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Finance Working Paper N° 637/2019
November 2019

Alon Brav
Duke University, NBER and ECGI

Matthew D. Cain
University of California, Berkeley

Jonathon Zytnick
Columbia University, New York University School of Law

ECGI Working Paper Series in Finance

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For valuable comments and discussions we are grateful to Chuck Callan, Manuel Adelino, Fabrizio Ferri, Michael Gofman, Doron Levit, Dorothy Lund, Ed Rock, Edwin Hu, participants in the workshop on Corporate Governance and Investor Activism at the Swedish House of Finance at the Stockholm School of Economics, and seminars at Rochester and American University. We also thank Andrea Kropp, Saba Yasmin and Andrew McKinley for their excellent research assistance.

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Keywords: Retail Voting, Shareholder Proposal, Proxy Advisory Firm, Corporate Governance

JEL Classifications: G11, G18, G23, G34, G38

Alon Brav
Robert L. Dickens Professor of Finance
Duke University, Fuqua School of Business
100 Fuqua Drive
Durham, NC 27708, United States
phone: +1 919 660 2908
e-mail: brav@duke.edu

Matthew D. Cain*
Senior Fellow
University of California, Berkeley Law School
225 Bancroft Way
Berkeley, CA 94720, United States
phone: +1 574 485 8065
e-mail: matt.cain@berkeley.edu

Jonathon Zytnick
PhD Candidate
Columbia University, Department of Economics
420 W 118th Street
New York, NY 10027, United States
e-mail: jzytnick@gmail.com

*Corresponding Author

RETAIL SHAREHOLDER PARTICIPATION IN THE PROXY PROCESS: MONITORING, ENGAGEMENT, AND VOTING

Alon Brav,[a] Matthew Cain,[b] and Jonathon Zytnick[c*]

[a] Fuqua School of Business, Duke University

[b] Berkeley School of Law, UC Berkeley

[c] NYU School of Law

November 6, 2019

[*] Alon Brav is the Peterjohn-Richards Professor of Finance at Fuqua School of Business, Duke University, ECGI and NBER. He can be reached by phone: (919) 660-2908, email: brav@duke.edu. Matthew Cain is a Senior Fellow at the Berkeley Center for Law and Business, UC Berkeley School of Law. He can be reached at phone: (574) 485-8065, email: mdcain@outlook.com. Jonathon Zytnick is a fellow at NYU School of Law's Institute for Corporate Governance and Finance and a PhD student at Columbia University. He can be reached at phone: (240) 498-9112, email: jzytnick@gmail.com. For valuable comments and discussions we are grateful to Chuck Callan, Manuel Adelino, Fabrizio Ferri, Michael Gofman, Doron Levit, Dorothy Lund, Ed Rock, Edwin Hu, participants in the workshop on Corporate Governance and Investor Activism at the Swedish House of Finance at the Stockholm School of Economics, and seminars at Rochester and American University. We also thank Andrea Kropp, Saba Yasmin and Andrew McKinley for their excellent research assistance.

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1. Introduction

A central premise of corporate governance research is the shareholder collective action problem. Shareholders, the ultimate economic beneficiaries of firms, are by commonly-accepted wisdom dispersed and rationally apathetic, unable to effectively monitor firms. Research tends to focus on those who are hired to act for shareholders' ultimate economic benefit: the management and directors, and, in more recent decades, the institutional investors which have become the primary channels of investment for most individuals. Much of the research on retail shareholders in the finance literature has focused on their buying and selling decisions while there is little research on their voting decisions. The rise in the importance of corporate governance over the past several decades has brought with it a new focus on the role of institutions as monitors acting on behalf of their underlying investors. Little is known, however, about how retail shareholders monitor and communicate with the managements of their portfolio firms. While previous research has produced extensive empirical analysis on institutional investor (i.e. non-retail) voting, the question of how actual retail shareholders vote has not been addressed, mostly due to lack of data availability.

In this paper, we provide the first detailed empirical analysis of retail shareholder voting. We analyze a sample of U.S. retail shareholder voting data covering virtually all regular and special meetings during the three years 2015 to 2017. This data is anonymized at the voter level but allows us to track voters both across firms and over time. To our knowledge, this is the first such study to explore retail shareholder voting behavior in detail. Retail domestic shareholder aggregate share ownership is sizeable, averaging 26% of shares outstanding. It averages close to 38% in firms in the smallest size quintile and declines to 16% in firms in the largest size quintile. The number of investors, however, strongly increases with firm size, with firms in the largest size quintiles held by more than a quarter million retail accounts, on average.

On the decision whether to cast a ballot, we find that retail shareholders cast 32% of their shares, on average, which is significantly lower than the 80% rate of participation by the entire shareholder base. In total, 12% of the average firm's retail accounts choose to vote. Retail voter participation is higher among smaller firms. We also find that retail shareholders turn out to vote at a higher rate when their stake size in a firm is greater. The decision to cast a ballot varies predictably with anticipated costs and benefits. It increases with stake size and when the

company's performance is poor, and decreases with zip code labor income, which we use as a proxy for opportunity cost of time spent on voting.

An important factor associated with participation is the method of proxy delivery to retail shareholders. We exploit the fact that firms choose what information materials to send to shareholders, but their choice only affects one subgroup of accounts and not others. Exploiting firms that switch materials in a difference-in-difference-in-difference setup, we find that sending a full package of information materials causally increases turnout by 3 percentage points, or roughly by 60%.

Conditional on the decision to vote, we find that retail and non-retail shareholders tend to provide similar overall support for management proposals. Retail shareholders, however, provide less support for shareholder proposals relative to the broader investor base. These unconditional support rates mask three important heterogeneities. First, retail shareholders at small firms are less (more) supportive of management (shareholder) proposals than they are at larger firms. Second, retail shareholders with a larger equity stakes provide stronger (weaker) support for management (shareholder) proposals than smaller shareholders across all firm size sorts. Third, ISS recommendations in support of management and shareholder proposals have a much weaker association with retail voting than that for institutional investors.

Retail shareholder support for management proposals (and in opposition to management-opposed proposals) is strongly related to lagged firm stock price performance, even with account-firm fixed effects, consistent with a focus on disciplining poorly-performing firms. The elasticity of retail voting support with respect to lagged performance is highest for small firms. Conditional on voting, changes in the size of a retail voter's stake in a firm over time are positively correlated with changes in that retail voter's support of management.

Retail shareholders do not support environmental, social, and governance (ESG) proposals to the same degree as institutional investors. This is driven by the tendency of retail shareholders with large stake sizes, who participate more often, to vote against such proposals. We find that shareholders with smaller stake sizes, whose turnout rate is low, provide stronger support for ESG proposals when they choose to engage.

We engage in simple comparative statics to assess the overall influence of retail shareholders on voting outcomes. On net, we find that the impact of the retail vote is comparable to that of the Big Three mutual funds.

The evidence we present is consistent with the view that retail shareholders play a beneficial role in monitoring, and one that institutional investors may not perfectly replicate. Our results are also consistent with retail voters who weigh costs and expected benefits when choosing whether to cast a ballot. Our results also speak to the potential impact of measures to increase retail shareholder voting. Ultimately, we conclude that in contrast to the common caricature of retail shareholders as uninformed and apathetic, these investors can and do provide meaningful feedback to firms through the voting process.

1.1. Literature Review

Our results provide a new lens for understanding shareholder governance. Shareholders' channels of disciplining management are commonly outlined following Hirschman's (1970) classic framework, as "voice or exit." Investors can "exit" by selling their shares when they are dissatisfied with management or use "voice," that is, engage with the management and the board and use their voting power. The latter mechanism has historically been less of a focus than exit as a disciplinary device for management. The expanding power of institutional investors has changed that emphasis and monitoring by institutional investors was proposed as a solution to the poor monitoring by shareholders (Black (1992)). The advent of mandatory voting disclosure by mutual funds in 2003 spawned a vigorous literature on institutional investor voting. This literature documents the extent to which mutual funds support management recommendations and their propensity to rely on proxy advisory recommendations. These decisions have, in turn, been linked to several fund and firm characteristics, including funds' own governance practices and costs of monitoring, business ties with the portfolio firms, other cross-holdings, peer-effects, and investment horizons. More recently, Bubb and Catan (2019) and Bolton et al. (2019) expand on this work, breaking down the party structure of different mutual funds. Brav et al. (2018) study voting by mutual funds in proxy contests.

On the other hand, barely any empirical research on retail shareholder voting has been conducted, due to lack of data. Individual retail investors generally have small equity stakes in any given firm, and it is costly for them to become informed given the relative size of the capital

they have invested. As a result, they tend to defer to other larger shareholders or management rather than engage with their ownership through voting. As Kastiel and Nili (2016) show, retail investor participation in voting has systematically declined over the past two decades even though this period saw a number of technological, regulatory, and corporate governance changes that were meant to help strengthen retail shareholder participation. Kastiel and Nili (2016) also find that when brokers are not allowed to vote on behalf of beneficial owners who do not provide them with their proxy voting instructions, the overall non-voting rate increases by ten percentage points. When they do vote, retail investors have historically voted with management (Stewart (2012), Chasan (2013)).

