means to influence. Given the rapid growth in passive investments in recent years, our results may explain why there has been strong advocacy efforts by institutional investors with index providers and stock exchanges (which is happening after our sample years). This can be particularly pressing for passive funds (that have to hold all index constituents) and long-term "asset owners" who cannot exit (i.e. "vote with their feet") and whose engagement is through voting or public agitation. Given the collective action problem these minority investors face and the limited influence in any

particular listed firm, it may be more effective if investors influence firms indirectly through stricter index requirements. Faced with the prospect of being kicked out of popular market indices, and not receiving the capital of indexed funds, corporate insiders may then be more willing to adopt one-share-one-vote structures.

Our paper contributes to the literature on differential voting rights by highlighting the increasing role played by institutional investors. To our knowledge, we are the first to examine this topic using a worldwide sample of firms while the majority of previous studies have focused on single country samples. For the U.S., Gompers, Ishii, and Metrick (2010) report that the value of multi-class firms is increasing insiders' cash flow rights and decreasing in their voting rights; Masulis, Wang and Xie (2009) document how excess control rights enabled by dual-class structure allow managers to extract private benefits from the firm. Recent papers have focused on the life-cycle effects. Bebchuk and Kastiel (2017) propose that the debate on dual-class firms should focus on the permissibility of finite-term dual-class structure, namely those that "sunset" after a fixed period of time and subject to approval by shareholders unaffiliated with the controller. CLP (2018) and KM (2018) offer related empirical evidence. These papers focus on insiders' agency problems as well as the life-cycle variation in the value of insider's leadership and information advantage. Instead of the insider perspective, our paper focuses on outside shareholders – namely, the influence of institutional investors and the heterogeneity therein.

Other major countries studied by past literature include Brazil (Gledson de Carvalho and Pennacchi (2012)), Canada (Amoako-Adu and Smith (2001)), Germany (Dittmann and Ulbrich (2007)), Italy (Bigelli, Mehrota and Rau (2011), Croci (2018)), Sweden (Eckbo, Paone and Urheim (2010)), the U.K. (Braggion and Giannetti (2016)), and Korea (Chung and Kim (1999)), as well as geographical regions such as Western Europe (Bennedsen and Nielsen (2010)) and Eastern Europe (Gugler, Ivanova and Zechner (2014)). There are no papers analyzing a global panel of multi-class firms, perhaps because the identification of these firms has only become feasible with more comprehensive financial datasets used in this study. We contribute by providing a global view of multi-class share structure and highlighting that previous findings documented in U.S.

may not hold in other countries when institutional environment and shareholder base change.

2. Data and Summary Statistics

Our data come primarily from the FactSet databases, with certain variables obtained from Datastream. We construct a panel of publicly listed firms in the 2001–2016 period from FactSet. We focus on firms based in the MSCI All Country World Index (ACWI) because these are the ones covered by most institutional investors. Our sample covers 23 developed and 22 emerging markets which encompasses 45 out of the 47 MSCI ACWI countries (we could not get good data coverage for two emerging markets: United Arab Emirates and Pakistan). We exclude utilities (Standard Industrial Classification (SIC) codes 4900–4999) and financial firms (SIC codes 6000–6999) because these industries tend to be regulated. To mitigate the influence of very small firms in the analysis, we restrict the sample to firms with total book assets above U.S.$100 million in 2000 dollars (adjusted using CPI).[10] After requiring non-missing values for variables used later in our multivariate regressions, our final sample consists of 21,255 unique firms across 45 countries, for a total of 185,973 firm-year observations.

2.1. Identifying Multi-Class Shares

Table A.1 in Appendix describes the legal rules regarding share class structures across countries based on OECD Corporate Governance Factbook (OECD (2017)).[11] It shows that issuing a class of shares with limited voting rights is allowed in the company law (or listing rules in Australia) in all jurisdictions other than Indonesia, Israel and Singapore. Issuing a class of shares without voting rights is prohibited in only five jurisdictions (Australia, the Netherlands, Singapore, the Slovak Republic and Sweden), while issuing shares with multiple voting rights is prohibited in more jurisdictions.

[10] KM (2018) also exclude firm-years in their U.S. sample with book assets with less than $10 million in 2000 dollars. We impose a higher threshold of $100 million for our global sample to ensure the quality of the voting and price data in FactSet. The effect of this sample filter is small: it reduces the global market capitalization of the firms at the end of 2016 by only 3%.

[11] OECD (2017) does not provide information on Egypt, Poland, Qatar, Thailand, and Taiwan.

We obtain information on share classes and votes per share from FactSet. We start by downloading all equity-like securities (security types "SHARE", "PREFEQ", PREF" and "DR") in FactSet, including both active and inactive ones. We exclude securities with missing market capitalization and missing votes per share. We then match each security to a firm-year using the security's FactSet entity ID and the security's inception and terminate dates. We define a dummy variable *MULTI_CLASS* that equals one if a firm has multiple classes of shares with differential voting rights, and zero if the firm has a single class of shares, or has multiple classes of shares that have the same voting rights and cash flow rights on a per-share basis.

To validate this measure, we manually cross-check our multi-class classification against the list of MSCI ACWI member firms with unequal voting rights identified by MSCI in its recent consultation report on multi-class shares (MSCI (2018)).[12] The data validation is done country-by-country. Our measure is highly consistent with the MSCI list. The few differences we found were due to MSCI not counting convertible preferred securities. Although this issue affects mostly banks and insurance companies (which we exclude in our analysis), we adjust our classification to adopt the MSCI criteria of excluding convertible preferred and expand the adjustment to companies outside the MSCI ACWI index.[13] Panel B of Table 1 shows the quality of the match for the non-utilities/financials firms in MSCI ACWI index (208 out of the 219 multi-class firms identified by MSCI).

Panel A of Table 1 shows that around 5% of publicly-listed firms have multiple-class structures. These constitute 1,040 unique firms (357 U.S. firms and 683 non-U.S. firms) over the 2001-2016 sample period. For the U.S., the fraction of multi-class firms is 8%, which is higher than the 6% in the Gompers, Ishii, and Metrick (2010) for their 1995-2002 sample but consistent with more

[12] For the U.S. sample, we also manually check and confirm that all the Russell 3,000 firms identified as multi-class by CII (2017) were also identified in our data. We also cross-check our sample against the list of S&P 1500 firms provided by Investor Responsibility Research Center Institute and Institutional Shareholder Services (IRRC and ISS (2012)).

[13] The countries where we made the adjustment were Australia, Belgium, Canada, Hong Kong, Ireland, Israel, Japan, Netherlands, New Zealand, Norway, Singapore, United Kingdom, United States, Greece, Hungary, India, Peru, South Africa, Thailand, and Taiwan.

recent samples in CII (2017), KM (2018) and CLM (2018). This confirms that multi-class structures have become more common in the last two decades with the type of firms changing from old industrial titans (e.g. Ford Motor Company) and media conglomerates (e.g. Comcast Corp) to include top technology companies such as Alphabet and Facebook, as shown in Panel B of Table 1.

Outside the U.S., Panel B of Table 1 shows considerable cross-country variation in the frequency of multi-class firms, despite these structures being allowed in most countries. Figure 1 show that variation both in terms of geographic regions (Panel A) and within developed and emerging economies (Panel B). Among developed economies, multi-class firms represent the majority of the public market capitalization in Nordic markets (Sweden, Denmark and Finland), between 10% to 25% for Canada and a handful of continental European countries (Germany, Netherlands, Switzerland and Italy), only 5% or less in the UK and the majority of other countries, and almost nonexistent in Japan. Interestingly, there is also a large cross-country variation in emerging markets, with these structures representing more than 40% of local market capitalization in Brazil and South Korea, intermediate in Mexico, Russia, and South Africa, but insignificant in many other markets such as India or China. Many flagship companies in these emerging markets have multi-class structures: Petrobras (ranked #2 in Brazil by market cap in 2016), Samsung Electronics (#1 in South Korea), America Movil (#1 in Mexico), Sberbank (#2 in Russia), and Naspers (#1 in South Africa), as shown in Panel B of Table 1.

Figure 2 illustrates the growing market share of U.S. multi-class firms from 6% in 2001 to 11% of total market capitalization in 2016., while there is a downward trend in the fraction of multi-class firms from 12% to 9% of market capitalization outside the U.S. Comparing the panel averages in Panel A with the 2016 levels in Panel B of Table 1, the most dramatic changes occurred in Brazil which is due to the growth in the Novo Mercado one-share-one-vote segment (Matos

(2017)).[14] We also observe a drop in the prevalence of multi-class firms in a few European countries such as Italy.[15]

2.2. Institutional Investors

Institutional investors around the world have generally expressed opposition to multi-class structures with some calling for an end to its use.[16] In the U.S., these include pension fund groups such as the Council of Institutional Investors and the leading shareholder advisory firm Institutional Shareholder Services (ISS).[17] However, as the opening quote from Blackrock shows that there have been more ambivalent in pushing for blocking these securities from major indices since this limits the investable universe for their end investors. In the U.K., the hostility towards non-voting shares by institutional investors was responsible for their gradual disappearance during the 1950s and 1960s (Bragion and Giannetti (2017)). In Brazil, AMEC (the "Association of Capital Market Investors"), which represents foreign and domestic institutional investors, has been very active in the reforms of the "Novo Mercado" (the one-share-one-vote segment of BM&FBOVESPA) (Matos (2017)). In Europe, a report by the European Corporate Governance Institute and ISS (ECGI and ISS (2007)) surveyed big investors found that 80% were opposed and applied a discount to the shares of companies using multi-class structures.[18] In Asia, a survey by the Asian Corporate Governance Association (ACGA) of its large asset manager members showed

[14] For Brazil, we performed a manual data validation of our sample with that of Matos (2017) which uses Economatica, a local financial database.

[15] Adams and Ferreira (2008) report that 24% of the 464 large European firms surveyed by Institutional Investor Services in 2007 employed dual class shares but we could not find a more recent study. For our sample, for the close to 2,000 European firms the average in 2016 is 9% and 14% of market capitalization (indicating it is a more common structure for the large firms).

[16] In response to the 2017-2018 ISS Global Policy Survey with 121 major institutional investors, 43% of respondents indicate that they consider unequal voting rights as never appropriate and 43% that it may be appropriate in the limited circumstances of newly-public companies if they are subject to automatic sunset requirements or periodic re-approval by the holders of the low-vote shares. Only 5% of investor respondents agree with the opinion that companies should be allowed to choose whatever capital structure they see fit.

[17] Corporate Governance Principle 2 of the ISS stewardship code states that "shareholders should be entitled to voting rights in proportion to their economic interest." In the 2017 update of its Americas Proxy Voting Guidelines, ISS indicated its intention to issue negative recommendations for director nominees at companies with a dual-class structure that does not include a "reasonable sunset provision".

[18] The Economist, "European Corporate Governance: Tricks of the Trade" (June 7, 2007).

strong opposition to multi-class shares.[19] However, in other markets there is less investor consensus – for example, the Canadian Coalition for Good Governance (CCGG) could not find unanimity among its pension fund members as to the governance principles that should apply to dual-class share companies.[20]

We collect institutional holdings data from the FactSet/LionShares database.[21] The institutions in the database are professional money managers such as mutual funds, pension funds, bank trusts, and insurance companies. We define total institutional ownership (*IO_TOTAL*) as the sum of the holdings of all institutions in a firm's stock divided by its total market capitalization at the end of each calendar year. Institutional ownership is highest for U.S. companies at 71% compared to a world average of 24%. Even though they are, on average, individually minority shareholders, institutions tend to be the most influential group in terms of their share of trading and investor activism. We also decompose total institutional ownership by the nationality of the institution. In most countries, the holdings of foreign institutions (*IO_FOR*) exceed those of domestic institutions (*IO_DOM*); the exceptions are Canada, Sweden, and the U.S. We further decompose institutional ownership by their level of passive management of their portfolios, namely identifying those whose objective is mostly to track benchmark indices. We construct *IO_PASSIVE*, which is the total ownership owned by the top three largest passive institutional investors around the world: BlackRock, State Street Global Advisors, and Vanguard Group, and define *IO_ACTIVE* as *IO_TOTAL* minus *IO_PASSIVE*.[22] For the U.S. sample, we look at institutions' level of activism in terms of their engagement in proxy fights, shareholder proposals, etc. For this purpose, we define *IO_HIGHTHREAT* as the total ownership by institutional investors identified as having

[19] ACGA, "Survey on Alibaba and Non-Standard Shareholding in Hong Kong" (2014).
[20] CCGG, "Dual Class Share Policy" (2013).
[21] The FactSet/LionShares institutional ownership data are available at the Wharton Research Data Services website: https://wrds-web.wharton.upenn.edu/wrds/ds/factset/holdingsbyfirmmsci/index.cfm?navId=195. See Ferreira and Matos (2008) for more details on these data.
[22] These three fund management companies are known as the "Big Three" as they control a large fraction of exchange-traded fund (ETF) and index fund assets (Pension & Investments, "Growth of ETFs reflects passive shift; 3 largest firms hold 79% of assets" May 28, 2018). Ownership by these top three institutional investors has also been used in Appel, Gormley, and Keim (2018) to proxy for passive ownership.

very high, high, or medium threat by FactSet SharkRepellent, and define *IO_LOWTHREAT* as *IO_TOTAL* minus *IO_HIGHTHREAT*.[23]

2.3. Summary statistics

Table 2 shows the summary statistics for our samples. Table A.2 in the Appendix provides detailed variable definitions. We winsorize variables defined in ratios with potentially unbounded values at the 2.5% tails to mitigate the influence of outliers. Following prior studies, we measure valuation using Tobin's *Q* (*TOBIN_Q*), defined as the ratio of the market value of total assets to the book value of total assets. The univariate tests show a valuation discount for multi-class firms relative to single-class ones for both the U.S. and non-U.S. subsamples, albeit no discount for the pooled sample. Multi-class firms are on average larger, more levered, and more profitable. They also invest less in R&D, grow more slowly, and pay more dividends. In terms of the number of years post IPO, multi-class firms are older in non-U.S. countries, but not so in U.S..

3. Results

3.1. The Announcement Effects of FTSE Russell Index Exclusions

Subsequent to the February 2017 IPO of Snap Inc. stock without any shareholder voting rights, institutional investors expressed concerns. The major index providers (FTSE Russell, S&P Dow Jones Indices and MSCI) opened consultations to get client feedback on eligibility requirements for their indices to exclude, limit or underweight companies with multi-class structures. FTSE Russell's consultation showed that 68% of the respondents agreed that some minimum hurdle should be imposed for the percentage of voting rights in the public hands. Of the respondents who

[23] The FactSet SharkRepellent database tracks the history of each institutions' activist campaigns (voting for stockholder proposals, voting against management proposal, support dissent group in a proxy fight, seeking board representation, enhancing corporate governance or voting against a merger) but is limited only to the U.S. market. This data is used by Boyson, Gantchev and Shivdasani (2017) to measure hedge fund activism.

thought that a minimum voting rights hurdle was sensible, 23% thought the rate should be set at 5%, and 55% thought it should be set at the 25% threshold.[24]

On July 26, 2017, FTSE Russell was the first index provider to announce new inclusion rules that would go into effect at the September index reviews. The new rules would require new constituent companies to have greater than 5% of their voting rights (aggregated across all of its equity securities) in the hands of free-float shareholders. In addition, constituent companies would be given a five-year grandfathering period to allow them to change their capital structure if they so wish before September 2022. The idea was for future IPOs of companies that confer few voting rights to be discouraged (such as Snap Inc. that would not be added in September 2017) but at the same time not having a major impact on existing index constituents such as Facebook and Alphabet that had differential voting right structures.

In Table 3 we conduct an event study analysis of the potential index exclusion effects based on the list published by FTSE Russell 3000 of those U.S. companies that would fail to meet the voting rights hurdles of 5% (Panel A) and 25% (Panel B) minimum free float. We compute abnormal returns to isolate the index exclusion effect from other general market movements. The cumulative abnormal return is the return of firm i in the trading days around the event minus the expected return based on the market model. For each group of companies we compute the cross-sectional average cumulative abnormal returns (CAAR) and standard errors following the Boehmer, Musumeci, and Poulsen (1991) test with Kolari and Pynnonen (2010) adjustment.

Panel A of Table 3 shows that an average -1% abnormal stock price reaction for the multi-class companies that would be affected by the 5% voting threshold. The effect is stronger for those that had higher institutional ownership (according to 2017-Q2 13-F fillings). We do not find evidence of such effect for the firms above the 5% threshold (Panels B and C). This price effect could reflect a sanction on the companies with extreme form of differential voting rights, especially those held by institutional investors that can now sell out of those securities in anticipation of them

[24] FTSE Russell, "Voting Rights Consultation – Next Steps" (July 2017). The 25% threshold is the London Stock Exchange's requirement that votes held by public shareholders must constitute at least 25%

being excluded from the FTSE Russell 3000 benchmark index. Such an exclusion can have a significant adverse cost of capital effect on these multi-class firms. However, the number of affected U.S. firms is very small (24) in these tests so it is hard to generalize from such limited event study evidence.

3.2. Are There Valuation Effects of Multi-Class Share Structures?

We next conduct a more thorough analysis of valuation effect of multi-class share structures using the larger global sample and the 2001–2016 period. We start by replicating the U.S. results by KM (2018) and CLM (2018) and then expand our analysis into non-U.S. markets. To account for the different valuation models across countries, we resort to subsample analysis rather than interactions.

Our main specification is a panel regression where the dependent variable is Tobin's Q (*TOBIN_Q*) which is the workhorse of large-sample valuation studies. The key independent variable is *MULTI_CLASS*, a dummy equal to one if a firm has multiple classes of equities with differential voting rights in a given year. Following KM (2018) and prior literature, we control for total assets, firm's public age (i.e., number of years since IPO), leverage, R&D, tangibility, sales growth, ROA and dividend yield. We further include industry-year fixed effects to account for unobserved industry shocks and country fixed effects to absorb country characteristics which tend to be sticky.[25] All variables are contemporaneous to the dependent variable and are defined in detail in Appendix Table A.2.

Panel A of Table 4 reports the baseline results. Column 1 shows that there is, on average, a negative but statistically insignificant valuation effect of multi-class firms compared with similar single-class firms. We find no statistically significant valuation difference between single-class and multi-class firms in the U.S. (column 2), which is consistent with the findings in CLP (2018) and KM (2018).[26] When extending the analysis to non-U.S. markets in column 3, we find a

[25] We use Fama-French 12-industry classification to define industry dummies. Our results remain similar when controlling for both industry-year fixed effects and country-year fixed effects.
[26] The results are robust when we use a log transformations of Q or -1/Q.

negative valuation effect of multi-class share structures. On average, multi-class firms based outside the U.S. have a 4% lower Tobin's Q than comparable single-class firms, although the difference is only statistically significant at the 10% level. Across all columns, control variables exhibit coefficient signs consistent with KM (2018) and prior studies. These results suggest that the value implication of multi-class share structures can be different in U.S. than in non-U.S. markets, due to potentially different institutions or governance environments. In particular, non-U.S. markets could have lower investor protection standards, potentially magnifying the agency costs of multi-class share structure relative to its benefits. It is also likely that such valuation difference reflects different investor bases and investors' preferences in the U.S. and overseas. We will explore this more in Section 3.2.

To further understand which markets drive the valuation discount in non-U.S. markets, we run the Tobin's Q regressions country by country. To ensure there is power for meaningful statistical inference, we restrict to countries with at least ten unique multi-class firms in the sample. Panel B of Table 4 reports the estimated coefficients on *MULTI_CLASS* and its standard error by country. We find that discount for multi-class firms is statistically and economically meaningful in three countries: Canada, Germany and Brazil, with the respective discount being 11%, 9%, and 27% of the average Tobin's Q in these markets. The larger valuation discount in Brazil may be consistent with a lower level of investor protection. Overall, Panel B of Table 4 highlights that, in most countries, be it developing or emerging, there is no significant valuation effect of multi-class share structure. This is consistent with the trade-off view of multi-class share structure – the costs and benefits co-exist and understanding its net effect requires a more nuanced approach.

Recent studies by CLM (2018) and KM (2018) propose that the relative costs and benefits of multi-class shares may vary over a firms' life cycle. In particular, founder vision and leadership enabled by insider control is more valuable when firms are young, while the agency costs of

concentrated control intensify as firms age. This predicts that the net benefit of multi-class share structure should decline over firms' life cycle.

We examine this heterogeneity in our international setting. Following KM (2018), we define a dummy (*MATURE_IPO*) that is equal to one if a firm's age in public markets (i.e., number of years since IPO) is above median in that country. We then interact the mature dummy with the multi-class indicator (*MULTI_CLASS* x *MATURE_IPO*) to examine the life cycle pattern of the value of multi-class firms relative to that of single-class firms. Alternatively, we also define a dummy *MATURE* based on whether a firms' age since founding is above median in that country. Table 5 reports the results. The samples and specifications follow those in columns 2 and 3 of Panel A of Table 4 except that *YEARS_FROM_IPO* is dropped from control variables given a mature indicator is included. Columns 1 and 3 show that there is a valuation discount for mature multi-class firms in the U.S. consistent with the findings in KM (2018) and CLM (2018). Such pattern only holds in non-U.S. markets when we define mature based on firms' age rather than IPO age (columns 3 and 4). Specifically, the interaction with maturity is insignificant in column 2 and has the opposite sign, while the coefficient of *MULTI_CLASS* is still negative, suggesting that entrenchment of insiders may occur unconditional of the number of years a firm has been public.

We further visualize these results in Appendix Figure 1, where we plot the dynamics of Tobin's Q for average multi- and single-class firms over their public life cycle from age 1 to 25. We do this for the U.S. and non-U.S. samples separately. To construct the graphs, we first estimate a version of the regressions in Columns 1 and 2 of Table 5 in which we replace *MATURE_IPO* and *MULTI_CLASS* × *MATURE_IPO* with $\sum_{k=0}^{25} D(age = k)$ and $\sum_{k=0}^{25} MULTI\_CLASS \times D(age = k)$, where $D(age = k)$ is an indicator equal to one if *YEARS_FROM_IPO* = *k*, and zero otherwise. We plot the constant plus the coefficient on *D(age = k)* for single-class firms (red, dashed line) and the constant plus the coefficient on *D(age = k)* plus the coefficient on *MULTI_CLASS* × *D(age = k)* plus the coefficient on *MULTI_CLASS* for multi-class firms (blue, solid line). For the US sample, we find a faster decline in valuation over the life cycle for multi-class firms than for single-class firms, especially in the first few years a firm is public. This pattern largely mirrors the one

reported in Figure 2 of KM (2018). For the non-US sample, the valuation dynamics of the two groups of firms largely track each other. The life cycle patterns of multi- versus single-class firms' valuation therefore appear to be quite different in the U.S. compared with non-U.S. countries.

3.3. What Are the (Revealed) Preferences of Institutional Investors?

As highlighted in the previous section, the net costs and benefits associated with multi-class share structure are likely to depend on a firm's investor base. As discussed in Section 2.2, institutional investors have been vocal in the recent debate regarding multi-class structures. The dominant view among these investors is that multi-class share structure impedes shareholder democracy and their mandate to create value on behalf of their clients. Such preference could manifest in firms' stock prices through institutional investors' trading (Edmans (2014)), or in firms' institutional ownership through these investors' decisions to invest in the first place. This "exit" channel would predict a lower valuation for multi-class firms when institutional ownership is high, and a lower institutional ownership in such firms. An alternative hypothesis is that institutional investors may express their preference through "voice", directly engaging with the management (Becht, Bolton, and Röell (2005)). Such interventions may mitigate the downside of multi-class structures, therefore predicting a higher valuation of multi-class firms when institutional ownership is high. These interventions, if strong enough, may also prompt multi-class firms to unify their shares into a single class. In this section, we test these hypotheses.

3.3.1. Institutional Investors and the Pricing of Multi-Class Firms.

Table 6, Panel A examines how institutional investors affect the valuation of multi-class firms. Following the specifications in Tables 3 and 4, we interact the multi-class dummy with a firm's total institutional ownership (*MULTI_CLASS* x *IO_TOTAL*), and do this for U.S. and non-U.S. firms separately. To facilitate interpretation across columns, in each regression we standardize *IO_TOTAL* by subtracting its mean and dividing by its standard error within the regression sample. We find that in both U.S. and non-U.S. companies, the presence of institutional investors widens

the valuation discount of multi-class relative to single-class firms. Specifically, a one-standard-deviation increase in institutional ownership decreases the Tobin's Q of multi-class firms relative to single-class ones by 6.4% in the U.S., and decreases that by 4.1% in non-U.S. markets. These results suggest that institutional investors tend to express their preference against multi-class firms through "exit" (voting with their feet), rather than "voice" (engaging with companies), which would predict a positive effect of institutional ownership on multi-class firms' valuation relative to single-class firms.

To further visualize the results in Table 6, Panel A and capture potential non-linear effects, we estimate the average differences in Tobin's *Q* between multi- and single-class firms across quintiles of institutional ownership and plot them out in Figure 3. We do this for the U.S. and non-U.S. samples separately. Specifically, we estimate a version of the regressions in Table 6, Panel A in which we replace *IO_TOTAL*, *MULTI_CLASS* and *MULTI_CLASS* × *IO_TOTAL* with $\sum_{k=1}^{5} D(IO\ quintile = k)$ and $\sum_{k=1}^{5} MULTI_{CLASS} \times D(IO\ quintile = k)$, where $D(IO\ quintile = k)$ is an indicator equal to one if a firm's level of institutional ownership is in the kth quintile of the distribution within the firm's country, and zero otherwise. We plot the coefficient on *MULTI_CLASS* × *D*(*IO quintile* = *k*) and its 95th confidence interval for each quintile. As shown in Figure 3, for the U.S. sample, we find a strong and steady decline in the relative valuation of multi-class firms vis-à-vis single-class firms when moving from the lowest quintile of institutional ownership to the highest. For U.S. firms with the lowest institutional ownership, multi-class firms actually exhibit a valuation premium. For the non-U.S. sample, we find a hump-shaped non-linear effect: the relative valuation of multi-class firms initially increases with institutional ownership, but decreases steadily from the middle quintile onwards. For non-U.S. multi-class firms with the highest institutional ownership, there is a significant negative discount relative to single-class firms. Although on average, institutional ownership is associated with a higher valuation discount for multi-class firms both within and outside the U.S., the effect is weaker and non-monotonic outside the U.S., consistent with findings in Table 6, Panel A. These results could be explained by U.S. institutional investors having a stronger preference against multi-class firms compared with their

non-U.S. counterparts (we examine this further in Table 8). These can also be explained by U.S. institutional investors having a greater ability to express their preferences through exit than their non-U.S. counterparts due to the greater liquidity of the U.S. equity market.

A large part of institutional investments around the world are passive, in which institutional investors track or benchmark against indices rather than actively trading specific firms. To further explore whether institutional investors express their preference against multi-class share structure through "exit" or "voice", we exploit variation in firms' active versus passive ownership. Because passive investors need to maintain portfolio weights that track the composition of index benchmark, they govern only through voice rather than exit (Appel, Gormley, and Keim (2016)); in contrast, active investors govern through both. If the discount we find in Table 6, Panel A is driven by institutional investors' "exit", it should be more evident among firms with more active ownership. Appel, Gormley, and Keim (2016, 2018) show that firms that are index-members have much higher passive ownership, but not active ownership, than firms that are non-index members. We therefore split our samples into firms that are index members versus those that are not. Specifically, we split U.S. firms by S&P 500 membership and non-U.S. firms by MSCI ACWI membership, since these indices are the largest ones tracked by institutional investors in the respective regions. Panel B of Table 6 reports these results. Overall, we find our baseline results to be stronger for non-index member firms than for index member firms. These results further suggest the discount by institutional investors towards multi-class firms is driven by exit rather than voice.