The evidence provided in this paper is relevant to the renewed focus on the efficacy of monitoring and stewardship by large institutional investors (Coates (2018)). As Gordon and Gilson (2013) trace, a growing movement towards diversification and changing regulations regarding retirement savings in the latter half of the 20th century have led to a change in how Americans save away from individual stock ownership and towards concentrated institutional ownership. This concentrated power has drawn attention to the incentives faced by fund advisors and whether these institutions allocate adequate resources towards monitoring of portfolio firms (Kahan and Rock (2019), Lewellen and Lewellen (2018), Fisch, Hamdani, and Davidoff Solomon (2019), Bebchuk and Hirst (2019)). Given retail shareholders' significant ownership in public firms, our study provides an indication of what voting may look like if these shareholders were given more power.

Several papers, including Kastiel and Nili (2016) and Gulinello (2010), have pushed for changes to promote greater participation among retail shareholders, and others, such as Zingales and Hart (2019), have argued for shareholder preferences as the ultimate objective function of firms. As Fisch (2017) has argued, retail shareholders have "skin in the game" and will select to monitor and engage only if they are adequately informed, whereas institutional votes are cast by intermediaries. It is therefore critical that we understand whether institutional votes adequately reflect the preferences of their underlying investors. Our study speaks to this question.

The paper is organized as follows. Section 2 provides institutional background on the proxy voting process, how ownership of shares is set up, and how shares are voted. Section 3 describes the retail shareholder voting data. Section 4 presents descriptive statistics on ownership, turnout, and voting. Section 5 presents initial evidence pointing to the impact of retail investor

participation. Section 6 provides empirical results on the retail decisions to turn out. Section 7 provides evidence on the factors associated with retail support for shareholder and management proposals. Section 8 concludes.

2. Background

2.1. Institutional Background

This section provides a summary of the proxy voting process, focusing on how ownership of shares is set up and how shares are voted. Figure 1 provides a synthesis of this information.[1]

As shareholders typically do not attend shareholder meetings in person, voting occurs mostly through the use of proxies that are solicited before the meeting. This process of proxy solicitation differs depending upon whether the shares are owned by registered owners or by beneficial owners. *Registered owners* hold securities in certificated form or in electronic form ("book-entry") through a direct registration system, which allows an investor to have his or her ownership of securities recorded by the issuer without having a physical certificate issued. Registered owners are often issuer's management, directors, employees, and its pension fund (Daly (2017), Racanelli (2018)). In contrast to a registered owner, a *beneficial owner* (or, "street name" owner) of the shares held in a custodial account with an intermediary or custodian is considered the holder of a "securities entitlement in a financial asset." This means that the beneficial owner has a pro rata interest in all like securities of the intermediary held in common by all other customers who own the same security.

The Depository Trust Co. (DTC) was created in 1973 to minimize the paperwork involved in record keeping. Most shares are now held in "street name" through the DTC by custodians, usually banks and brokerage firms, and under their title. One estimate is that 75% to 80% of all public issuers' shares are held in street name (Racanelli (2018)). Shares for mutual funds, pension funds, insurance firms, endowments, and trusts are usually held by bank custodians. The DTC holds all the shares of a given institution in fungible bulk, without any subdivision into separate accounts below the level of the DTC's participating entities. The DTC coordinates with the Central Depository (Cede & Co.) that holds shares in bulk in the names of the custodians who are part

[1] The material in this section draws upon the Securities and Exchange Commission, Concept Release on the U.S. Proxy System (2010), Kahan and Rock (2008), and Fisch (2017).

owners of the DTC. Custodians, also known as "nominees," own a pro rata interest in the aggregate number of shares of a particular issuer held at the DTC, which in turn means that investors own a pro rata interest in the custodian's shares. When an investor sells shares of an issuer from one custodian account to a buyer from another custodian account, Cede then shifts a corresponding number of shares of the issuer to the latter custodian account and removes them from the former custodian account. The beneficial owners' name is not available, nor is it recorded.

2.2. How Shares Are Voted

When it is time for a vote, usually during the annual general meeting of the firm, the issuer sets the date for the meeting and the record date.[2] Registered shareholders' right to vote grants them the authority to appoint a proxy to vote on their behalf at the meeting. As their names and addresses are available to the issuer, the issuer directly sends the proxy materials to registered shareholders through the transfer agent. After receiving the proxy materials from the issuer, registered owners vote by executing the proxy card and returning it to the "vote tabulator." A vote tabulator, usually the issuer's transfer agent, is appointed by an issuer to collect and count votes. However, the issuer will sometimes hire an independent third-party vote inspector if needed to oversee contested elections.

The process for soliciting proxies for beneficial owners, on the other hand, is significantly more complex than the solicitation of proxies for registered owners. The issuer sends an inquiry to the DTC, in which it asks for a list of participant custodians who hold shares of the issuer in its account. This "securities position listing" identifies the custodians who have a position in the issuer's securities and the number of securities held by each of them. DTC participants also provide information on the omnibus securities positions that their respondent bank network members hold. The issuer then sends a search card to all the banks and brokers identified by DTC or Cede asking for the number of proxies needed. Brokers must respond to search cards within seven business days, while banks must identify all respondent banks within one business day and indicate the approximate number of beneficial owners holding the issuer's shares directly with that bank within

[2] The record date under Delaware General Corporate Law (DGCL) §213 is fixed in advance of any vote and "shall not be more than 60 nor less than 10 days before the date" of the meeting. The individuals who are listed as registered owners as of the record date on the firm's books are entitled to notice of, and to vote at, the shareholder meeting.

seven business days.[3] Accurately conforming to these requirements can sometimes be a challenge due to a situation called "piggybacking" in which respondent banks keep track of their own customer accounts and larger banks keep record of how many shares they hold for the respondent bank.

Brokers and bank custodians send beneficial owners the proxy materials including a request for voting instructions, a "voting instruction form" (VIF), with a third party proxy service provider executing the process.[4] Since the majority of shares of public firms are held by beneficial owners who object to disclosure of their names (objecting beneficial owners ("OBOs"), issuers that wish to communicate directly with them must send information through the investor's custodian bank or broker-dealer, which generally is forwarded on a same-day basis. The SEC rules for "notice and access" permit firms to mail a notice of the internet-availability of their proxy materials instead of mailing a full package of proxy materials. The majority of shareholders receive proxy information electronically through e-mail, depending on the shareholder's indicated preference. Shareholders always have the option to request paper copies of the proxy materials.

Once the beneficial owners receive the VIF from the securities intermediary, they can instruct the intermediary on how to vote their shares (Gumbs, Hamblet, and Stortini (2013)). The VIF does not give the beneficial owner the right to attend the meeting, but he or she can request the appropriate documentation to do so from their intermediary if they so choose. The third party proxy service provider receives the voting instructions from the custodian, verifies receipt, verifies that the signatories have voting authority, executes the proxy on behalf of its custodian principal, and forwards a legal proxy to the vote tabulator. Issuers may also hire proxy solicitors (e.g., Okapi Partners, Innisfree, and Georgeson) when voting returns may be insufficient to meet state quorum requirements. In a contested election, management and the dissident also can employ their own proxy solicitors to identify beneficial owners holding large amounts of the issuers and encourage these shareholders to vote. Solicitation of shares held by retail investors, each owning a small

[3] Respondent banks are often smaller banks that deposit their clients' holdings with larger bank custodians (Kahn and Rock (2008)).

[4] Brokers and banks effectively reassign the proxy authority they receive from the DTC to the third party proxy service provider who executes a legal proxy on their behalf. Broadridge Financial Solutions, Inc. is the most widely-used third-party proxy service provider, processing approximately 80% of the outstanding shares in the United States in fiscal year 2018. See Form 10-K available at: http://www.broadridge-ir.com/financial-information/sec-filings.aspx. Issuers pay for the proxy processing services based on fees set by the New York Stock Exchange and approved by the SEC.

stake, is possible with mass mailing of "fight letters" and marketing materials, along with targeted phone campaigns. Issuers are required to disclose the use, and the cost, of these services in their proxy statements.

As Kahan and Rock (2008) point out, because of the complex chain of custody of shares held beneficially in street name, tabulators may disallow votes of omnibus proxies (which pass voting rights through the chain of custody) if they are not properly administered. For example, a name change not updated in the shareholder list would result in a break in the chain of custody. Shareholders typically do not have the ability to monitor whether their votes were cast as instructed.[5] Brokers cannot vote uninstructed shares in non-routine matters, so these become nonvotes.[6] Securities lending and shorting can lead to confusion regarding who the beneficial owner of a stock really is. Additionally, there can be imbalances in the system described above that nominee's address. For example, custodian banks may facilitate the return of loaned shares for voting by institutional investors. Broker-dealers apply certain share reconciliation practices to allocate votes among their customer accounts.

2.3. Retail Accounts

Retail investors typically manage their stockholdings through a broker. The different platforms provided by brokers give investors online accounts that allow them to log in and view information about their accounts and different investment vehicles with the broker, as well as execute trades. Other platforms provide retail investors with information on how to vote their shares. Brokers, however, are not required to connect these platforms directly to the retail investors' brokerage accounts. As a result, investors on these platforms must navigate to a different website run by a proxy services provider to submit voting instructions to their broker. For

[5] Racanelli (2018) cites Richard Grossman, a Skadden, Arps, Slate, Meagher & Flom attorney who states that "It's difficult, if not impossible, for a beneficial shareholder [whose shares are not registered in their own name] to find out if the vote was cast as instructed and properly counted." Grossman also states that "I am not aware of any obligations on the part of the various intermediaries to tell you."