One major alternative explanation of the above results is endogeneity. Institutional investors may select into multi-class firms with unobserved lower growth, leading to our findings. Although we control for growth proxies such as sales growth, R&D, dividend yield, and firm's public age, we note that this explanation fundamentally goes against the life-cycle theory of multi-class shares. If conditional on investing in multi-class firms, institutional investors select into those "better" ones with less agency costs, they should invest in younger and higher growth multi-class firms as suggested by the life-cycle theory of multi-class firms (Bebchuk and Kastiel (2017), Kim and

Michaely (2018), and Cremers, Lauterbach and Pajuste (2018)). Such a selection story therefore would go against our findings.

In Panel C of Table 6, we further explore the differential valuation effect of different types of institutional investors. We decompose total institutional ownership into those by passive and active investors, those by high threat and low threat activist investors, and those by domestic and foreign investors. We then interact these decomposed institutional ownership variables with the multi-class indicator. We find that, consistent with the results in Panel B, passive investors do not have a significant effect on the valuation of multi-class firms relative to single-class ones, while active investors do and the effect is significantly negative. These results hold both in the U.S. (column 1) and non-U.S. samples (column 4). Within the U.S., institutional investors with a high threat of activism significantly discount multi-class firms, while those with a low threat do not (column 2). Finally, in both the U.S. and non-U.S. markets, we find that most of the effect of institutional ownership on the valuation discount of multi-class firms is driven by domestic institutional investors rather than foreign ones (columns 3 and 5).

One natural question is whether institutional investors' discount of multi-class firms is a reflection of mispricing or the correct pricing of such firms' governance problems (Smart, Thirumalai, and Zutter (2008)). We test this by examining stock returns. In Table 7, we form portfolios of multi- and single-class firms and conduct Fama-French-Carhart four factor regressions of monthly value-weighted portfolio returns. We also construct a zero-cost portfolio that longs multi-class firms and shorts single-class firms. We further condition this long-short portfolio on institutional ownership, splitting the stocks into "High IO" and "Low IO" based on median institutional ownership in each country. We do this for the U.S. and non-U.S. samples separately (we only have 23 non-U.S. countries with factors returns available from AQR (Asness, Frazzini and Pedersen (2014)). The samples cover 192 months from 2001 to 2016.

Table 7 reports the estimated alpha and factor loadings for each portfolio. We find that, in the U.S., neither multi-class nor single-class firms have significant alphas during our sample period (columns 1 and 2). The long-short portfolio also generates an insignificant alpha (column 3). This

is consistent with prior findings in Smart, Thirumalai, and Zutter (2008) and Gompers, Ishii, and Metrick (2010). In contrast, in the non-U.S. markets, multi-class firms generate a 0.3% higher monthly excess return than single-class firm (column 8), although the estimate is only marginally significant. This result is driven by a significantly positive alpha generated by multi-class firms and an insignificant alpha associated with single-class firms (columns 6 and 7). Comparing long-short portfolios with high versus low institutional ownership, we fail to find a significant difference in portfolio alphas in either the U.S. or non-U.S. markets (columns 4 to 5 and 9 to 10). In fact, multi-class firms have similar excess returns as single-class firms regardless of institutional ownership. These results suggest that the lower valuation of multi-class firms with high institutional ownership is not a result of mispricing. Instead, institutional investors correctly price in the potential agency costs associated with multi-class share structure.

Combining all the results in Tables 5 and 6, we conclude that institutional investors, in particular domestic and active institutional investors, exhibit a strong aversion towards multi-class firms; they express their preference through trading against these firms ("exit"), thereby dampening the valuation of these firms. Such a valuation discount does not result in mispricing, but a recognition of the fair value of multi-class firms.

3.3.2. Institutional Investors' Holdings of Multi-Class Firms.

Next, we examine how institutional investors' preference is reflected in their decisions to invest in multi-class firms. In Table 8, Panel A, the dependent variable is a firm's total institutional ownership. Columns 1 and 4 include basic controls used in prior tables, while other columns increasingly add more controls that may affect institutional ownership as used in the U.S. (Li, Ortiz-Molina and Zhao (2008)) and in other markets (Ferreira and Matos (2008) and Aggarwal, Erel, Ferreira and Matos (2011)). We find that, for both U.S. and non-U.S. markets, multi-class firms have significantly lower total institutional ownership than their single-class counterparts. This is consistent with the findings in Li, Ortiz-Molina and Zhao (2008) that U.S. multi-class firms

have lower levels of institutional ownership in their study for the 1995-2002 period. This finding again suggests an overall aversion by institutional investors towards multi-class firms.

In Panel B of Table 8, we further decompose institutional ownership into ownership by different types of investors as those examined in Panel C of Table 6. We find that institutional investors invest less into multi-class firms regardless of their level of activeness, and that such results hold both in the U.S. and non-U.S. markets (columns 1-4 and 7- 8). Interestingly, when we decompose total institutional ownership into domestic and foreign ownership, we find domestic institutional investors in non-U.S. countries *do not* shy away from multi-class firms (columns 9 to 12), while all other type investors do. This can be explained by the fact the domestic institutional investors are less independent in non-U.S. countries due to their potential business ties with portfolio companies (Ferreira and Matos (2008) and Aggarwal, Erel, Ferreira and Matos (2011)). These investors therefore continue to hold multi-class firms despite their governance preferences. Foreign institutional investors, on the other hand, are more arms-length and less protected. Absent other means of mitigation (as shown in the previous and the next sections), these investors therefore avoid holding multi-class firms.

3.3.3. Do Firms Respond to Investor Preferences? The Case of Share Class Unification.

Given institutional investors' increasing importance in global capital markets and their dislike for multi-class share structures, firms may respond by adjusting their share structures to potentially increase their stock value; institutional investors may also push for such adjustments through their "voice". We investigate this hypothesis in this section by looking at share class unifications (i.e. voluntary conversions to single-class share structures).

We identify 237 such unification events in our sample by tagging firms that transitioned from multi-class to single-class. On average, 2.6% of multi-class firms unified their shares during our sample period, with the number being slightly higher in the U.S. (2.8%) than outside the U.S. (2.5%). Figure 4 shows the frequency of these events over time. For both U.S. and non-U.S. countries, there is an overall upward trend in unifications from 2001 to 2012, and a decline in more

recent years. The countries with more events are the U.S. (76), followed by Brazil (27), Germany (17), Switzerland (16) and Canada (12). These correspond to the set of countries that have been examined in prior studies of share class unifications. We manually validate the set of Brazilian unifications with those in Gledson De Carvalho and Pennacchi (2012) and Bortolon and Camara Leal (2014). Additionally, we search the official list of firms in Novo Mercado (the one-share-on-vote segment) to determine unifications that were the result of migrations rather than direct IPOs.[27]

Table 9 examines the role of institutional investors in multi-class firms' unification decisions. The sample includes all firms that had a multi-class structure over our sample period. The dependent variable *UNIFICATION* is a dummy that equals one if a firm is multi-class this year and single-class next year. Due to the low frequency of unification events, we employ Probit rather than linear probability model. Columns 1 and 5 examine the effect of total institutional ownership, columns 2 and 6 foreign and domestic institutional ownership, and columns 3, 4, and 7 institutional ownership by activeness. We find that, in the U.S., high institutional ownership predicts subsequent unifications, and this is driven by domestic institutional investors and institutional investors that are active or with a high threat of activism. For non-U.S. markets, although we do not find a significant effect of overall institutional ownership on the likelihood of unification, the effects of domestic institutional investors and active institutional investors are significantly positive. Interestingly, in both the U.S. and non-U.S. markets, passive institutional investors are associated with a lower likelihood of unification.

Next, we study the value implication of share class unification. Table 4 shows that, multi-class firms on average exhibit no discount in the U.S. but a small discount outside the U.S. If this is the case, we would expect these valuation effects to also hold when firms change their share class structures. This is what we exploit next. Table 9 includes three independent variables: lagged

[27] There have been a few studies on unifications in the U.S. (Jordan, Liu and Wu (2016)), Canada (Amoako-Adu and Smith (2001))), Germany (Dittmann and Ulbricht (2008)), and Western Europe (Maury and Pajuste (2011), Lauterbach and Pajuste (2015)), but the time periods of these studies pre-date our sample period or the lists of unifying firms are not provided to allow cross-checking.

multi-class dummy (*MULTI_CLASS*$_{t-1}$) that is equal to one if a firm is multi-class in the previous year, a unification dummy (*UNIFICATION*) that is equal to one if a firms is single-class in a given year and multi-class in the previous year, and a multiplication dummy (*MULTIPLICATION*) indicating a firms being multi-class in a year and single-class in the previous year. The dependent variable is current year Tobin's Q. This specification will tease out the valuation effect of unification, relative to non-unifying multi-class firms, and the effect of multiplication, relative to non-multiplying single-class firms. We find that, consistent with the panel results in Table 4, unification is associated with a value increase in the non-U.S. sample, and insignificant value changes in the U.S.

Lastly, we examine how institutional ownership changes around share-class structure changes. Table 11 reports the results. Similar to Table 9, *MULTI_CLASS*$_{t-1}$ is the lagged multi-class indicator that is equal to one if a firm is multi-class in the previous year, *UNIFICATION* indicates a firm being single-class in a given year and multi-class in the previous year, and *MULTIPLICATION* indicates a firms being multi-class in a year and single-class in the previous year. The dependent variable is current year *IO_TOTAL*. We find institutional investors decrease their holdings by 8 to 9 percentage points when firms transition from single-class to multi-class in the U.S., and by 3 percentage points in non-U.S. markets. The effects are economically large and represent an 11% and a 27% reduction in institutional ownership in these two samples respectively. We also find weak evidence in the U.S. that institutional investors increase their holdings when firms unify their share classes into a single class. Overall, these results are broadly consistent with the cross-sectional findings in Table 8 and suggest that institutional investors respond strongly to changes in share-class structures.

3.4. Interpretation and Implications

As mentioned in the beginning of Section 3, institutional investors have three margins through which they can express their preference against multi-class firms: 1) hold these firms but discount their valuation, 2) avoid holding these firms, 3) hold these firms and push for unification.

Taken together, our results illuminate three main findings: 1) U.S. domestic institutional investors apply all three margins to express their preference against multi-class firms, while non-U.S. domestic investors resort to the first and third margins (influencing pricing and unification), and do not avoid holding these firms; 2) In all countries, foreign institutional investors have limited influence in multi-class firms' pricing or unification, and therefore avoid investing in these firms. 3) Across the world, active institutional investors play a strong role in influencing multi-class firms' pricing and unifications, while passives investors have little influence along either dimensions.

Overall, our paper document on average a "revealed" aversion towards multi-class share structures by institutional investors. Given that passive and foreign institutional investors have limited means to influence and the rapid growth of these investors in recent years, our results may explain the very recent strong advocacy efforts by institutional investors with index providers and stock exchanges (which is occurring after the end of our sample period). This is particularly pressing for passive funds and long-term investors who cannot exit and "vote with their feet". Given these investor heterogeneities and the collective action problem these minority investors face, intervention by index providers and stock exchanges can be beneficial.

4. Conclusion

When summarizing the debate over one-share-one-vote a Financial Times columnist summed it up as follows: "*The advantage of a dual class share structure is that it protects entrepreneurial management from the demands of shareholders. The disadvantage of a dual class share structure is that it protects entrepreneurial management from the demands of shareholders.*"[28] While previous work has examined the entrepreneur's incentives, our paper focus on a firm's shareholder base - in particular, the role of institutional investors around the world. We find that institutional investors discount the valuation of multi-class firms relative to single-class firms. Institutional investors also invest less in multi-class firms and have been effective in pressing domestic multi-

[28] Financial Times, "Enrolment open for an MBA in Murdoch" (July 18, 2011)

class firms to unify their shares. These effects are stronger for local (particularly U.S.) and actively managed investors. Our findings inform the recent discussion about the role of institutional investors in reforming multi-class structures.

Appendix

Table A.1 Rules on Share Class Structure by Country

This table summarizes whether a country's Company Law allows issuing multiple classes of shares. It is based on Table 3.3 of OECD Corporate Governance Factbook 2017.