[6] Kahan and Rock (2008) describe the problem of votes being voted by brokers if they do not receive instructions within ten days in advance. This is no longer the case on the New York Stock Exchange. NYSE Rule 452 was amended in 2009 so that contested elections, non-contested elections for directors, and "vote no" campaigns are all now "non-routine" and broker discretion is not permitted for such non-routine matters. The recent rule change has led, however, to an increase in nonvotes (Gulinello (2010)). For firms that have adopted a majority voting standard, the brokers' inability to vote without instructions from their client increases management's burden of achieving a majority. This can lead to what Hirst (2017) refers to as a frozen charter. In his sample, broker votes represented 10.4% of the outstanding shares of corporations and for those corporations, particularly those with high supermajority requirements for certain charter amendments, these firms were unable to reach those requirements without broker votes. As a result, they were unable to amend certain parts of their charters, even where directors and shareholders strongly supported such amendments and their charters were frozen.

example, ProxyVote.com, run by Broadridge Financial Solutions, is an online platform that enables shareholders to attend shareholder meetings virtually as well as vote through an app. Before each shareholder meeting that the investor is eligible to attend, ProxyVote sends an email with instructions on the process by which the investor can view proxy materials and vote. Shareholders may cast their votes online, through mail-in ballots prior to the meetings, or by telephone (voice response system) when they have indicated an interest in doing so.

As emphasized by Fisch (2017), unlike institutional investors, retail investors cannot currently provide customized voting guidelines to their broker and thus they must indicate a voting decision for each individual item on the proxy. If they fail to submit their instructions to their broker, then their votes are categorized as broker nonvotes and it is then incumbent on the broker to determine whether and how votes should be submitted on "routine" matters, where routine is determined by New York Stock Exchange Rule 452 and approved by the SEC.

There has recently been a push to increase retail investors' participation, especially through the use of digital platforms. *Enhanced broker internet platforms* ("EBIPs") are a relatively recent development that enable retail investors to submit voting instructions from their broker's website rather than having to navigate to another site to do so. As of mid-2017, 24 broker-dealers comprising 55% of all accounts held in street name offered such mailboxes. Brokerage firms and banks can also enable retail investors to receive communications and act on them through third party cloud solutions such as Google Drive, Dropbox, Evernote, Amazon Cloud Drive and Microsoft One Drive.[7] The SEC has attempted to further facilitate the increased use of these and other electronic forums through its rulemaking.[8] There has also been a push toward educating retail investors on the proxy voting process. On their investor site www.investor.gov, the SEC provides educational materials about the proxy voting process for the average retail investor. A number of issuers and shareholder organizations also provide links to this information.

[7] https://www.broadridge.com/_assets/pdf/key-statistics-and-performance-ratings-for-the-2017-proxy-season.pdf.

[8] "In recent years, a number of our proxy-related rulemakings have been spurred by the Internet and other technological advances that enable more efficient communications. For example, we have adopted the "notice and access" model for the delivery of proxy materials, as well as rules to facilitate the use of electronic shareholder forums," Securities and Exchange Commission, Concept Release on the U.S. Proxy System (2010), (page 5).

3. Data

3.1. Data Description

3.1.1. Shareholder Voting Data

U.S. retail shareholders, whether registered or beneficial, do not publicly report their shareholdings or voting decisions. As a result, it has been challenging to conduct empirical research on their voting decisions. In this study, we utilize a novel dataset of retail shareholder votes spanning the calendar years of 2015 through 2017. The data is provided to us under a confidentiality agreement by Broadridge Financial Solutions, Inc. and contains all annual or special meetings in that three-year period for firms for which it serves as the service provider, constituting 17,937 meetings for 6,782 firms over the three-year period.

For each firm meeting, the data contains the voting records, including failures to vote, for each retail shareholder account that has voting rights in the firm as of the record date of the meeting and is a beneficial owner. The data defines an account as "retail" if the account does not use Broadridge's online proxy voting product for institutional investors and financial advisers (i.e., ProxyEdge) or does not come from third-party vote agents (through Broadridge's Consolidated Data Feed). Non-US shareholder accounts are not included; rather, their votes are aggregated into a single observation for each meeting, allowing us to observe only the aggregate number of non-US retail shareholder votes cast. All data provided to us by Broadridge was first anonymized by Broadridge so that individual investor accounts are unidentifiable. Broadridge assigned a unique code, the key to which Broadridge retained, so voting can be tracked across firms and over time without revealing any data on account numbers, names, or street addresses.

A retail investor account held through a broker is associated with that broker through an anonymized broker ID, the key to which Broadridge has retained. Thus, if an individual holds an individual account with a broker, a joint account with her spouse with that same broker, and an individual account with a different broker, we observe these as three separate accounts. Each meeting-account level observation includes the firm's name and CUSIP, the record date and meeting date of the meeting, the number of shares the individual held in the firm as of the record date of the meeting, management's recommendations on each of the proposals at the meeting, the shareholder's votes on each of the proposals at the meeting, the shareholder's zip code, and the

full text of the proposal as written on the proxy statement. To further protect shareholder identity, Broadridge excludes data whenever there is only one shareholder in a zip code. We observe that only a very small number are de-identified in the data, representing 6.5% of the 112 million account-year observations. Votes to abstain are also included. In total, the data contains approximately 461 million account-meeting level observations. Proposal descriptions are contained in a separate dataset from the retail voting data, requiring a merge of the two datasets.

3.1.2. Public Firm Data

We use several sources for public firm data. We obtain shareholder proposal level data from the ISS Voting Analytics database including, for each proposal, a description of the proposal, the proposal sponsor, the total voting results, and the ISS recommendation. We obtain additional proposal level data from SharkRepellent, which duplicates some ISS data and allows for error correction, and also contains more information on the proposal sponsor and the type of proposal.

For securities data, we use data from CRSP. For each month t, we calculate the lagged annual return for the one-year period ending in month $t-1$ by compounding one-month holding period returns over the 12-month period. We calculate annual abnormal returns for that same period as the yearly return minus the value-weighted annual return from CRSP. We also calculate the one-year dividend yield as the difference between buy and hold return including dividends and buy and hold return excluding dividends.[9]

For accounting data, we use data from Compustat. We calculate Book Equity as the difference between stockholders' equity and preferred stockholders' equity, with certain substitutions in the case of missing variables, as described in Daniel and Titman (2006).[10] Book to Market ratio as the ratio between Book Equity and Market Equity, where Market Equity is the product of price (PRCC_F) and shares outstanding (SHROUT). Tobin's Q is the ratio of Market

[9] The difference between returns including and excluding dividends is described on the CRSP website as the "Income Return", available at http://www.crsp.com/products/documentation/crsp-calculations.

[10] We slightly alter the code provided on the WRDS website, available at https://wrds-www.wharton.upenn.edu/pages/support/applications/risk-and-valuation-measures/market-book-mb-ratio. Stockholders' equity uses Compustat variable SEQ or, if it's missing, the sum of Total Common Equity (CEQ) and Preferred Stock Par Value (PSTK) or, if either of those are missing, total assets (AT) minus liabilities (LT) minus minority interest (MIB). Book equity is defined as (i) stockholder's equity, minus (ii) preferred stockholder's equity, which is equal to preferred stock redemption value (PSTKRV) or, if missing, preferred stock liquidating value (PSTKL) or, if missing, preferred stock carrying value (PSTK), plus (iii) if not missing, balanced sheet deferred taxes (TXDITC), minus (iv) if not missing, the FASB106 adjustment (PRBA from the Compustat Pension Annual dataset).

Value of Assets to book value of assets (AT), in which the Market Value of Assets is defined as the sum of book value of assets (AT) and the Market Equity minus the Book Equity, as in Bhojraj et al. (2017). ROA is the ratio of EBIDTA to assets (AT), as in Brav et al. (2018). We winsorize the Book to Market Ratio, Tobin's Q, ROA, annual returns, annual abnormal returns, and the dividend yield at the 1% and 99% levels.

We obtain institutional ownership percent from the Thomson Reuters Stock Ownership dataset, which uses reports on Form 13F. We use data from 2014 to 2016, and merge with a one-year lag. We calculate market equity size quintiles using breakpoints from Fama and French.[11] We obtain the votes for the Big Three institutional investor, BlackRock, Vanguard, and State Street, from ISS Voting Analytics which we then match to either CRSP or Thomson Reuters S12 within 180 days of the meeting date, and for which CRSP or Thomson Reuters S12 had share numbers. Appendix A4 provides the details for the retrieval of the Big Three holdings data.

3.1.3. Zip Code Income Data

We obtain adjusted gross income data at the zip code level from the IRS website.[12] Since zip code data only goes to 2016, we use one-year-lagged data. We combine the IRS zip code sets for 2014, 2015, and 2016, using the version for each year which does not break out the data into Adjusted Gross Income quintiles. From this dataset, we obtain the zip code Adjusted Gross Income (variable A00100).

3.2. Merging Procedures

To combine the proposals in the ISS Voting Analytics database with those in the retail shareholder set, we merge the ISS Voting Analytics database at the meeting level with the retail shareholder data by 6-digit CUSIP, meeting date, and record date.