		Limited voting rights	No voting shares	Multiple voting rights
MSCI Developed Countries:	Australia	Allowed (listing rules)	Not allowed	Not allowed
	Austria	Allowed	Allowed	
	Belgium	Allowed	Allowed (up to 1/3 of total shares)	
	Canada	Allowed		
	Denmark	Allowed	Allowed	Allowed
	Finland	Allowed	Allowed	Allowed
	France	Allowed (up to 1/2 of total shares)	Allowed (up to 1/4 of total shares)	Allowed (Loi Florange, 2x voting on shares with >2 years holding)
	Germany	Allowed	Allowed (up to 1/2 of total shares; must have preferential rights to dividends)	Not allowed
	Hong Kong	Allowed (but listing rules impose "one-share-one-vote")	Allowed	Not allowed
	Ireland	Allowed	Allowed	Allowed
	Israel	Not allowed (preference shares allowed under certain conditions)		Not allowed
	Italy	Allowed (up to 1/2 of total shares)	Allowed (up to 1/2 of total shares)	Allowed (loyalty shares, 2x voting on shares with >2 years holding)
	Japan	Allowed (up to 1/2 of total shares)	Allowed (up to 1/2 of total shares)	Not allowed
	Netherlands	Allowed	Not allowed	
	New Zealand	Allowed	Allowed	Allowed
	Norway	Allowed (code prescribes "one-share one-vote")		Allowed
	Portugal	Allowed	Allowed (up to 1/2 of total shares)	Not allowed
	Singapore	Not allowed (listed companies)	Not allowed (listed companies)	Not allowed (listed companies)
	Spain	Allowed	Allowed (up to 1/2 of total shares; must have preferential rights to dividends)	Not allowed
	Sweden	Allowed	Not allowed	Allowed (up to 1/10 of total shares)
	Switzerland	Allowed	Allowed (must have preferential rights to dividends)	Allowed
	United Kingdom	Allowed	Allowed	Allowed
	United States	Allowed	Allowed	Allowed

Table A.1 (continued)

		Limited voting rights	No voting shares	Multiple voting rights
MSCI Emerging Countries:	Brazil	Allowed	Allowed (up to 1/2 of total shares; must have preferential rights to dividends)	Not allowed
	Chile	Allowed	Allowed	
	China	Allowed	Allowed (must have preferential rights to dividends)	Not allowed
	Colombia)	Allowed	Allowed (up to 1/2 of total shares; must have preferential rights to dividends)	Not allowed
	Czech Republic	Allowed	Allowed	Allowed
	Egypt	… Info N/A …		
	Greece	Allowed	Allowed	
	Hungary	Allowed	Allowed	Allowed
	India	Not allowed (listing rules)	Not allowed (listing rules)	Not allowed (listing rules)
	Indonesia	Not allowed	Allowed	Not allowed
	Malaysia	… Info N/A …		
	Mexico	Allowed (up to 1/4 of total shares)	Allowed (up to 1/4 of total shares)	Not allowed
	Peru	… Info N/A …		
	Philippines	… Info N/A …		
	Poland	Allowed	Allowed	
	Qatar	… Info N/A …		
	Russia	Allowed	Allowed (up to 1/4 of total shares; must have preferential rights to dividends)	
	South Africa	Allowed	Allowed	Allowed
	South Korea	Allowed (up to 1/4 of total shares)	Allowed (up to 1/4 of total shares; must have preferential rights to dividends)	Not allowed
	Taiwan	… Info N/A …		
	Thailand	… Info N/A …		
	Turkey	Allowed (need authorization	Allowed	Allowed

Table A.2 Variable definitions

Variable	Definition
MULTI_CLASS	Dummy variable that equals one if a firms has multiple classes of shares with differential voting rights. This measure is constructed based on all equity securities a firm has in FactSet and associated information on votes per share.
TOBIN_Q	Total assets (FactSet item FF_ASSETS) plus market value of equity (Factstet item FF_MKT_VAL) minus book value of equity (Factstet item FF_COM_EQ) divided by total assets.
IO_TOTAL	Holdings by institutional investors as a fraction of market capitalization (FactSet Ownership).
IO_FOR	Holdings by foreign institutional investors (institutions located in a different country from where the stock is listed) as a fraction of market capitalization (FactSet Ownership).
IO_DOM	Holdings by domestic institutional investors as a fraction of market capitalization (FactSet Ownership).
IO_PASSIVE	Holdings by the top three largest passive institutional investors around the world: BlackRock, State Street, and Vanguard (FactSet Ownership).
IO_ACTIVE	Holdings by the non-top three largest passive institutional investors (FactSet Ownership).
IO_HIGHTHREAT	Holdings by institutional investors that are classified as very high, high, or medium activist threat by SharkRepellent (FactSet).
IO_LOWTHREAT	Holdings by institutional investors that are classified as low activist threat by SharkRepellent (FactSet).
LN(TOTAL_ASSETS)	Total assets in millions of U.S. dollars (FactSet item FF_ASSETS converted at the currency exchange rate to USD).
YEARS_FROM_IPO	The number of years since a firms went IPO (based on FacetSet item INCEPTION_DATE)
LEVERAGE	Total debt (FactSet item FF_DEBT) divided by total assets (FactSet item FF_ASSETS).
R&D	Research and development expenditures (FactSet item FF_RD_EXP) divided by total assets (FactSet item FF_ASSETS).
TANGIBILITY	Net property, plant, and equipment (FactSet item FF_PPE_NET) divided by total assets (FactSet item FF_ASSETS)
SALES_GROWTH	One-year growth in net sales (based on FactSet item FF_SALES_GR)
ROA	Return on assets (FactSet item FF_ROA)
DIVIDEND_YIELD	Dividend per share divided by stock price, multiplied by 100 (FactSet item FF_DIV_YLD)
INSIDER_OWNERSHIP	Number of shares held by insiders (FactSet item OS_SEC_SHS_HLD_INSID) divided by the number of shares outstanding (FactSet item FF_COM_SHS_OUT_SECS)
STOCK_RETURN	Annual geometric rate of stock return (Datastream item RI)
TUNRNOVER	Annual share volume (Datastream item VO) divided by adjusted shares outstanding (Datastream item AFNOSH)
ANALYSTS	Number of analysts covering a firm as reported by FactSet (FactSet item FE_ESTIMATES)
MSCI	Dummy that equals one if a firm is a member of the MSCI All Country World Index, and zero otherwise
FXSALES	International sales as a fraction of total sales (FactSet item FF_FOR_SALES_PCT).
UNIFICATION	Dummy that equals one if a firms is multi-class this year and single-class the following year.
MULTIPLICATION	Dummy that equals one if a firms is single-class this year and multi-class the following year.

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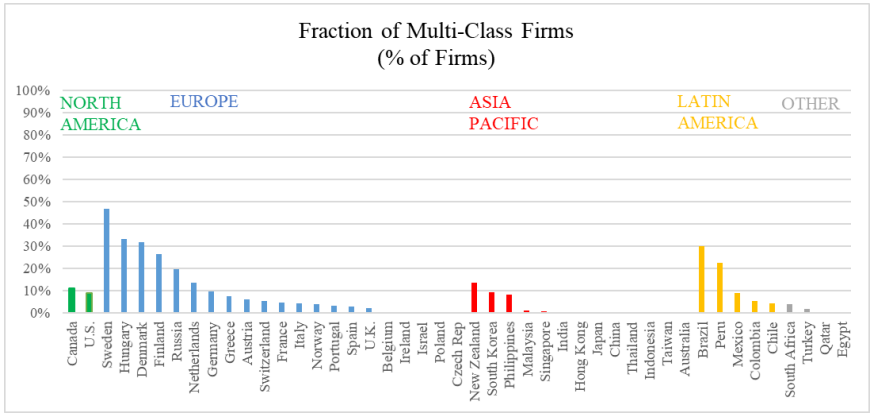
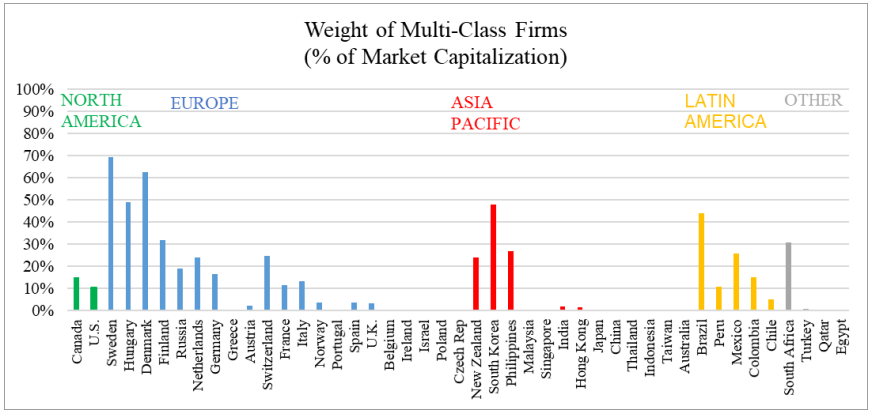
Figure 1. Cross-Country Variation in the Prevalence of Multi-Class Firms

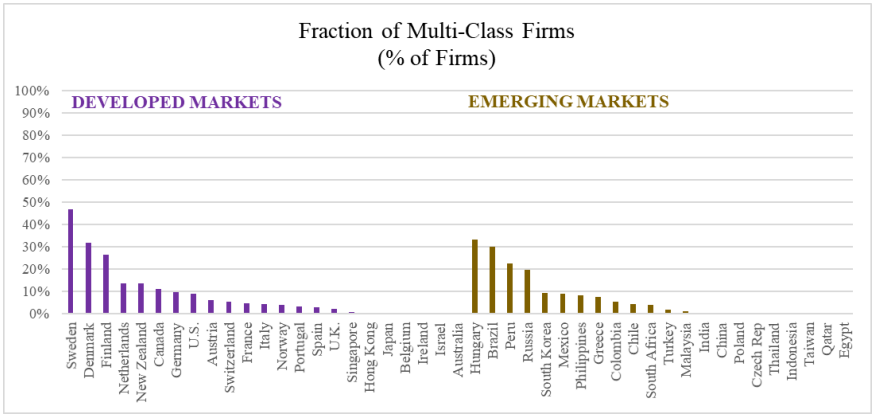
This figure shows the prevalence of multi-class firms as a fraction of listed firms and as a percentage of total market capitalization by country at the end of 2016. This is based on the statistics in Panel B of Table 1. The sample covers publicly-listed firms from MSCI ACWI countries with total assets above $100 million and excludes financial and utility companies. Countries are sorted by the fraction of multi-class firms in each of the geographical regions (Panel A) or market segment (Panel B).

Panel A: By Geographical Regions





Panel B: By Market Development



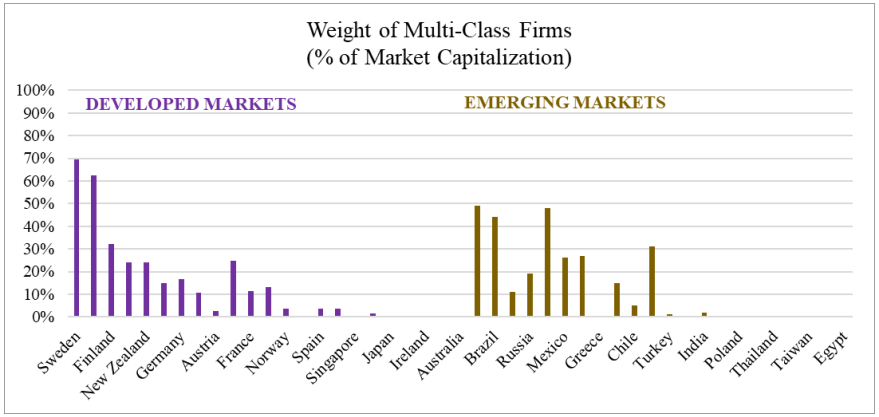
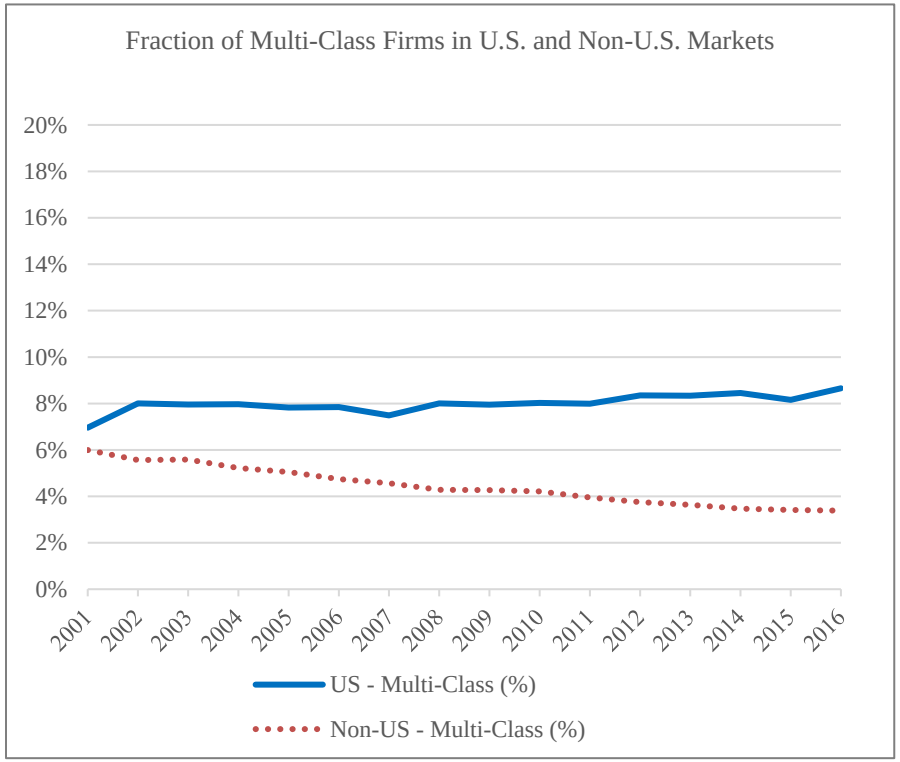


Figure 2. Time Series Variation in the Prevalence of Multi-Class Firms

This figure shows the prevalence of multi-class firms as a fraction of listed firms and as a percentage of total market capitalization for firms listed in U.S. markets (solid lines) and non-U.S. markets (dotted lines) from 2001 to 2016. The sample covers publicly-listed firms from MSCI ACWI countries with total assets above $100 million and excludes financial and utility companies.