We merge at the proposal level using the order of the proposals within a meeting and their textual descriptions from the retail shareholder voting data and ISS Voting Analytics. Appendix A1 describes the proposal matching process in detail. Within matched meetings, the retail voting sample and ISS Voting Analytics have roughly identical proposal slates, with one important exception: for 72% of meetings with director elections, the retail voting sample reports the number

[11] Available at Ken French's website at: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.
[12] Available at https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-statistics-zip-code-data-soi.

of returned votes on the director elections but not the actual votes on each individual director. As a result, we exclude these director election proposals from analyses of substantive voting decisions but do include them in analyses of the decision whether or not to cast a vote. Otherwise, we find that the two datasets have essentially identical proposal slates within matched meetings. The remaining minor inconsistencies are in how the two sources treat withdrawn proposals, other minor items that appear on the proxy ballot such as checkboxes to indicate a lack of shareholder conflict of interest, as well as a handful of proposals that appear to be erroneously missing from ISS Voting Analytics. Appendix A2 provides additional information regarding erroneous ISS Voting Analytics information that we found in the course of matching the retail voting proposal data to ISS Voting Analytics.

We categorize the ISS Voting Analytics proposals into categories using its general descriptions field, and for certain descriptions, the full proxy statement text. We then merge additional proposal-level information from SharkRepellent. Unlike ISS Voting Analytics and the retail voting data, SharkRepellent data is unordered, so we match by voting results and, using text matching, by proposal categories. Appendix A2 sets forth our method for matching.

We merge the retail shareholder voting data with CRSP at the 6-digit CUSIP-month level, with the record-date month in the shareholder voting data matching the data month for CRSP. We restrict the analysis from this point onwards to firms in CRSP with common share codes 10 or 11, with a valid share price and shares outstanding information as of the month of the record date. Following the merging with CRSP and ISS Voting Analytics and dropping of certain rows, the final dataset has 53,946 proposals from 10,066 meetings, with 4,725,390,872 account-proposal level observations.

Using linking procedures from the Compustat/CRSP Merged Dataset, which links Compustat gvkeys to CRSP permnos, we merge at the firm level with Compustat, so that each meeting merges with the last Compustat fiscal that ended on or before the record date. We merge using 6-digit CUSIP with the Thomson Reuters stock ownership; each observation is merged with Thomson Reuters data from the calendar year prior. We merge the IRS zip code income data with

the retail shareholder data at the zip code-calendar year level, lagging the zip code data by one year since data was not available for 2017 at the time of our analysis.[13]

Table A1, Panel A, in the Online Appendix summarizes the percent of firms in the retail sample that we are able to match to CRSP in each of the three-year sample periods. We report coverage by NYSE size quintiles. We achieve coverage of 86% in 2015, 89% in 2016, and 90% in 2017, with higher coverage for larger firms. Of the firms in CRSP that do not have retail voting data, many are small firms that also do not appear in ISS Voting Analytics. Table A1, Panel B provides the coverage of the retail shareholder voting data of the intersection of ISS Voting Analytics and CRSP. The overall coverage is high at 96% in 2015, 99% in 2016, and 98% in 2017, with higher coverage for larger firms. Finally, we also report on the intersection of institutional ownership in the firms covered in the retail data. To this end, we merge the retail voting data with institutional 13F ownership data from Thomson Reuters at the 6-digit CUSIP-year level. Table A1, Panel C provides the coverage of retail voting firms in CRSP by institutional ownership quintile. For the subset of firms in CRSP that also appear in the Thomson Reuters 13F data, we achieve a high coverage of 95%, 96%, and 97%, respectively, in each of 2015-2017.

4. Descriptive Statistics

4.1. Illustrative Example of Retail Voting

To give the reader an initial impression of the scope of the retail voting data we present detailed information on voting derived from an anonymized issuer's annual meeting during our sample period. The meeting included a wide range of proposals for investors to vote on. It thus allows us to highlight variation in voting which we later explore in more detail. Shareholders were asked to vote on the election of director nominees, an advisory vote to approve executive compensation, ratification of the independent auditors, and additional shareholder proposals.[14]

Table 1 presents three key aspects of the voting process. Panel A provides a summary of the methods of proxy delivery to retail shareholders. Firms and shareholders have choice regarding how materials are delivered to shareholders. Accounts choose to receive either (i) Hard Copy, (ii)

[13] Thomson Reuters has since added its data for year 2017. We intend to update the analysis using 2017 data in a future draft.

[14] The number of total management and shareholder proposals was between nine and fifteen. We report results for nine of them in randomized order to preserve the issuer's anonymity.

E-Delivery, or (iii) the company Default delivery method. Firms may choose to send the (a) Hard Copy or (b) Notice and Access, or may choose a mixture of the two (Notice to some shareholders, Hard Copy to others). Shareholders receive their choice of materials, or, if they did not select Hard Copy or E-Delivery, they receive the company's choice. We summarize the following four options of what the shareholder receives, as coded in our retail voting data: if the shareholder chooses Hard Copy, or if the shareholder chooses Default and the company chooses Hard Copy, then a complete copy of proxy materials including the proxy statement, annual financials, and ballot or vote instruction form is sent to the shareholder via the postal service. If the shareholder elects E-Delivery, links are delivered via e-mail to the shareholder to direct the shareholder to either the online voting website or to brokerage firms' investor mailboxes for voting. Consents to electronic delivery are typically made through a broker-dealer's website. Once made, they are applied to all proxy information distributions for securities in that individual's account. If the shareholder chooses Default and the firm chooses Notice and Access, then it mails the shareholder a notice to announce the meeting with information on how to get complete packages of proxy materials or use the service provider's online website for voting. Under the rules for notice and access, requests for Hard Copy can be made by going to the Internet voting website, calling a toll-free number, or sending a request by e-mail.

The Hard Copy delivery method is associated with accounts that own a larger number of shares per account and, importantly, are more likely to cast a vote as indicated by the rightmost column, especially those accounts who select it. For example, accounts receiving delivery by Hard Copy own an average of 1,416 (account choice) and 2,539 (firm choice) shares with a voting response rate of 73% and 33.2%, respectively, whereas accounts receiving material via E-Delivery or Notice own 506 and 326 shares on average, and vote at a much lower rate of 20.4% and 7.3%, respectively. In all, retail shareholders at this issuer hold over one billion shares, comprising roughly one-third of shares outstanding, with an overall response rate of 31.2%, consistent with the response rates in the broader sample that we document below. The bottom of panel A provides information on the voting method. Two features are noteworthy. First, shareholders that did not vote hold 68.6% of the total retail votes. These shareholders, not surprisingly, own 562 shares per account, on average, lower than other accounts that participate in the voting. Second, among the shareholders who choose to vote, voting by hard copy accounts for about one half of all retail votes, followed by use of the internet.

Table 1, Panel B provides the voting results for items on the ballot. For each proposal we report the corresponding management and ISS recommendations, where "F" indicates voting for a given proposal, "N" indicates voting no/against a proposal, and "A" indicates abstaining from a vote. The column "Retail Votes" provides the percent of votes cast by retail shareholders, and within the votes cast, the percent of votes for and against. Consider first the votes cast for the election of the director nominees. As described above, this meeting is one in which the data does not provide the breakdown of retail votes in favor or those withheld per director. Hence, we can only report the percent of votes cast by retail investors – which in this case was 30.3% of the 1.242 billion retail shares. This low rate of participation compares to a much higher percentage of over 60% of votes cast by all shareholders which also includes retail votes (unreported).

We report the retail voting outcomes for the remaining proposals. The advisory vote to approve executive compensation, known as "say on pay," received support from 88.5% of retail shareholders, similar to the 86.9% at the issuer's 2016 meeting. ISS supported the proposal in 2016 but recommended against it in 2017, but retail support remained relatively constant, indicating a lack of influence of ISS over retail voting behavior. In contrast, in unreported results, we find that the fraction of all shares voting in support of the proposal in 2017 is approximately 70%—strikingly low relative to the 92.1 percent average for say-on-pay proposals for firms in the Russell 3000—as compared to approximately 90% for the ISS-supported proposal in 2016.[15] Hence, the negative ISS recommendation appears to be associated with a large swing in voting by shareholders other than retail.

The remaining proposals are shareholder-sponsored. Retail shareholders tend to vote along management's recommendation against all of these proposals, in stark contrast to the large variation in support among all shareholders (unreported).

Last, we report in panel C of Table 1 information on the range of voting decisions in the sample. As noted above a large number of shares were not voted. Slightly more than 1.5 million accounts—comprising 86.1 percent of all retail accounts—did not vote, accounting for 68.8 percent of retail shareholder votes.[16] Although we count over 15,000 different permutations of

[15] See 2017 Proxy Season Review: Compensation, by Subodh Mishra, Institutional Shareholder Services, available at: https://corpgov.law.harvard.edu/2017/10/06/2017-proxy-season-review-compensation/.

[16] This non-voting rate is slightly higher than that reported in Panel A since some shareholders returned their ballots but did not indicate a vote for any proposals.

votes cast across all of the proposals, 20.8 percent of retail votes voted entirely with management. The remaining permutations comprise a small fraction of votes.

4.2. Summary Statistics

Table 2 provides a description of proposals included in the retail voting data. The number of proposals increases from 16,595 in 2015 to 17,505 in 2016 to nearly 20,000 in 2017. Roughly 200 each year are environmental or social proposals. Shareholder-sponsored proposals account for a small fraction of all proposals at about 500 per year. Of management-sponsored proposals ISS supports roughly 90% each year whereas ISS supports roughly 75% of shareholder-sponsored proposals each year.