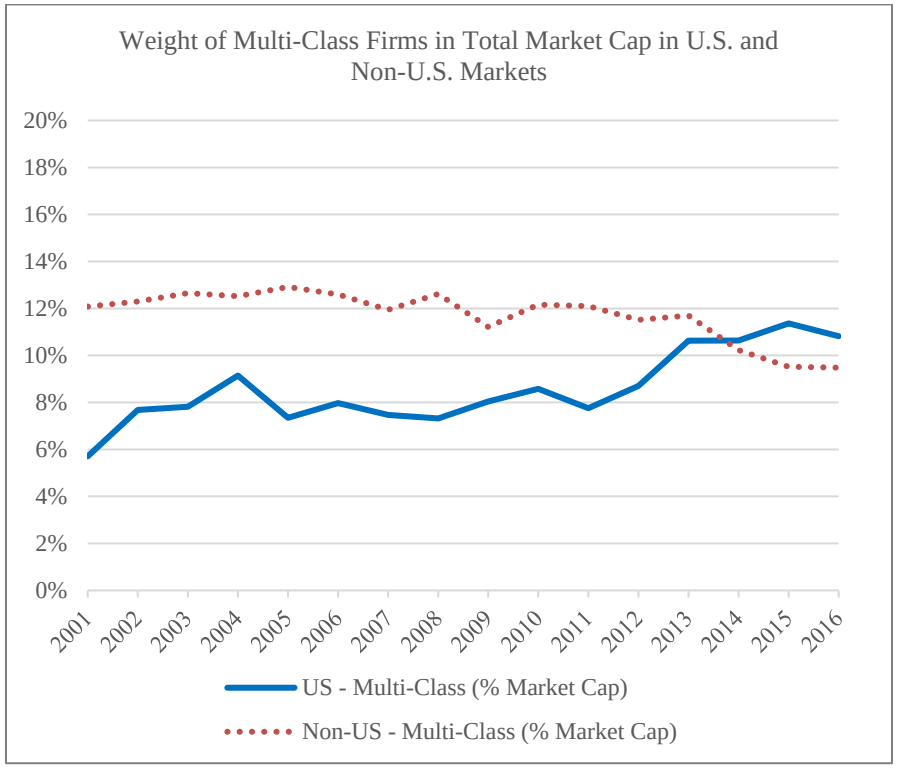


Figure 3. Estimated Difference in Tobin's *Q* for Multi- and Single-Class Firms across Institutional Ownership Quintiles

This figure plots the estimated difference in Tobin's Q between multi- and single-class firms across institutional ownership quintiles. We do this for U.S. and non-U.S. samples separately. To construct the graph, we first estimate a version of the regressions in Table 6 in which we replace *IO_TOTAL* and *MULTI_CLASS* × *IO_TOTAL* with $\sum_{k=1}^{5} D(IO\ quintile = k)$ and $\sum_{k=1}^{5} MULTI\_CLASS \times D(IO\ quintile = k)$, where $D(IO\ quintile = k)$ is an indicator equal to one if a firm's level of institutional ownership is in the kth quintile of the distribution within the firm's country, and zero otherwise. We plot the coefficient on *MULTI_CLASS* × *D*(*IO quintile* = *k*) and the associated 95th confidence interval for each quintile.

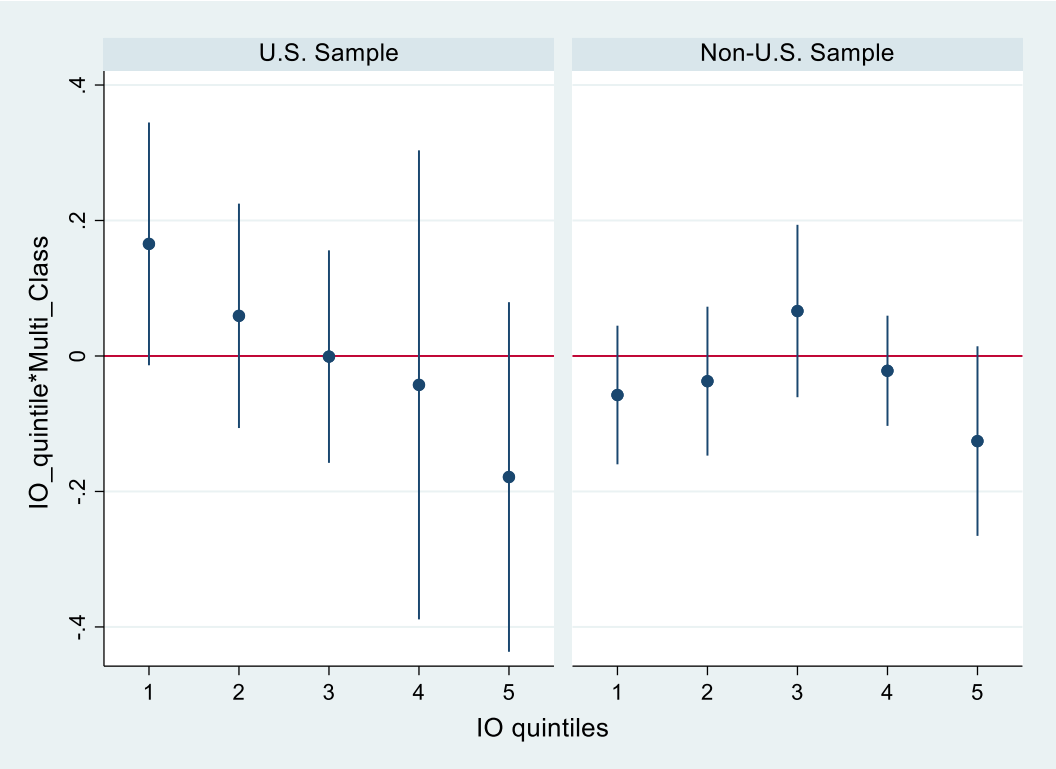
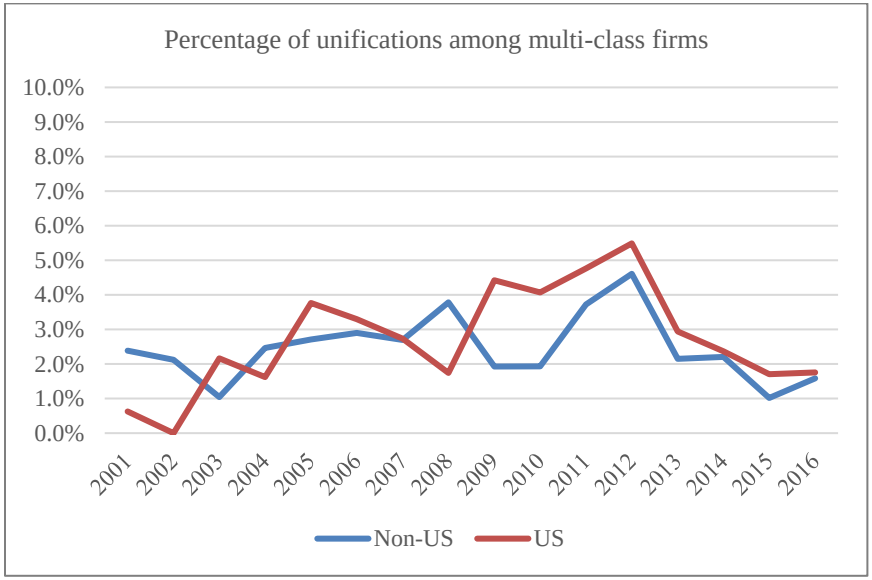


Figure 4. Share-Class Unification Events

This figure shows the fraction and number of share-class unification events (a firm switching from multi-class to single-class structure) among multi-class firms per year for U.S. and non-U.S. over the 2001-2016 period.



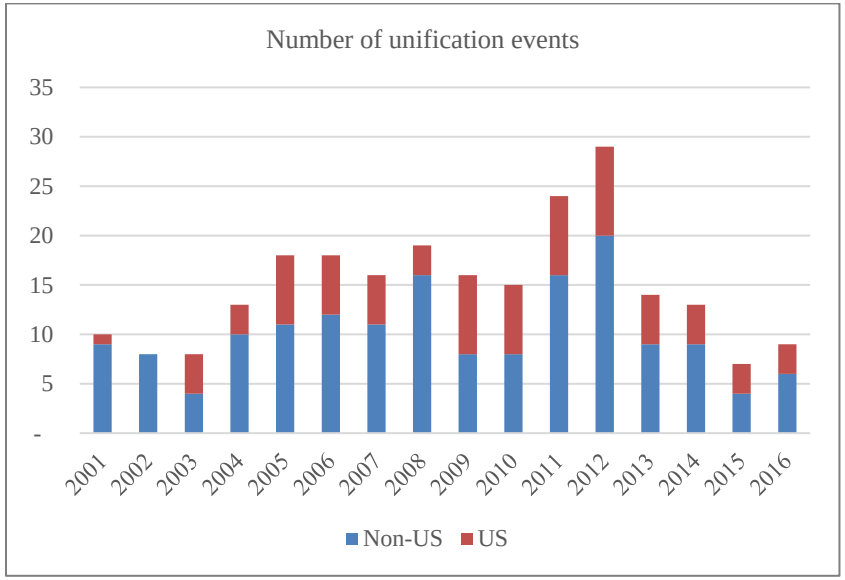


Table 1. Sample of Multi-Class Firms Around the World

This table reports the frequency of multi-class firms by country. The sample covers publicly-listed firms from MSCI ACWI countries from 2001 to 2016 with total assets above $100 million and excludes financial and utility companies. Panel A presents the number of firm-year observations and the number of unique firms by country. Panel B details the sample at the end of 2016 and our data validation against the MSCI list of multi-class firms in the MSCI ACWI index.

Panel A. Regression Sample - Frequency of Firms with Multi-class Share Structures per Country

	Country	Regression Sample - Firm-Years			Regression Sample - Unique Firms		
		Single Class (N)	Multi-Class (N)	(%)	Single Class (N)	Multi-Class (N)	(%)
MSCI Developed Countries:	Australia	4,031	0	0%	623	0	0%
	Austria	539	51	8.6%	63	6	8.7%
	Belgium	863	45	5.0%	94	10	9.6%
	Canada	5,655	674	10.6%	875	69	7.3%
	Denmark	522	249	32.3%	59	21	26.3%
	Finland	710	254	26.3%	81	24	22.9%
	France	1,127	50	4.2%	102	4	3.8%
	Germany	3,644	461	11.2%	451	48	9.6%
	Hong Kong	5,285	31	0.6%	620	6	1.0%
	Ireland	629	12	1.9%	83	2	2.4%
	Israel	1,491	0	0%	201	0	0%
	Italy	1,867	216	10.4%	213	22	9.4%
	Japan	35,731	31	0.1%	3,034	7	0.2%
	Netherlands	1,254	112	8.2%	148	9	5.7%
	New Zealand	550	0	0%	73	0	0%
	Norway	1,169	41	3.4%	169	5	2.9%
	Portugal	456	29	6.0%	42	5	10.6%
	Singapore	2,401	1	0.0%	314	1	0.3%
	Spain	1,284	12	0.9%	129	3	2.3%
	Sweden	913	773	45.8%	146	66	31.1%
	Switzerland	1,950	185	8.7%	190	21	10.0%
	United Kingdom	7,080	124	1.7%	884	20	2.2%
	United States	32,247	2,798	8.0%	4,067	357	8.1%
	Total - Developed	111,398	6,149	5.2%	12,661	706	5.3%
MSCI Emerging Countries:	Brazil	1,188	1,145	49.1%	165	122	42.5%
	Chile	1,062	45	4.1%	93	6	6.1%
	China	22,061	49	0.2%	2,637	11	0.4%
	Colombia	212	16	7.0%	27	1	3.6%
	Czech Republic	104	0	0%	18	0	0%
	Egypt	480	0	0%	48	0	0%
	Greece	756	5	0.7%	67	4	5.6%
	Hungary	101	14	12.2%	10	1	9.1%
	India	7,838	39	0.5%	916	9	1.0%
	Indonesia	1,943	0	0%	226	0	0%
	Malaysia	3,171	17	0.5%	355	2	0.6%
	Mexico	883	139	13.6%	77	15	16.3%
	Peru	309	107	25.7%	32	9	22.0%
	Philippines	586	55	8.6%	69	5	6.8%
	Poland	892	0	0%	110	0	0%
	Qatar	102	0	0%	9	0	0%
	Russia	1,193	312	20.7%	182	47	20.5%
	South Africa	1,585	33	2.0%	195	4	2.0%
	South Korea	8,280	1,130	12.0%	995	94	8.6%
	Taiwan	8,983	0	0%	935	0	0%
	Thailand	1,996	0	0%	240	0	0%
	Turkey	1,562	33	2.1%	148	4	2.6%
	Total - Emerging	65,287	3,139	4.6%	7,554	334	4.2%
Total		176,685	9,288	5.0%	20,215	1,040	4.9%

Table 1 (continued)