Table 3, panel A, provides a description of the retail shareholder accounts in the sample. For each account-year, we add up the reported equity stakes on record dates to produce account-year level proxy for the portfolio holdings. We also use account zip codes to merge in zip-code level IRS income data. Accounts hold roughly four securities on average, and the median account holds two securities, similar to the evidence in Barber and Odean (2000). Panel A shows a large spread between the median account (roughly $13,000 in value) and the average account (roughly $130,000 in value). The account dividend yield is 2%, on average, for each year in the sample. We calculate yearly market abnormal return for an account as the buy and hold return on the securities in the account, assuming the account held all securities for the past year. We then deduct the CRSP value weighted index return. The market adjusted abnormal return of accounts in the sample averages to near zero in the aggregate. Finally, the accounts come from substantially higher-income zip codes than the national average, based on zip code adjusted gross income from the IRS website.

In Panel B we report retail investor characteristics by sorting accounts into quintiles by dollar value. The lowest quintile account value is $629, holding, on average, fewer than two securities, whereas the top quintile account value is nearly $600,000, holding ten securities on average. The market adjusted abnormal return increases monotonically as we move from the first to the fifth quintile. Dividend yield remains constant at two percent. Next, although we do not observe the entire trading records of these accounts, we proxy for how frequently accounts are turning over their assets based on the rate at which accounts invest and divest in portfolio firms. An account's Firm Purchase Rate is the proportion of firms it currently owns that were added to

the portfolio in the past year and is given by $FPR_{at} = \frac{N^{new}_{a,(t-1,t)}}{N_{at}}$, and Firm Sale Rate is the account's proportion of firms owned last year that were removed from its portfolio in the past year and is given by $FSR_{at} = \frac{N^{sold}_{a(t-1,t)}}{N_{at-1}}$. For the sample from 2015-2017, we observe turnover estimates for 2016 and 2017.[17] In 2016, 35% of the firms in an account portfolio are new additions (29% in 2017), and 30% (26% in 2017) of firms the previous year were sold. Finally, voting participation increases from 3% at the smallest quintile to 16% in the largest account value quintile. Figure 2, panel A, displays some of these results.

Table 4 provides information at the firm-level on retail shareholder ownership. Retail ownership is higher for the smaller companies. Overall retail ownership is 30%; domestic retail ownership is 26%; and average ownership in the smallest quintile of companies is 40%. The table reports the average and median number of investors per firm in thousands. Unsurprisingly, larger firms are owned by more investors. While the median firm in the bottom size quintile is held by roughly two thousand accounts, the median firm in the top size quintile is held by roughly 120 thousand accounts each year. Figure 2, panel B, displays these results. Firms with a higher dividend yield also tend to be held by more investors. Online Appendix Table A2 includes a breakdown of ownership by industry. Telecommunications firms tend to be more widely held than other industries, perhaps reflecting the size of some of the major technology firms. Utilities and energy also see high ownership likely reflecting their high dividend yield.

Table 5 looks at voting at the ballot level, since voters tend to submit either a full ballot or not return one at all. This table exploits the fact that, unlike for firm overall vote totals reported on Form 8-K, for the retail voters we can observe the entire ballot cast. We describe retail voting results at two levels of aggregation: by retail shares, which is weighted towards the largest shareholders and informs more about firm outcomes, and by retail accounts, which are more reflective of the small retail accounts that comprise the bulk of accounts but a minority of shares.

Retail voters cast 32% of shares owned, reflecting the decision of only 11% of accounts to participate. 76% (59%) of shares cast (accounts participating, respectively) support management

[17] For those individuals with an account holding shares in year t but not in year $t+1$ (or $t-1$, respectively), where the firm itself is in the sample in year $t+1$ ($t-1$, respectively), we impute that the account holds zero shares in $t+1$ ($t-1$, respectively), and use that imputation for our portfolio turnover calculations.

on all proposals in a ballot, showing that retail voters are likely to oppose management on at least one proposal, and small retail accounts even more so. Even when a meeting is entirely comprised of management proposals, 30% of retail ballots, by account, contain at least one deviation, and that number rises to nearly 50% when there is a shareholder proposal on the ballot. Retail accounts deviate 33% of the time when there is full agreement between management and ISS, and 46% of the time when there is at least one disagreement.

Table 6 contains additional breakdowns of voting results. Percent Cast reflects the proposal-level turnout in which the shareholder voted for or against, defined as the fraction of outstanding shares voted either For or Against on a proposal.[18] Percent For represents support, defined as the fraction of votes For divided by the total cast For and Against. The left-hand set of columns, labeled All Votes, represents the total voting results as reported by ISS Voting Analytics and SharkRepellent. The middle set of columns, labeled Retail Votes, represents the total retail voting results from the retail shareholder sample. The rightmost set of columns, labeled Retail Accounts, represents the retail voting results weighting each account equally instead of by number of shares.

Panel A shows voting by sponsor. Non-retail shareholders are far more likely to cast votes, as can be inferred from the 78% of all shares that are cast. Retail shareholders, on the other hand, make a selection on only 30% of shares owned. These votes were cast by 11% of retail accounts, indicating that retail shareholders with small equity stakes are less likely to cast votes. As measured by shares owned, retail shareholders are somewhat less supportive of management proposals than non-retail, and substantially less supportive of shareholder proposals. But small retail accounts are less opposed to shareholder-submitted proposals. The variation in turnout and support by firm size can be seen in Panel B of Table 6. Retail shareholder turnout decreases with firm size from 35% for firms in the smallest size quintile to 27% for the largest quintile, whereas turnout by all shareholders increases with firm size from 72% in the smallest quintile to 78% in the largest. Retail shareholders tend to support management proposals to the same extent as the broader shareholder universe, although support is lower for small retail accounts holders. The

[18] Because Tables 6 and 7 are at the proposal level and not the full ballot level, for these tables we define the Percent Cast as the portion that make a selection, rather than the portion that merely submit a ballot regardless of whether a for or against choice was made on the proposal in question, as we do later in the paper. Because almost all cast votes make a selection, the two metrics are highly similar and reflective of each other.

bottom part of Panel B reports on shareholder proposals. The fraction of shares cast by retail shareholders declines from a high of 41% for firms in the smallest quintile to 26% for firms in the largest size quintile. Shareholder proposals in small firms receive a substantial degree of retail and non-retail support but support declines at a higher rate for retail shareholders as we move to larger firms. Importantly, small account shareholders tend to support shareholder proposals more so than large account shareholders and this difference is largest in proposals submitted at large capitalization firms.

Panel C shows retail voting by proposal category. Retail turnout is highest for management proposals regarding mergers and acquisitions (at a 45% turnout rate), whereas for non-retail turnout remains fairly similar across categories. Retail support for M&A transactions is higher than for other management proposals, as is non-retail support. As in Panel A, shareholder proposals (environmental, social, and governance) receive weaker support from retail shareholders relative to the broader universe of shareholders. The support rates measured at the retail account level are higher than those reported when support is measured at the shareholder level. This shows that for all three shareholder proposal categories, the small account retail shareholders provide stronger support than the larger account shareholders.

Next, Panel D of Table 6 shows voting split by sponsor and management and ISS recommendations. The overall electorate shows a large difference in voter support between management proposals that are supported by ISS and those opposed by ISS. We find a more muted variation in retail shareholder support between ISS-supported and ISS-opposed proposals, possibly reflecting the greater access to ISS recommendations by institutional shareholders. The difference is even starker within shareholder proposals. For the overall electorate, management-opposed proposals supported by ISS have 37% support and those opposed by ISS have 8% support. But for retail voting, that gap is smaller: 18% in favor of those supported by ISS to 14% in favor of those opposed by ISS. Consistent with the statistics in Panel B, small retail accounts are more supportive of shareholder proposals than are the overall retail vote, but still show little preference for ISS support versus opposition, with a gap of 3% (29% to 26%) for retail accounts.

Next, we report how retail voting varies by voter and firm characteristics in Table 7. We split the retail voting sample by above-median and below-median account value for the year. Low-value accounts are highly unlikely to vote. However, conditional on voting, low-value accounts

are far more likely to support shareholder proposals, and less likely to support management proposals relative to high account value shareholders. The rightmost columns in the table provide information on turnout and voting by firm size. Firms in the smallest size tercile see far more support for shareholder governance proposals and less support for shareholder social proposals. Overall, larger firms receive more support for management proposals and less support for shareholder proposals.

The Online Appendix provides additional evidence linking other shareholder and firm attributes to retail voting. Table A3 compares frequent to infrequent voters. We limit the comparison to accounts that have at least five voting opportunities over the 3-year sample and that voted at least once, and classify those with below-median voting rates as infrequent and with above-median voting rates as frequent. The median voting rate in this group was 0.5. The voting behavior of infrequent voters is of special interest, since, should regulatory changes be made that promote increased retail participation, the preferences of these voters may take on additional weight. We find that, whereas frequent voters tend to vote consistently across all proposal types, infrequent voters cast their ballots for major transactions far more than they do for other proposal types. Infrequent voters are also far more supportive of all three types of shareholder proposals than are frequent voters. Table A4 compares across account values and firm sizes. Large firms see lower turnout and higher management support across both large and small shareholders.

5. Influence of Retail Vote on Voting Outcomes

In this section, we ask whether retail shareholder participation and voting preferences are important economic determinants of voting outcomes. We ask whether shocks to either retail participation or, conditional on participation, shocks to their voting preferences would have altered observed outcomes. We document the number of failed (successful) proposals that now pass (fail) and then compare whether the impact of changes to retail participation and voting differs from similar shocks to other non-retail voters that serve as benchmark counterfactual scenarios. As we show, the variation in outcomes, both at the extensive and intensive margins, are as important as those of other voters that we consider.

We begin by considering the scenario in which retail participation is set to zero and ask whether the decision not to participate has any impact on voting outcomes. We compare the resulting change in outcomes to a similar shock to participation to two other groups of voters: all

non-retail shareholders, and the "Big Three" institutional investors, BlackRock, Vanguard, and State Street. In our second set of tests we condition on observed participation and then evaluate several counterfactual voting rules to retail shareholders. We compare the resulting change in outcomes to the change in outcomes that would result from counterfactual voting by the Big Three institutional investors. The subset of proposals that we use in both tests was constructed as follows. First, we removed auditor ratifications, director elections, and say on pay votes, which tend not to be contested. Second, we removed proposals for which the voting base was outstanding shares, since removing any group of voters mechanically causes these proposals to fail.

Table 8, Panel A, provides evidence for how many proposals would have different outcomes if a group's participation rate were to go to zero. We pull together management and shareholder proposals. Columns (1) and (2) provide the number of passing and failing proposals, respectively. Under the hypothetical that the voting rate for a given group goes to zero, columns (3) and (4) reflect the number of proposals whose outcome has been flipped, while columns (4), (5), and (6) provide the number of proposals whose final percentage counts move by five, ten, and twenty percent, respectively. The consequences for the change in retail voters participation is given in the first row in the panel. Setting retail participation to zero, and thus the removal of the average retail voter, would have led to 54 (37) passing (failing) proposals to switch an outcome and fail (pass). The second row, in which we force the Big Three participation to zero, shows that the resulting change in voting outcomes is on par with the removal of the retail shareholders. In the third row in Panel A, we set the participation of the entire non-retail voter group to zero and thus let retail investors decide on the outcomes of these proposals. This counterfactual leads to more flipped proposals, reflecting the fact that non-retail voters comprise the bulk of shares cast, and that the retail vote often substantially diverges from the non-retail vote.

Table 8, Panel B, provides our second set of counterfactual tests in which we condition on retail participation and then ask how many close proposals would have different outcomes if retail voters (or Big Three voters, respectively) were to vote with different proposal support rates. Specifically, each row shows how many proposals outcomes would flip if a subset of retail voters (or Big Three Voters, respectively) voted like the following shareholders: (i) retail voters; (ii) non-retail voters; (iii) Big Three voters; (iv) all in favor; or (v) all opposed. To ensure a consistent comparison across the two voting groups, we determine the minimum of the number of retail votes and the number of Big Three votes in each proposal and then use this number of votes to assess

the consequences of the change in voting preferences. We report the results separately for shareholder and management proposals and limit to contested elections by keeping only those proposals whose final overall vote result was between 40 and 60% of the corresponding passing threshold. Columns (1) and (2) contain the number of passing and failing proposals in the subset. Similar to Bach and Metzger (2019), we find that in close votes management tends to win a disproportionately high fraction of both management and shareholder proposals. Columns (3) and (4) (or (5) and (6), respectively)) reflect the number of proposals whose outcome is changed under the hypothetical that retail voters (or Big Three voters, respectively) alter their voting rate.

The main takeaway from Panel B is that the consequences of altering retail shareholder voting preferences are of the same magnitude as forcing the Big Three to alter their voting preferences. For example, were retail shareholder to vote like all other non-retail shareholders, 17 shareholder proposals that had actually failed would now pass and 11 management proposals that had passed would now fail. When we repeat the test for the Big Three and ask how voting outcomes would change had they voted like all other non-retail shareholders we find similar results for shareholder proposals, consistent with the idea that both groups tend to support management more than the average voter. We do see, however, that for management proposals the change in the Big Three votes result in six (three) proposals that now flip from a pass (fail) to a fail (pass). Since for the retail shareholder group 11 management proposals that had passed would fail, this indicates that retail investors provide, on average, stronger support for the management relative to the Big Three.

6. Retail Decision to Participate

We now turn to study the determinants of voting turnout. Since retail turnout is neither zero nor universal, we hypothesize that retail voters' decision to cast a vote trades off expected benefits with costs to voting.[19] We make the following predictions:

1) Since any benefit to voting likely scales with stake size—because a bigger stake means a larger probability of affecting the outcome, or a bigger stake means more benefit from a higher stock value—turnout should be higher when the stake size is higher.

[19] We provide a simple framework to organize our predictions for retail turnout in Appendix A5.

2) If retail voters are engaged in a monitoring role, then turnout should be inversely related with firm performance.
3) Since the benefits of voting scale with stake size, the stake size should interact with performance. Benefits from participation are likely higher when the vote is more controversial.
4) Turnout should be higher when the account's opportunity cost of voting is lower. We proxy for opportunity cost with the account's zip code labor income.

We evaluate the choice of whether to cast a vote at the account-meeting level, and estimate specifications of the form:

$$Cast_{amct} = \alpha + \beta_1 X_{ct} + \beta_2 Z_{mct} + \beta_3 W_{amct} + \theta_t + \theta_{Ind} + \varepsilon_{amct} \quad (1)$$

Where a indexes accounts, m indexes meetings, c indexes firms, and t indexes years. The dependent variable, $Cast_{amct}$, is equal to 1 if the account cast a ballot and 0 otherwise, multiplied by 100. X_{ct} is a vector of firm-level variables. These include, yearly abnormal return measured over the period beginning 13 months prior to the record date and ending one month prior to the record date, log market equity, a binary for dividend payout, Tobin's Q, and Return on Assets. Z_{mct} is a vector of firm-meeting-level variables. Whether ISS opposed any proposal on the ballot, whether there were any shareholder proposals on the ballot, and the number of proposals on the ballot. W_{amct} is a vector of account-level variables. These include, log stake size, log rest of account size, and log zip code income. θ_t and θ_{Ind} are year-month and industry fixed effects. We multiply $Cast_{amct}$ by 100 so all regressions are on the same scale. All regressions in this section are clustered at the firm level, and we weight observations so that each account-year is weighted equally.

Table 9, displays the results estimating retail shareholder turnout. We begin with a cross-sectional analysis in columns (1) through (4), in which we include industry and year-month fixed effects. In column (5), we replace industry fixed effects with firm fixed effects, capturing how a firm's turnout, as compared to its three-year average, is associated with covariates for that firm (as compared its three-year average). The inclusion of firm-fixed effects narrows the scope of omitted variables and, in particular, captures all time-invariant firm omitted variables. To the extent that firm-level variables are correlated across time and shareholders consider events prior to the most recent year, then these regressions underestimate the true coefficients. In column (6), we include account fixed effects, looking within an account both across time and across the securities in its

portfolio. In column (7), we include account-year fixed effects, focusing exclusively on the comparison between different securities in an account's portfolio. We demean each of our right-hand side variables other than yearly abnormal returns, but including dummy variables, by the average across all firms in the sample. We do so for easier interpretation of the regression intercept as the voting rate for a firm with zero abnormal returns and average values for all other variables and dummies. For such a such a firm column (1) shows that 8.2% of investors are expected to vote.

Columns (1) and (2), in which include firm level characteristics, suggest that firms with stronger performance experience higher turnout, but this turns out to be misleading. Larger accounts tend to have higher returns and to turn out more often (see Table 3); once we control for the account stake size, the relationship between performance and turnout is insignificant. In fact, with account-year fixed effects, the specification in columns (7) and (8) show that accounts turn out more often for the worse-performing firms in their portfolio. Consistent with shareholder turnout serving a monitoring function on the firm, participation is strongly inversely related to an account's portfolio firm ROA and its Tobin's Q. Shareholders are also likely to turn out for meetings that face controversy (as proxied by ISS opposition on the ballot), again consistent with a monitoring role.

As expected, the size of a retail investment is consistently positively associated with participation. Across all specifications shareholders with larger stakes are more likely to turn out (a one standard deviation increase is associated with a 3.3 percentage point, or 40%, increase in voting), and, within an account-year, the shareholder is more likely to turn out for the larger stakes in the portfolio (a one standard deviation larger stake is associated with a 1.1 percentage point, or 13%, higher likelihood of voting). We also observe that turnout decreases with zip code income, consistent with the opportunity cost of voting increasing with labor income. A one standard deviation increase in zip code income is associated with 0.83 percentage points lower voting rates, or 10.1%.

Although in the cross-section, larger firms have lower turnout, the within account analysis in Column (7) indicates that the retail decision to participate does not hinge on overall firm size, suggesting that larger firms have lower-propensity-to-vote shareholders. Larger accounts (in dollars) are more likely to turn out than smaller accounts at a firm even controlling for stake size.

This is consistent with the existence of a fixed cost of voting on any security, so that shareholders who take the time to vote are likely to vote on multiple of their securities.