Panel B: 2016 Sample - Data Validation with MSCI Sample

	Country	Regression Sample - Firms in 2016				MSCI Firms in Regression Sample - 2016							
		Single Class (N)	Multi-Class (N)	(%)	% Market Cap	Single Class (N)	Multi-Class (N)	(%)	Multi-Class in MSCI List (N)	Top 3 MSCI Firms - Ranked by Market Cap [(*): if Multi-Class} #1:	#2:	#3:	Non-Top 3 MSCI Firms - Largest Multi-Class
MSCI Developed Countries:	Australia	267	0	0%	0%	69	0	0%	0	CommBank	Rio Tinto	BHP Billiton	
	Austria	32	2	5.9%	2.4%	5	0	0%	0	Erste Group	OMV	voestalpine	
	Belgium	59	0	0%	0%	10	0	0%	0	AB InBev	KBC Groupe	GBL	
	Canada	359	44	10.9%	15.0%	78	16	17.0%	17	RBC	TD Bank	Scotiabank	#15: Alim Couche-Tard (*)
	Denmark	30	14	31.8%	62.5%	11	5	31.3%	5	Novo Nordisk (*)	Maersk (*)	Danske Bank	#5: Coloplast (*)
	Finland	45	16	26.2%	32.0%	8	4	33.3%	4	Nokia	Sampo (*)	Kone (*)	#8: Stora Enso (*)
	France	62	3	4.6%	11.5%	29	2	6.5%	0	L'Oreal	BNP Paribas	Air Liquide	#9: Renault (*)
	Germany	207	22	9.6%	16.5%	45	9	16.7%	10	SAP	Siemens	Bayer	#8: Volkswagen (*)
	Hong Kong	445	1	0.2%	1.6%	82	1	1.2%	1	China Mobile	AIA Group	CNOOC	#25: Swire Pacific (*)
	Ireland	40	0	0%	0%	21	0	0%	0	Medtronic	Accenture	Allergan	
	Israel	127	0	0%	0%	13	0	0%	0	Teva Pharmaceutical	Check Point Soft Tech	Mobileye	
	Italy	111	5	4.3%	13.3%	15	2	11.8%	4	Eni	Enel	Intesa Sanpaolo (*)	#7: Telecom Italia (*)
	Japan	2,119	2	0.1%	0.1%	318	1	0.3%	1	Toyota Motor	NTT DoCoMo	NTT	#318: Cyberdyne (*)
	Netherlands	58	9	13.4%	24.1%	20	6	23.1%	3	Royal Dutch Shell	Unilever NV	ING Groep	#10: Ahold Delhaize (*)
	New Zealand	45	0	0%	0%	7	0	0%	0	Auckland Intl Airport	Meridian Energy	Spark NZ	
	Norway	76	3	3.8%	3.8%	8	1	11.1%	1	Statoil	DNB	Telenor	#10: Schibsted (*)
	Portugal	30	1	3.2%	0.2%	3	0	0%	0	Galp Energia	EDP	Jeronimo Martins	
	Singapore	167	1	0.6%	0.0%	28	0	0%	1	Broadcom	Singtel	DBS Group	
	Spain	72	2	2.7%	3.8%	24	1	4.0%	0	Inditex	Banco Santander	Telefonica	#12: Grifols (*)
	Sweden	70	61	46.6%	69.5%	10	20	66.7%	20	H & M (*)	Nordea Bank	Atlas Copco (*)	#4: Investor AB (*)
	Switzerland	125	7	5.3%	24.8%	36	7	16.3%	7	Nestle	Roche (*)	Novartis	#8: Richemont (*)
	United Kingdom	423	9	2.1%	3.5%	108	4	3.6%	2	HSBC Holdings	BP	Unilever PLC	#22: Liberty Global (*)
	United States	1,847	175	8.7%	10.6%	540	42	7.2%	47	Apple	Alphabet (*)	Berkshire Hathaway (*)	#7: Facebook (*)
	Total – Developed	6,816	377	5.2%	10.6%	1,488	121	7.5%	123				
MSCI Emerging Countries:	Brazil	100	43	30.1%	44%	34	19	35.8%	19	Ambev	Petrobras (*)	Itau Unibanco (*)	#4: Bradesco (*)
	Chile	69	3	4.2%	5%	17	2	10.5%	1	Falabella	Empresas Copec	Banco de Chile	#18: Embotelladora Andina (*)
	China	2,408	3	0.1%	0%	92	1	1.1%	8	Tencent	ICBC H	CCB H	
	Colombia	18	1	5.3%	15%	3	5	62.5%	5	Ecopetrol	Grupo Aval (*)	Bancolombia	#4: Grupo Sura (*)
	Czech Republic	4	0	0%	0%	4	0	0%	0	CEZ	Komercni banka	O2 Czech Rep	
	Egypt	38	0	0%	0%	3	0	0%	0	CIB	Global Telecom Hold	QNB ALAHLI	
	Greece	38	3	7.3%		9	0	0%	0	OTE	Alpha Bank	OPAP	
	Hungary	2	1	33.3%	49%	2	1	33.3%	0	OTP Bank	MOL Hungary (*)	Gedeon Richter	
	India	657	2	0.3%	2%	73	1	1.4%	1	Tata Consultancy	Reliance Industries	ITC	#16: Tata Motors (*)
	Indonesia	195	0	0%	0%	31	0	0%	1	Sampoerna	Telekomunikasi Indonesia	Bank Central Asia	
	Malaysia	220	2	0.9%	0%	43	0	0%	0	Maybank	Tenaga Nasional	Public Bank	
	Mexico	62	6	8.8%	26%	22	3	12.0%	5	America Movil (*)	Wal-Mart de Mexico	Grupo Mexico	#5: Coca-Cola Femsa (*)
	Peru	24	7	22.6%	11%	1	1	50.0%	0	Credicorp	Buenaventura (*)		
	Philippines	55	5	8.3%	27%	13	10	43.5%	10	SM Prime Holdings	SM Investments	JG Summit Hold (*)	#4: Ayala Land
	Poland	68	0	0%	0%	19	0	0%	3	PKN ORLEN	PKO Bank Polski	Bank Pekao	
	Qatar	9	0	0%	0%	11	0	0%	0	QNB	Industries Qatar	Ooredoo	
	Russia	74	18	19.6%	19%	15	5	25.0%	5	Rosneft Oil	Sberbank (*)	Gazprom	#8: Transneft (*)
	South Africa	97	4	4.0%	31%	45	4	8.2%	4	Naspers (*)	Sasol	FirstRand	#10: Remgro (*)
	South Korea	765	78	9.3%	48%	68	33	32.7%	32	Samsung Electronics (*)	Hyundai Motor (*)	SK hynix	#7: Amorepacific (*)
	Taiwan	678	0	0%	0%	87	0	0%	0	TSMC	Hon Hai Precision Ind	Formosa Petrochem	
	Thailand	186	0	0%	0%	34	0	0%	0	Krung Thai Bank	PTT	ThaiBev	
	Turkey	113	2	1.7%	1%	22	2	8.3%	2	Koc Holding (*)	Garanti Bank	Akbank	#4: Turkiye Is Bankasi (*)
	Total - Emerging	5,880	178	2.9%	8.3%	648	87	11.8%	96				
Total		12,696	555	4.2%	10.0%	2,136	208	8.9%	219				

Table 2. Summary Statistics

This table reports univariate analysis for the full, U.S. and non-U.S. sample. The sample covers publicly-listed firms from MSCI ACWI countries from 2001 to 2016 with total assets above $100 million and excludes financial and utility companies. Variable definitions are provided in Table A.2 in the Appendix. Variables defined in terms of ratios are winsorized at the top and bottom 2.5%. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	Full sample				U.S. sample				Non-U.S. sample			
	Single-Class mean	Multi-Class mean	Difference	t-stat	Single-Class mean	Multi-Class mean	Difference	t-stat	Single-Class mean	Multi-Class mean	Difference	t-stat
TOBIN_Q	1.56	1.54	0.02	(1.50)	1.92	1.83	0.09***	(3.54)	1.48	1.41	0.06***	(5.01)
IO_TOTAL	0.24	0.31	-0.07***	(-23.38)	0.72	0.59	0.13***	(25.40)	0.11	0.18	-0.06***	(-27.27)
IO_PASSIVE	0.02	0.03	-0.01***	(-11.24)	0.09	0.07	0.02***	(20.60)	0.01	0.01	-0.00***	(-12.10)
IO_ACTIVE	0.21	0.28	-0.07***	(-24.48)	0.63	0.52	0.11***	(24.01)	0.11	0.17	-0.06***	(-27.34)
IO_HIGHTHREAT	0.01	0.01	-0.00**	(-2.69)	0.04	0.03	0.01***	(11.24)				
IO_LOWTHREAT	0.23	0.30	-0.07***	(-24.12)	0.68	0.57	0.12***	(24.09)				
IO_FOR	0.06	0.08	-0.02***	(-14.78)	0.04	0.03	0.01***	(9.36)	0.07	0.10	-0.03***	(-20.72)
IO_DOM	0.18	0.23	-0.06***	(-18.00)	0.68	0.56	0.12***	(25.31)	0.05	0.08	-0.03***	(-19.68)
LN(TOTAL_ASSETS)	6.54	7.31	-0.77***	(-44.69)	6.96	7.13	-0.18***	(-6.13)	6.45	7.39	-0.94***	(-44.03)
YEARS_FROM_IPO	13.80	15.59	-1.80***	(-19.46)	16.81	16.10	0.71**	(3.17)	13.12	15.37	-2.25***	(-24.54)
AGE	43.38	56.96	-13.57***	(-29.38)	41.29	48.03	-6.75***	(-8.41)	43.84	60.86	-17.02***	(-30.46)
LEVERAGE	0.24	0.26	-0.02***	(-10.06)	0.24	0.27	-0.03***	(-5.92)	0.24	0.26	-0.02***	(-7.97)
R&D	0.03	0.02	0.01***	(9.57)	0.08	0.04	0.05***	(14.34)	0.02	0.01	0.01***	(9.60)
TANGIBILITY	0.32	0.31	0.01***	(3.33)	0.27	0.25	0.02***	(5.37)	0.33	0.34	-0.01**	(-3.24)
SALES_GROWTH	11.62	9.17	2.45***	(8.45)	11.80	8.95	2.85***	(5.23)	11.58	9.26	2.32***	(6.73)
ROA	6.25	7.74	-1.49***	(-15.38)	6.97	8.16	-1.19***	(-5.90)	6.09	7.56	-1.47***	(-13.32)
DIVIDEND_YIELD	1.76	1.96	-0.20***	(-8.22)	0.84	1.06	-0.22***	(-6.04)	1.96	2.34	-0.38***	(-12.95)
INSIDER_OWNERSHIP	0.38	0.37	0.01***	(3.99)	0.16	0.29	-0.12***	(-27.16)	0.44	0.41	0.03***	(7.88)
STOCK_RETURN	0.17	0.20	-0.03***	(-4.25)	0.15	0.15	0.00	(0.31)	0.18	0.22	-0.04***	(-5.73)
TUNRNOVER	2.61	2.18	0.42***	(11.13)	3.29	2.97	0.33***	(4.92)	2.45	1.85	0.60***	(13.34)
ANALYSTS	4.54	7.55	-3.01***	(-31.35)	8.22	7.58	0.64***	(3.97)	3.70	7.54	-3.84***	(-32.28)
MSCI	0.14	0.26	-0.12***	(-26.42)	0.18	0.15	0.03***	(3.92)	0.13	0.30	-0.18***	(-30.70)
FXSALES	26.39	31.42	-5.03***	(-13.85)	26.26	19.55	6.71***	(13.05)	26.42	36.55	-10.13***	(-22.31)
Observations	176,685	9,288	185,973		32,247	2,798	35,045		144,438	6,490	150,928	

Table 3. Event Study Evidence of FTSE Russell 300 Index Exclusion Effects

This table presents results of the event study of the dates surrounding the FTSE Russell 3000 announcement on July 26, 2017 regarding the minimum voting rights threshold for index eligibility. Panel A examines the Russell 3000 constituent stocks with less than 5% of their voting rights (aggregated across all of its equity securities) in the hands of free-float shareholders as defined by FTSE Russell. Panel B examines the Russell 3000 constituent stocks with between 5% and 25% of their voting rights in the hands of free-float shareholders. Panel C examines all other multi-class Russell 3000 firms with more than 25% of their voting rights in the hands of free-float shareholders. It shows the cross-sectional average cumulative abnormal returns (CAAR) in the trading days around the event using the market model. Standard errors are calculated following the Boehmer, Musumeci, and Poulsen (1991) test with Kolari and Pynnonen (2010) adjustment. P-values are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

				Market model		
Public voting share	Multi/Single	IO	# of firms	CAAR[-1,1]	CAAR[0,1]	CAAR[0,2]
Panel A:						
0-5%	Multi-class		24	-0.75%	-1.03%***	-1.24%
				(0.145)	(0.005)	(0.104)
		High IO	12	-1.18%	-1.37%***	-2.15%**
				(0.232)	(0.008)	(0.024)
		Low IO	12	-0.31%	-0.69%*	-0.33%
				(0.293)	(0.065)	(0.703)
Panel B:						
5-25%	Multi-class		70	-0.32%	-0.69%	-1.11%
				(0.954)	(0.394)	(0.306)
		High IO	35	-0.45%	-0.45%	-1.24%
				(0.832)	(0.670)	(0.388)
		Low IO	35	-0.18%	-0.94%	-0.97%
				(0.883)	(0.275)	(0.320)
	Single-class		44	0.39%	-0.27%	-0.75%
				(0.841)	(0.454)	(0.330)
		High IO	22	0.55%	-0.21%	-1.09%
				(0.982)	(0.340)	(0.279)
		Low IO	22	0.23%	-0.32%	-0.42%
				(0.764)	(0.702)	(0.660)
Panel C:						
>25%	Multi-class		142	0.29%	-0.32%	-0.22%
				(0.705)	(0.791)	(0.943)
		High IO	71	0.14%	-0.69%	-0.82%
				(0.645)	(0.757)	(0.772)
		Low IO	71	0.47%	0.08%	0.43%
				(0.827)	(0.868)	(0.701)

Table 4. Valuation Effect of Multi-Class Structures

This table presents results of ordinary least squares (OLS) firm-level panel regressions of Tobin's *Q* on a multi-class indicator and control variables. Panel A shows the baseline results for the full sample and separately for U.S. and non-U.S. firms. Panel B shows the country-by-country regressions results for the subset of countries with at least 10 unique multi-class firms. Variable definitions are provided in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Baseline results

Dependent variable:	Full sample	U.S. sample	Non-U.S. sample
TOBIN_Q	(1)	(2)	(3)
MULTI_CLASS	-0.046	0.002	-0.062*
	[0.030]	[0.056]	[0.036]
LN(TOTAL_ASSETS)	-0.014***	-0.026***	-0.013***
	[0.004]	[0.010]	[0.005]
YEARS_FROM_IPO	-0.007***	-0.006***	-0.007***
	[0.001]	[0.001]	[0.001]
LEVERAGE	-0.426***	-0.269***	-0.485***
	[0.038]	[0.092]	[0.040]
R&D	1.574***	1.328***	1.543***
	[0.087]	[0.114]	[0.151]
TANGIBILITY	-0.295***	-0.304***	-0.297***
	[0.025]	[0.067]	[0.027]
SALES_GROWTH	0.002***	0.004***	0.001***
	[0.000]	[0.000]	[0.000]
ROA	0.032***	0.027***	0.035***
	[0.001]	[0.002]	[0.002]
DIVIDEND_YIELD	-0.065***	-0.003	-0.078***
	[0.003]	[0.007]	[0.003]
Country FE	Yes	No	Yes
Industry-Year FE	Yes	Yes	Yes
Observations	185,957	35,044	150,913
R^2	0.262	0.216	0.266

Table 4 (continued)