We further examine whether, as expected if the benefits of voting increase with poor performance and scale with ownership, the relationship between performance and turnout is highest for those with large stakes. Table A5 included in the online Appendix assesses whether the previous evidence linking turnout and firm performance varies by the stake size. Specifically, we follow the specifications reported in columns (4) through (7) adding in stake size interaction terms, interacting an account's log stake value with three proxies for firm performance, yearly abnormal return, Tobin's Q, ROA, as well as the firm log market equity. We find that the negative relationship between performance and turnout is strongest for larger stakes, again consistent with our prediction that benefits of voting scale with stake size. Figure 3 displays the result linking the sensitivity of retail turnout to performance by stake size. We first estimate a regression of retail turnout on quintiles of return on assets interacted with terciles of log stake value, firm and ballot characteristics, and year-month, industry, and account-year fixed effects. We then plot the estimated coefficients on the interaction term. Although accounts always turn out more for their larger stakes, the turnout difference is significantly more pronounced for poorly performing firms.

Finally, an additional factor that may affect turnout is the information materials that the account receives about the upcoming vote. Using a differences-in-differences-in-differences approach, we examine in Appendix A.6 whether the information materials have a causal effect on turnout and find that receiving full information materials causes a three percentage point increase in turnout, or a roughly 60% increase for the affected group.

7. Support for Management and Shareholder Proposals

In this section we turn to analyzing support for management and shareholder proposals, conditional on casting a ballot. We conduct the analysis both at the retail account level and at the meeting level to address how firm-level variables affect the firm's overall voting performance.

7.1. Account-Level Evidence

We estimate the following main specification:

$$WithMGMT_{apct} = \alpha + \beta_1 X_{ct} + \beta_2 Z_{pct} + \beta_3 W_{apct} + \theta_t + \psi_{PropCat_p} + \theta_{Ind} + \varepsilon_{apct} \quad (2)$$

Where a indexes accounts, p indexes meetings, c indexes firms, and t indexes years. The dependent variable, $WithMGMT_{apct}$, is the number of votes voted in line with management recommendation divided by the number of votes cast For or Against, multiplied by 100. We multiply the dependent variable by 100 so all regressions are on the same scale. X_{ct} is a vector of firm-level variables, consisting of yearly abnormal return—measured over for the period beginning 13 months prior to the record date and ending one month prior to the record date—log market equity, a binary variable for dividend payout, Tobin's Q, and Return on Assets. Z_{mct} is a vector of firm-proposal-level variables. These include whether ISS opposed any proposal on the ballot, whether there were any shareholder proposals on the ballot, and the number of proposals on the ballot. W_{amct} is a vector of account-level variables. These include log stake size, log rest of account size, and log zip code income. $\psi_{PropCat_p}$, θ_{Ind}, and θ_t are proposal category, industry, and year-month fixed effects. The dependent variable, $WithMGMT_{apct}$, equals 100 if the account votes for a management proposal or against a shareholder proposal, and 0 if it votes against a management proposal or for a shareholder proposal. All regressions in this section are clustered at the meeting level, and we weight observations so that each account-year is weighted equally. In this section, we exclude director election votes and say-on-pay, in addition to auditor ratifications and meeting adjournments.

Table 10 displays the results estimating Equation (2). We begin with a cross-sectional analysis in columns (1) through (4), in which we include industry, proposal category, and year-month fixed effects. In column (5), we replace industry fixed effects with firm fixed effects, capturing how a firm's management support, as compared to its three-year average, is associated with covariates for that firm (as compared its three-year average). The inclusion of firm-fixed effects narrows the scope of omitted variables and, in particular, captures all time-invariant firm omitted variables. As before, to the extent that firm-level variables are correlated across time and shareholders consider events prior to the most recent year, then these regressions underestimate the true coefficients. In column (6), we include account fixed effects, looking within an account both across time and across the securities in its portfolio. In column (7), we include account-year fixed effects, focusing exclusively on the comparison between different securities in an account's portfolio. As in the preceding section, we demean each of our right-hand side variables other than yearly abnormal returns, but including dummy variables, by the average across all firms in the

sample for easier interpretation of the regression intercept as the voting rate for a firm with zero abnormal returns and average values for all other variables and dummies. Column (1) shows that for such a firm, 75.5% of retail accounts vote with management.

We draw the following three conclusions from Table 10. First, retail voters punish the managements of poorly performing companies, with a strong sensitivity to abnormal returns, return on assets, and Tobin's Q. Retail shareholders oppose management at a firm with one standard deviation lower abnormal returns by 2.0 percentage points, or 8% of total opposition. They similarly oppose management at a firm with one standard deviation lower return on assets (or Tobin's Q) by 1.6 (0.8) percentage points, or 6.6% (3.2%) of total opposition.

Second, we observe that ISS opposition to management is associated with lower retail support for management, by 2.9 percentage points (or 12% of opposition). Third, larger stakes tend to vote more in favor of management. This may be a product of portfolio selection—those who are most in favor of a firm's management may be more likely to buy a larger stake in it.

We further examine whether the propensity to support the management varies with the stake size in Table A6, included in the online Appendix. We follow the specifications in columns (4) through (7) of panel A but with the inclusion of stake value interaction terms. We find that shareholders with large and small stakes respond similarly in their voting decisions to firm performance and ISS recommendations. One key difference, however, is that shareholders with smaller stakes are far more likely to support shareholder proposals and oppose shareholder proposals relative to shareholders with larger stake size. We present this finding in Figure 4. Specifically, we first estimate a regression of voting support on quintiles of log stake value interacted with a binary variable for shareholder proposals, firm and ballot characteristics, and year-month, industry, and proposal category fixed effects and then plot the estimated coefficients on the interaction term. As stake size increases from the smallest stake size to the largest we see a decline in support for shareholder proposals and a commensurate increase in support for management proposals.

7.2. Meeting-Level Evidence

All regressions so far have focused on disaggregated account decisions, but we are also interested in aggregate proposal results, to address how firm-level variables affect the firm's

overall voting performance. We therefore aggregate retail account up to the meeting level so that each meeting is weighted equally (rather than weighting each account-year equally), which also permits comparison with non-retail voters. For a proposal p, we define the variable $WithMGMTPercent_{pct}$, as follows:

$$WithMGMTPercent_{pct} = \frac{\sum_a WithMGMT_{apct}}{\sum_a WithMGMT_{apct} + \sum_a AgainstMGMT_{apct}}$$

It is the percent of votes that are cast as For votes (on management proposals) or Against votes (on shareholder proposals) out of the total votes cast For and Against, multiplied by 100. We estimate regressions of the form:

$$WithMGMTPercent_{pct} = \alpha + \beta_1 X_{ct} + \beta_2 Z_{pct} + \theta_t + \psi_{PropCat_p} + \varepsilon_{pct} \qquad (3)$$

X_{ct} is a vector of firm-level variables, Z_{pct} is a vector of firm-meeting-level variable, whether ISS opposed any proposal on the ballot. $\psi_{PropCat_p}$, and θ_t are proposal category, and year-month fixed effects. We weight observations so that each firm meeting is weighted equally, and, as before, cluster at the firm meeting level.

Table 10 reports regression results estimating Equation (3). In Panel A, the first three columns contain results for Big Three voting, and the final three columns contain results for retail voting. Columns (1), (2), (4), and (5) include industry, proposal category, and year-month fixed effects, whereas Columns (3) and (6) substitute firm fixed effects for industry fixed effects. The sample for these regressions excludes director elections and say-on-pay votes. In Panel B, we divide the sample by proposal categories. The first four columns contain results for the Big Three voting, and the final four columns contain results for retail voting. All columns include industry, proposal category, and year-month fixed effects.

As before, we see a striking sensitivity to performance among retail voters. An otherwise average firm experiencing a -37% abnormal return (roughly one standard deviation below zero) can expect its retail opposition to management to increase from 13.2% to 15.3%. On the other hand, although the Big Three votes show some sensitivity to a firm's performance as measured by

its return on assets, its overall sensitivity to performance is far less than that of retail voters.[20] Figure 5 shows the difference in sensitivity to abnormal returns—retail voters are particularly opposed to management at the worst-performing quintile of firms. These results are consistent with retail voters serving a monitoring role in poorly performing firms.

An even more striking difference is the sensitivity to ISS opposition. ISS opposition to management is associated with a 4.5% difference in retail voting outcomes, but a 35% difference in Big Three voting outcomes. Since almost all retail voters likely do not observe ISS recommendations prior to voting, the retail coefficient is likely driven by underlying factors of the proposal. Given how sensitive retail voters are to other factors, these results are consistent with ISS recommendations influencing Big Three voting (Iliev and Lowry (2015), Malenko and Shen (2016)).

Finally, Table 10, Panel B splits the sample by proposal type. The results across proposal categories are broadly similar, though director elections and say-on-pay vote receive more support. Shareholder proposals are more controversial, receiving support closer to 50%. Note that because there are fewer shareholder proposals, standard errors are higher and coefficients tend to be insignificant as a result. Big Three voters oppose shareholder proposals more at large firms.