Panel B. Country-specific results

	Country	Observations	*MULTI_CLASS* Coefficient	Std. err.
MSCI Developed Countries:	Belgium	908	0.064	[0.111]
	Canada	6,329	-0.161**	[0.076]
	Denmark	771	-0.129	[0.221]
	Finland	964	0.040	[0.109]
	Germany	4,105	-0.130*	[0.071]
	Italy	2,083	0.060	[0.071]
	Sweden	1,686	0.037	[0.098]
	Switzerland	2,135	0.021	[0.122]
	United Kingdom	7,204	-0.076	[0.095]
	United States	35,045	0.002	[0.056]
	Countries with insufficient observations:	Australia, Austria, France, Hong, Kong, Ireland, Israel, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain		
MSCI Emerging Countries:	Brazil	2,333	-0.468***	[0.178]
	Mexico	1,022	-0.001	[0.100]
	Russia	1,505	-0.257	[0.163]
	South Korea	9,410	0.050	[0.042]
	Countries with insufficient observations:	Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Peru, Philippines, Poland, Qatar, South Africa, Taiwan, Thailand, Turkey		

Table 5. Valuation of Multi-Class Firms: Life-Cycle Effects

This table presents results of ordinary least squares (OLS) firm-level panel regressions of Tobin's *Q* on a multi-class indicator and control variables for U.S. and non-U.S. firms. *MATURE_IPO* equals one if a firm's age in public markets (*YEARS_FROM_IPO*) is above the median in the country where the firm is incorporated. *MATURE* equals one if a firm's age since founding is above the median in the country where the firm is incorporated. All variables are defined in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	U.S. sample	Non-U.S. sample	U.S. sample	Non-U.S. sample
TOBIN_Q	(1)	(2)	(3)	(4)
MULTI_CLASS	0.085	-0.094*	0.138	0.003
	[0.078]	[0.050]	[0.094]	[0.051]
MATURE_IPO	-0.102***	-0.076***		
	[0.028]	[0.011]		
MULTI_CLASS × MATURE_IPO	-0.160*	0.039		
	[0.092]	[0.048]		
MATURE			-0.132***	-0.008
			[0.028]	[0.013]
MULTI_CLASS × MATURE			-0.203*	-0.125**
			[0.107]	[0.058]
LN(TOTAL_ASSETS)	-0.032***	-0.016***	-0.032***	-0.021***
	[0.010]	[0.005]	[0.010]	[0.004]
LEVERAGE	-0.261***	-0.478***	-0.254***	-0.468***
	[0.091]	[0.040]	[0.092]	[0.040]
R&D	1.331***	1.552***	1.324***	1.569***
	[0.114]	[0.151]	[0.114]	[0.152]
TANGIBILITY	-0.297***	-0.299***	-0.296***	-0.304***
	[0.067]	[0.027]	[0.068]	[0.027]
SALES_GROWTH	0.005***	0.001***	0.004***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]
ROA	0.027***	0.035***	0.027***	0.036***
	[0.002]	[0.002]	[0.002]	[0.002]
DIVIDEND_YIELD	-0.006	-0.078***	-0.005	-0.079***
	[0.007]	[0.003]	[0.007]	[0.003]
Country FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Observations	35,044	150,913	35,044	150,913
R^2	0.216	0.265	0.217	0.264

Table 6. Valuation of Multi-Class Firms: The Role of Institutional Investors

This table examines how institutional investors influence the valuation of multi-class firms. Panel A presents the baseline results of ordinary least squares (OLS) panel regressions of Tobin's *Q* on a multi-class indicator interacted with *IO_TOTAL* (total institutional ownership) for U.S. and non-U.S. firms. Panel B splits the samples into firms that are part of a major index (S&P 500 in the U.S. and MSCI ACWI outside the U.S.) and firms that are not. Panel C decomposes total institutional ownership by different types: passive and active, high threat and low threat, and domestic and foreign, and interact the multi-class indicator with these decomposed pairs of institutional ownership variables. *IO_PASSIVE* is the total ownership owned by the top three largest passive institutional investors around the world: BlackRock, State Street, and Vanguard. *IO_ACTIVE* is *IO_TOTAL* minus *IO_PASSIVE*. *IO_HIGHTHREAT* is the total ownership by institutional investors that are classified as very high, high, or medium threat by SharkRepellent. *IO_LOWTHREAT* is *IO_TOTAL* minus *IO_HIGHTHREAT*. These two variables are defined only for the U.S. sample. *IO_DOM* and *IO_FOR* refer to total ownership by domestic and foreign institutional investors, respectively. To facilitate interpretation across columns, all institutional ownership variables are standardized (remove mean and divide by standard error) in all regressions. Definitions of all variables are provided in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Baseline results

Dependent variable:	U.S. sample	Non-U.S. sample
TOBIN_Q	(1)	(2)
MULTI_CLASS	-0.001	-0.011
	[0.061]	[0.041]
IO_TOTAL	0.124***	0.131***
	[0.016]	[0.011]
MULTI_CLASS × IO_TOTAL	-0.123**	-0.060***
	[0.062]	[0.023]
LN(TOTAL_ASSETS)	-0.053***	-0.050***
	[0.011]	[0.006]
YEARS_FROM_IPO	-0.006***	-0.006***
	[0.001]	[0.001]
LEVERAGE	-0.220**	-0.485***
	[0.094]	[0.041]
R&D	1.303***	1.521***
	[0.113]	[0.151]
TANGIBILITY	-0.259***	-0.275***
	[0.068]	[0.028]
SALES_GROWTH	0.005***	0.001***
	[0.000]	[0.000]
ROA	0.026***	0.037***
	[0.002]	[0.002]
DIVIDEND_YIELD	0.008	-0.080***
	[0.007]	[0.003]
Country FE	No	Yes
Industry-Year FE	Yes	Yes
Observations	34,483	128,687
R^2	0.226	0.297

Panel B. Index members versus non-index members

Dependent variable:	U.S. sample		Non-U.S. sample	
TOBIN_Q	S&P 500 firms	non-S&P 500 firms	MSCI firms	non-MSCI firms
	(1)	(2)	(3)	(4)
MULTI_CLASS	0.057	-0.008	-0.049	0.007
	[0.148]	[0.053]	[0.080]	[0.035]
IO_TOTAL	-0.069**	0.172***	-0.037	0.119***
	[0.027]	[0.018]	[0.029]	[0.009]
MULTI_CLASS × IO_TOTAL	-0.151*	-0.156**	-0.046	-0.069***
	[0.083]	[0.067]	[0.056]	[0.023]
LN(TOTAL_ASSETS)	-0.185***	-0.172***	-0.246***	-0.122***
	[0.028]	[0.015]	[0.021]	[0.007]
YEARS_FROM_IPO	-0.005*	-0.010***	-0.002	-0.008***
	[0.003]	[0.001]	[0.003]	[0.001]
LEVERAGE	-0.146	-0.062	-0.131	-0.392***
	[0.201]	[0.099]	[0.125]	[0.036]
R&D	5.636***	1.041***	4.131***	1.202***
	[1.172]	[0.105]	[1.258]	[0.113]
TANGIBILITY	-0.070	-0.213***	-0.332***	-0.243***
	[0.160]	[0.067]	[0.079]	[0.027]
SALES_GROWTH	0.000	0.005***	-0.001*	0.002***
	[0.001]	[0.000]	[0.001]	[0.000]
ROA	0.097***	0.018***	0.084***	0.028***
	[0.005]	[0.002]	[0.005]	[0.002]
DIVIDEND_YIELD	-0.062***	0.015**	-0.116***	-0.071***
	[0.017]	[0.007]	[0.009]	[0.003]
Country FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Observations	5,576	28,907	19,936	108,751
R^2	0.569	0.233	0.442	0.311

Panel C. Heterogeneity across different types of institutional ownership

Dependent variable:	U.S. sample			Non-U.S. sample	
TOBIN_Q	(1)	(2)	(3)	(4)	(5)
MULTI_CLASS	0.004	-0.009	0.009	-0.007	-0.011
	[0.061]	[0.060]	[0.060]	[0.041]	[0.040]
MULTI_CLASS × IO_PASSIVE	0.020			0.020	
	[0.047]			[0.044]	
MULTI_CLASS × IO_ACTIVE	-0.135**			-0.066**	
	[0.062]			[0.030]	
MULTI_CLASS × IO_HIGHTHREAT		-0.108**			
		[0.047]			
MULTI_CLASS × IO_LOWTHREAT		-0.104			
		[0.064]			
MULTI_CLASS × IO_DOM			-0.135**		-0.061***
			[0.066]		[0.018]
MULTI_CLASS × IO_FOR			0.003		-0.008
			[0.055]		[0.030]
IO_PASSIVE	0.029*			0.062***	
	[0.017]			[0.008]	
IO_ACTIVE	0.109***			0.096***	
	[0.017]			[0.010]	
IO_HIGHTHREAT		-0.031***			
		[0.011]			
IO_LOWTHREAT		0.136***			
		[0.016]			
IO_DOM			0.090***		0.051***
			[0.015]		[0.008]
IO_FOR			0.163***		0.111***
			[0.020]		[0.011]
LN(TOTAL_ASSETS)	-0.053***	-0.055***	-0.093***	-0.059***	-0.054***
	[0.011]	[0.011]	[0.013]	[0.006]	[0.006]
YEARS_FROM_IPO	-0.006***	-0.007***	-0.006***	-0.007***	-0.006***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
LEVERAGE	-0.220**	-0.189**	-0.203**	-0.476***	-0.477***
	[0.096]	[0.094]	[0.092]	[0.042]	[0.042]
R&D	1.301***	1.299***	1.236***	1.525***	1.513***
	[0.114]	[0.113]	[0.112]	[0.151]	[0.151]
TANGIBILITY	-0.263***	-0.267***	-0.238***	-0.282***	-0.280***
	[0.068]	[0.068]	[0.067]	[0.029]	[0.029]
SALES_GROWTH	0.005***	0.005***	0.005***	0.001***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ROA	0.026***	0.025***	0.025***	0.037***	0.037***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
DIVIDEND_YIELD	0.008	0.006	0.009	-0.079***	-0.079***
	[0.007]	[0.007]	[0.007]	[0.003]	[0.003]
Country FE	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes
Observations	34,453	34,453	34,483	128,626	128,687
R^2	0.226	0.229	0.235	0.298	0.297

Table 7. Excess Stock Returns of Multi-Class Firms: the Role of Institutional Shareholders

The table presents the results of Fama-French-Carhart four-factor calendar-time regressions for the portfolio of multi-class firms, the portfolio of single-class firms, and a zero-cost portfolio that longs multi-class firms and shorts single-class firms over the period of 2001 to 2016 (192 months). The dependent variables are value-weighted monthly portfolio returns in excess of U.S. T-bill rates. Columns 1 to 5 present the results for the U.S. sample; columns 6 to 10 present the results the sample of 23 non-U.S. countries for which we have factors returns available from AQR (Asness, Frazzini and Pedersen (2014)). In columns 4 to 5 and 9 to 10, the stocks are allocated to two groups, "High IO" and "Low IO", using the median *IO_TOTAL* in each country. 'Alpha' is the estimate of the regression intercept; 'MKT' is the estimate of the factor loading on the market excess return (the Fama-French RMRF); 'SMB,' 'HML,' and UMD' are the estimates of the factor loadings on the Fama-French size and book-to-market factors, and the Carhart momentum factor, respectively. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	U.S. sample					Non-U.S. sample				
	Multi	Single	Long multi short single	Long multi short single (High IO)	Long multi short single (Low IO)	Multi	Single	Long multi short single	Long multi short single (High IO)	Long multi short single (Low IO)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Alpha	0.001	0.000	0.001	-0.000	0.001	0.004***	0.001	0.003*	0.002	0.003
	[0.001]	[0.000]	[0.002]	[0.002]	[0.002]	[0.001]	[0.001]	[0.002]	[0.002]	[0.002]
MKT	1.031***	0.993***	0.038	-0.057	0.085*	1.054***	0.945***	0.109***	0.103***	0.147***
	[0.037]	[0.010]	[0.039]	[0.050]	[0.049]	[0.029]	[0.011]	[0.032]	[0.037]	[0.044]
SMB	0.087	-0.012	0.099	0.109	0.190**	-0.178**	-0.005	-0.172**	-0.234**	-0.051
	[0.065]	[0.017]	[0.069]	[0.088]	[0.087]	[0.073]	[0.028]	[0.080]	[0.092]	[0.109]
HML	-0.148***	-0.146***	-0.002	0.099	-0.027	-0.215***	-0.142***	-0.073	0.054	0.063
	[0.057]	[0.015]	[0.060]	[0.077]	[0.075]	[0.074]	[0.028]	[0.081]	[0.093]	[0.111]
UMD	-0.001	0.020**	-0.021	0.012	-0.011	-0.043	0.036**	-0.079*	-0.040	-0.172***
	[0.031]	[0.008]	[0.032]	[0.042]	[0.041]	[0.038]	[0.015]	[0.042]	[0.048]	[0.057]
Observations	192	192	192	192	192	192	192	192	192	192
R^2	0.854	0.987	0.036	0.023	0.071	0.905	0.980	0.149	0.093	0.176

Table 8. Institutional Investor Holdings of Multi-Class Firms

This table presents results of ordinary least squares (OLS) firm-level panel regressions of the level of institutional ownership on a multi-class indicator and other control variables for U.S. and non-U.S. firms. Panel A presents the baseline results focusing on total institutional ownership. Panel B presents the results decomposing total institutional ownership into ownership by different types of institutional investors: passive and active, high threat and low threat, and domestic and foreign, and interact the multi-class indicator with these decomposed pairs of institutional ownership variables. *IO_PASSIVE* is the total ownership owned by the top three largest passive institutional investors around the world: BlackRock, State Street, and Vanguard. *IO_ACTIVE* is *IO_TOTAL* minus *IO_PASSIVE*. *IO_HIGHTHREAT* is the total ownership by institutional investors that are classified as very high, high, or medium threat by SharkRepellent. *IO_HIGHTHREAT* and *IO_LOWTHREAT* are defined only for the U.S. sample. For non-U.S. firms, we further decompose *IO_FOR* into foreign institutional ownership by U.S. investors (*IO_FOR_US*) and that by non-U.S. investors (*IO_FOR_NUS*). Definitions of all variables are provided in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Baseline results

	U.S. sample		Non-U.S. sample	
Dependent variable:	*IO_TOTAL*	*IO_TOTAL*	*IO_TOTAL*	*IO_TOTAL*
	(1)	(2)	(3)	(4)
MULTI_CLASS	-0.113***	-0.033***	-0.027***	-0.025***
	[0.013]	[0.010]	[0.006]	[0.005]
LN(TOTAL_ASSETS)	0.056***	0.019***	0.030***	0.008***
	[0.003]	[0.003]	[0.001]	[0.001]
YEARS_FROM_IPO	0.001*	-0.001***	-0.000	-0.000
	[0.000]	[0.000]	[0.000]	[0.000]
LEVERAGE	-0.135***	-0.062***	-0.065***	-0.043***
	[0.016]	[0.014]	[0.005]	[0.004]
R&D	0.058***	0.006	0.104***	0.047***
	[0.013]	[0.011]	[0.015]	[0.013]
TANGIBILITY	-0.108***	-0.085***	-0.030***	-0.023***
	[0.018]	[0.014]	[0.005]	[0.004]
SALES_GROWTH	-0.000***	-0.000	-0.000	-0.000
	[0.000]	[0.000]	[0.000]	[0.000]
ROA	0.003***	0.002***	0.002***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]
DIVIDEND_YIELD	-0.028***	-0.024***	-0.003***	-0.003***
	[0.002]	[0.002]	[0.000]	[0.000]
INSIDER_OWNERSHIP		-0.672***		-0.168***
		[0.014]		[0.004]
STOCK_RETURN		-0.001		0.005***
		[0.003]		[0.001]
TUNRNOVER		0.005***		-0.002***
		[0.001]		[0.000]
ANALYSTS		0.003***		0.006***
		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Observations	34,483	32,624	128,687	116,416
R^2	0.240	0.500	0.487	0.592

Panel B. Heterogeneity across different types of institutional ownership

Dependent variables:	U.S. sample						Non-U.S. sample					
	IO_ PASSIVE (1)	*IO_ ACTIVE* (2)	*IO_HIGHT HREAT* (3)	*IO_LOWT HREAT* (4)	*IO_DOM* (5)	*IO_FOR* (6)	*IO_ PASSIVE* (7)	*IO_ ACTIVE* (8)	*IO_DOM* (9)	*IO_FOR* (10)	*IO_ FOR_US* (11)	*IO_ FOR_NUS* (12)
MULTI_CLASS	-0.008***	-0.025***	-0.007***	-0.026***	-0.030***	-0.003*	-0.002***	-0.023***	-0.003	-0.022***	-0.012***	-0.011***
	[0.002]	[0.009]	[0.002]	[0.009]	[0.009]	[0.002]	[0.001]	[0.005]	[0.003]	[0.004]	[0.003]	[0.002]
LN(TOTAL_ASSETS)	0.006***	0.014***	0.005***	0.015***	0.012***	0.007***	0.002***	0.006***	-0.001	0.009***	0.005***	0.003***
	[0.001]	[0.003]	[0.001]	[0.003]	[0.003]	[0.001]	[0.000]	[0.001]	[0.000]	[0.001]	[0.001]	[0.000]
YEARS_FROM_IPO	0.001***	-0.002***	-0.000***	-0.001***	-0.001***	0.000***	0.000***	-0.000**	-0.000	-0.000	0.000	-0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
LEVERAGE	-0.021***	-0.041***	0.022***	-0.084***	-0.062***	0.000	-0.003***	-0.039***	-0.000	-0.043***	-0.024***	-0.018***
	[0.002]	[0.012]	[0.004]	[0.013]	[0.013]	[0.002]	[0.001]	[0.004]	[0.002]	[0.004]	[0.004]	[0.002]
R&D	0.012***	-0.006	0.003	0.003	-0.009	0.015***	0.001	0.046***	0.008	0.039***	0.036***	0.004
	[0.002]	[0.010]	[0.003]	[0.010]	[0.010]	[0.002]	[0.001]	[0.013]	[0.008]	[0.012]	[0.011]	[0.004]
TANGIBILITY	-0.010***	-0.075***	-0.005	-0.079***	-0.073***	-0.012***	0.001	-0.024***	-0.016***	-0.008**	-0.002	-0.005***
	[0.003]	[0.013]	[0.006]	[0.014]	[0.014]	[0.003]	[0.001]	[0.004]	[0.003]	[0.004]	[0.003]	[0.001]
SALES_GROWTH	-0.000***	0.000	-0.000*	-0.000	-0.000*	0.000	-0.000	-0.000	0.000*	-0.000**	-0.000***	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ROA	0.000***	0.002***	-0.000***	0.002***	0.002***	0.000	0.000***	0.001***	0.001***	0.001***	0.000***	0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
DIVIDEND_YIELD	-0.003***	-0.021***	-0.004***	-0.020***	-0.023***	-0.001***	-0.000***	-0.002***	0.000**	-0.003***	-0.003***	-0.000**
	[0.000]	[0.002]	[0.000]	[0.002]	[0.002]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
INSIDER_OWNERSHIP	-0.098***	-0.576***	-0.033***	-0.640***	-0.643***	-0.030***	-0.010***	-0.158***	-0.066***	-0.102***	-0.056***	-0.046***
	[0.002]	[0.012]	[0.005]	[0.013]	[0.014]	[0.002]	[0.000]	[0.004]	[0.002]	[0.003]	[0.003]	[0.001]
STOCK_RETURN	-0.002***	0.001	-0.002**	0.000	-0.000	-0.001***	0.000	0.004***	0.003***	0.001***	-0.000	0.002***
	[0.000]	[0.002]	[0.001]	[0.002]	[0.002]	[0.000]	[0.000]	[0.001]	[0.000]	[0.001]	[0.000]	[0.000]
TUNRNOVER	0.001***	0.004***	0.000*	0.005***	0.005***	0.000***	-0.000	-0.002***	-0.001***	-0.001***	0.000	-0.001***
	[0.000]	[0.001]	[0.000]	[0.001]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ANALYSTS	0.001***	0.003***	-0.001***	0.005***	0.001***	0.002***	0.001***	0.005***	0.000	0.006***	0.003***	0.003***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,614	32,594	32,614	32,594	32,624	32,624	116,514	116,364	116,416	116,416	116,416	116,416
R^2	0.579	0.443	0.078	0.490	0.449	0.390	0.384	0.582	0.536	0.456	0.338	0.411

Table 9. Unification of Multi-class Shares

This table presents the effects of institutional ownership on the likelihood of multi-class firms unifying their shares into a single-class (unification). We estimate Probit panel regressions of unification events on different types of institutional ownership and report the estimated average marginal effects. The dependent variable *UNIFICATION* is a dummy equal to one if a firm is multi-class this year and single-class next year. Definitions of other variables are provided in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	U.S. sample				Non-U.S. sample		
UNIFICATION	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IO_TOTAL	0.070***				0.027		
	[0.025]				[0.020]		
IO_FOR		-0.029				0.011	
		[0.158]				[0.026]	
IO_DOM		0.075***				0.056*	
		[0.026]				[0.032]	
IO_PASSIVE			-0.612***				-0.674***
			[0.157]				[0.238]
IO_ACTIVE			0.151***				0.065***
			[0.030]				[0.025]
IO_HIGHTHREAT				0.306***			
				[0.086]			
IO_LOWTHREAT				0.051*			
				[0.026]			
LN(TOTAL_ASSETS)	-0.005	-0.004	-0.003	-0.005	-0.002	-0.001	0.000
	[0.004]	[0.004]	[0.004]	[0.004]	[0.002]	[0.002]	[0.002]
YEARS_FROM_IPO	-0.001**	-0.001*	-0.000	-0.001*	-0.002***	-0.002***	-0.002***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
LEVERAGE	-0.004	-0.004	-0.014	-0.006	0.021	0.021	0.020
	[0.025]	[0.025]	[0.026]	[0.026]	[0.017]	[0.017]	[0.017]
R&D	0.018	0.024	0.041	0.027	-0.151	-0.142	-0.157
	[0.031]	[0.034]	[0.034]	[0.030]	[0.171]	[0.171]	[0.171]
TANGIBILITY	0.065***	0.065***	0.059***	0.066***	0.007	0.007	0.005
	[0.023]	[0.023]	[0.021]	[0.022]	[0.017]	[0.017]	[0.017]
SALES_GROWTH	0.000*	0.000*	0.000	0.000*	-0.000**	-0.000**	-0.000**
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ROA	0.000	0.000	0.000	0.000	0.001	0.001	0.001
	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]
DIVIDEND_YIELD	0.001	0.001	0.000	0.001	0.003**	0.002**	0.002**
	[0.002]	[0.002]	[0.002]	[0.002]	[0.001]	[0.001]	[0.001]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,491	1,491	1,491	1,491	3,427	3,427	3,427
Pseudo-R^2	0.090	0.090	0.116	0.101	0.125	0.125	0.131

Table 10. Valuation Effects of Share-Class Structure Changes

This table presents results of ordinary least squares (OLS) firm-level panel regressions of Tobin's *Q* on share-class structure changes. The variable *UNIFICATION* is a dummy equal to one if a firm goes from multi-class in the previous year to single-class in that year while *MULTIPLICATION* is a dummy equal to one if a firm goes from single-class to multi-class. Definitions of other control variables are provided in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	U.S. sample	Non-U.S. sample
TOBIN_Q	(1)	(2)
$MULTI\_CLASS_{t-1}$	0.007	-0.063*
	[0.058]	[0.036]
UNIFICATION	-0.006	0.180**
	[0.112]	[0.078]
MULTIPLICATION	-0.070	-0.018
	[0.076]	[0.066]
LN(TOTAL_ASSETS)	-0.026***	-0.014***
	[0.010]	[0.005]
YEARS_FROM_IPO	-0.006***	-0.007***
	[0.001]	[0.001]
LEVERAGE	-0.269***	-0.485***
	[0.092]	[0.040]
R&D	1.328***	1.543***
	[0.114]	[0.151]
TANGIBILITY	-0.304***	-0.297***
	[0.067]	[0.027]
SALES_GROWTH	0.004***	0.001***
	[0.000]	[0.000]
ROA	0.027***	0.035***
	[0.002]	[0.002]
DIVIDEND_YIELD	-0.003	-0.078***
	[0.007]	[0.003]
Country FE	No	Yes
Industry-Year FE	Yes	Yes
Observations	35,044	150,913
R^2	0.216	0.266

Table 11. Changes in Institutional Ownership around Share-Class Structure Changes

This table presents results of ordinary least squares (OLS) firm-level panel regressions of institutional ownership (*IO_TOTAL*) on share-class structure changes. The variable *UNIFICATION* is a dummy equal to one if a firm goes from multi-class in the previous year to single-class in that year while *MULTIPLICATION* is a dummy equal to one if a firm goes from single-class to multi-class. Definitions of other control variables are provided in Table A.2 in the Appendix. Robust standard errors adjusted for firm-level clustering are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent variable:	U.S. sample		Non-U.S. sample	
IO_TOTAL	(1)	(2)	(3)	(4)
MULTI_CLASS	-0.115***	-0.030***	-0.027***	-0.025***
	[0.013]	[0.010]	[0.006]	[0.005]
UNIFICATION	0.080***	0.002	0.020	0.020
	[0.031]	[0.024]	[0.013]	[0.013]
MULTIPLICATION	-0.078***	-0.093***	-0.030***	-0.030***
	[0.021]	[0.023]	[0.011]	[0.011]
LN(TOTAL_ASSETS)	0.056***	0.019***	0.030***	0.008***
	[0.003]	[0.003]	[0.001]	[0.001]
YEARS_FROM_IPO	0.001*	-0.001***	-0.000	-0.000
	[0.000]	[0.000]	[0.000]	[0.000]
LEVERAGE	-0.135***	-0.062***	-0.065***	-0.043***
	[0.016]	[0.014]	[0.005]	[0.004]
R&D	0.058***	0.006	0.104***	0.047***
	[0.013]	[0.011]	[0.015]	[0.013]
TANGIBILITY	-0.108***	-0.085***	-0.030***	-0.023***
	[0.018]	[0.014]	[0.005]	[0.004]
SALES_GROWTH	-0.000***	-0.000	-0.000	-0.000
	[0.000]	[0.000]	[0.000]	[0.000]
ROA	0.003***	0.002***	0.002***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]
DIVIDEND_YIELD	-0.028***	-0.024***	-0.003***	-0.003***
	[0.002]	[0.002]	[0.000]	[0.000]
INSIDER_OWNERSHIP		-0.673***		-0.168***
		[0.014]		[0.004]
STOCK_RETURN		-0.001		0.005***
		[0.003]		[0.001]
TUNRNOVER		0.005***		-0.002***
		[0.001]		[0.000]
ANALYSTS		0.003***		0.006***
		[0.000]		[0.000]
Country FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Observations	34,483	32,624	128,687	116,416
R^2	0.240	0.500	0.345	0.592

Appendix Figure 1. Dynamics of Tobin's *q* for Multi- and Single-Class Firms over Life Cycle

This figure plots the dynamics of Tobin's Q for average multi- and single-class firms over their public life cycle from age 1 to 25. We do this for US and non-US samples separately. To construct the graphs, we first estimate a version of the regressions in Table 5 in which we replace *MATURE_IPO* and *MULTI_CLASS* × *MATURE_IPO* with $\sum_{k=0}^{25} D(age = k)$ and $\sum_{k=0}^{25} MULTI\_CLASS \times D(age = k)$, where $D(age = k)$ is an indicator equal to one if *YEARS_FROM_IPO*= *k*, and zero otherwise. We plot the constant plus the coefficient on *D(age = k)* for single-class firms (red, dashed line) and the constant plus the coefficient on *D(age = k)* plus the coefficient on *MULTI_CLASS* × *D(age = k)* plus the coefficient on *MULTI_CLASS* for multi-class firms (blue, solid line).