8. Conclusions

In this paper we study U.S. retail shareholder voting using a detailed sample of anonymized voting records over the period 2015-2017. We find that retail shareholders are an influential voting bloc as compared to the Big Three mutual asset management firms. Retail behavior is consistent with a costly monitoring role in that they turn out more often for the largest stakes in their portfolio and for securities in their portfolio that are performing worse and that have contested proposals on the ballot. We also find that retail support management far less in their voting choices when the company has performed poorly. Retail differ substantially from non-retail and the Big Three in how they vote, with far greater sensitivity to recent performance and far less sensitivity to ISS recommendations. We also document heterogeneity among retail shareholders. Large shareholders are highly influential. They turn out at higher rates and strongly oppose shareholder

[20] In unreported results, we test and find that the coefficients on ROA are not significantly different for the Big Three and retail, whereas the coefficients on portfolio firm's abnormal returns are highly significantly different. The coefficients on Tobin's Q are marginally significantly different across the two groups of shareholders.

proposals. Smaller shareholders, on the other hand, turn out at low rates but tend to provide stronger support shareholder proposals. Retail shareholders are more influential at smaller firms, where they hold a larger proportionate share, their turnout is higher, their support for management is lower. Our results demonstrate that retail shareholders can potentially serve an important role in the monitoring and governance of firms, and one that institutional investors may not perfectly replicate. Ultimately, we conclude that in contrast to the common caricature of retail shareholders as uninformed and apathetic, these investors can and do provide meaningful feedback to firms through the voting process.

References

Bach, Laurent and Daniel Metzger, 2019, How Close Are Close Shareholder Votes?, forthcoming *Review of Financial Studies*.

Barber, Brad, and Terrance Odean, 2000, Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors, *The Journal of Finance* 55(2), 773-806.

Bebchuk, Lucian and Scott Hirst (June 2018), Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy, *Columbia Law Review* 119, forthcoming.

Bhojraj, Sanjeev, Partha Sengupta, and Suning Zhang, 2017, Takeover defenses: Entrenchment and efficiency, *Journal of Accounting and Economics* 63(1), 142-160.

Black, Bernard S., 1992, Agents Watching Agents: The Promise of Institutional Investor Voice, *UCLA Law Review* 39: 811-894.

Bolton, Patrick, Tao Li, Enrichetta Ravina, and Howard Rosenthal, 2019, Investor Ideology, working paper Columbia University.

Brav, Alon, Wei Jiang, Tao Li, and James Pinnington, 2018, Picking Friends Before Picking (Proxy) Fights: How Mutual Fund Voting Shapes Proxy Contests, working paper Duke University.

Bubb, Ryan and Emiliano Catan, 2019, The Party Structure of Mutual Funds, working paper NYU Law School.

Chasan, Emily, Firms Target Retail Investors for 'Say-on-Pay' Votes, *Wall Street Journal*. March 5, 2013.

Coates, John C., 2018, The Future of Corporate Governance Part I: The Problem of Twelve, Working paper Harvard Law School.

Daly, Rich, P&G Couldn't Avoid The 'Snake Pit.' Better Tech, Verification Will Stop This In The Future, *Forbes*. October 27, 2017.

Daniel, Kent and Sheridan Titman, 2016, Another Look at Market Responses to Tangible and Intangible Information, *Critical Finance Review* 5(1), 165-175.

Duflo, Esther, 2001, Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment, American Economic Review 91(4): 795-813.

Fisch, Jill E., 2017, Standing Voting Instructions: Empowering the Excluded Retail Investor, *Minnesota Law Review* 102, 11-60.

Fisch, Jill E., Assaf Hamdani, and Steven Davidoff Solomon, 2019, The New Titans of Wall Street: A Theoretical Framework for Passive Investors, forthcoming *University of Pennsylvania Law Review.*

Geoffroy, Rachel, 2018, Electronic Proxy Statement Dissemination and Shareholder Monitoring, working paper Ohio State University.

Gilson, Ronald J. and Jeffrey N. Gordon, 2013, The Agency Costs of Agency Capitalism: Activist Investors and the Revaluation of Governance Rights, *Columbia Law Review* 113, 863-928.

Gulinello, Christopher J., 2010, The Retail Investor Vote: Mobilizing Rationally Apathetic Shareholders to Preserve or Challenge the Board's Presumption of Authority, *Utah Law Review* 547, 573-576.

Gumbs, Keir D., Hamblet Todd, and Stortini Kristin, 2013, Debunking the Myths Behind Voting Instruction Forms and Vote Reporting, *Corporate Governance Advisor* 21.

Hirschman, Albert O., 1970, Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States.

Hirst, Scott, 2017, Frozen Charters, *Yale Journal on Regulation* 34, 91-166.

Kahan, Marcel, and Rock, Edward B., 2008, The Hanging Chads of Corporate Voting, *Georgetown Law Journal*, 96.

Kahan, Marcel, and Rock, Edward B., 2019, Index Funds and Corporate Governance: Let Shareholders be Shareholders, working paper NYU School of Law.

Kastiel, Kobi and Yaron Nili, 2016, In Search of the "Absent" Shareholders: A New Solution to Retail Investors' Apathy, *Delaware Journal of Corporate Law* 41, 55-104.

Lee, Choonsik and Matthew E. Souther, 2018, Managerial Reliance on the Retail Shareholder Vote: Evidence from Proxy Delivery Methods, forthcoming *Management Science*.

Lewellen Jonathan, and Katharina Lewellen, 2018, Institutional investors and corporate governance: The incentive to increase value, Working paper Dartmouth College.

Iliev, Peter and Michelle Lowry, 2015, Are Mutual Funds Active Voters? *The Review of Financial Studies* 28(2), 446–485.

Malenko, Nadya and Yao Shen, 2016, The Role of Proxy Advisory Firms: Evidence from a Regression-Discontinuity Design, *The Review of Financial Studies* 29(12), 3394-3427,

OpenInvest, OpenInvest Launches Personalized Investment App with First-Ever Mobile Proxy Voting, *PR Newswire*. October 9, 2017.

Securities and Exchange Commission, 2010, Concept Release on the U.S. Proxy System.

Racanelli, Vito J., 2018, Does Your Proxy Vote Count?, *Barron's*. 98, 14-19.

Rosen, Amy Lee, 2016, Ordinary Investors Dislike Proxy Access, WL 4707607.

Stewart, Neil, Retail Shareholders: Looking Out for the Little Guy, *IR Magazine*. May 15, 2012.

Table 1. Illustrative Annual Meeting Example

This table provides information on retail voting at an anonymized issuer's annual meeting during the sample period. Panel A summarizes the methods of proxy delivery to retail shareholders and the means by which shareholders returned their votes. Firms and shareholders have choice regarding how materials are delivered to shareholders. Accounts choose to receive either (i) Hard Copy, (ii) E-Delivery, or (iii) the company Default delivery method. Firms may choose to send the (a) Hard Copy or (b) Notice and Access, or may choose a mixture of the two (Notice to some shareholders, Hard Copy to others). Shareholders receive their choice of materials, or, if they did not select Hard Copy or E-Delivery, they receive the company's choice. We summarize the following four options of what the shareholder receives, as coded in our retail voting data: If the shareholder chooses Hard Copy, or if the shareholder chooses Default and the company chooses Hard Copy, then a complete copy of proxy materials including the proxy statement, annual financials, and ballot or vote instruction form is sent to the shareholder via the postal service. If the shareholder chooses Default and the firm chooses Notice and Access, then it mails the shareholder a notice to announce the meeting with information on how to get complete packages of proxy materials or use the service provider's online website for voting. Under the rules for notice and access, requests for Hard Copy can be made by going to the Internet voting website, calling a toll-free number, or sending a request by e-mail. Panel B provides the voting results for the items on the ballot. To preserve the anonymity of the firm some of the shareholder proposals have been removed. For each of the remaining proposals we report the corresponding management and ISS recommendations. "F" indicates voting in favor of a given proposal, "N" indicates voting no/against a proposal, and "A" indicates abstaining from a vote. The column, Retail Votes, provides the percent of votes cast by retail shareholders, and within the votes cast, the percent of votes for and against. Panel C provides information on the range of voting decisions by retail shareholders for this meeting. Out of 16,681 observed permutations, including the proposals that have been omitted from the panel, we report those combinations of voting that were used most frequently. We report the number of retail accounts voting the specific combination, the number of shares voted, and the percent of shares accounted for by the specific combination relative to all retail shares.

Panel A: Methods of Proxy Delivery and Vote Returns

Proxy Delivery Method	**# of Shares**	**# of Accounts**	**Avg # Shares per Account**	**Share Voting %**
Hard Copy—Account choice	203,378,545	143,587	1,416	73.0%
Hard Copy—Firm choice	408,438,592	160,873	2,539	33.2%
E-mail	437,093,454	863,938	506	20.4%
Notice	193,138,321	592,794	326	7.3%
Total	1,242,048,913	1,761,192	705	31.2%

Voting Method	**# of Shares**	**# of Accounts**	**Avg # Shares per Account**	**Share Voting %**
Hard Copy	203,910,890	144,928	1,407	16.4%
Internet Proxy Vote	126,836,144	55,130	2,301	10.2%
Investor Mailbox	25,541,657	21,412	1,193	2.1%
Telephone	25,224,002	15,583	1,619	2.0%
Mobile Proxy Vote	7,616,283	6,542	1,164	0.6%
Consolidated Data Feed	1,216,582	823	1,478	0.1%
Did Not Vote	851,703,355	1,516,774	562	68.6%
Total	1,242,048,913	1,761,192	705	100.0%

Panel B: Individual Proposal Voting Results

	Proxy Item	Mgmt. Rec.	ISS Rec.	Retail Votes % Cast	Retail Votes % For	Retail Votes % Against
	Management proposals:					
1	Individual Director Elections	F	F	30.3	N/A	N/A
2	Advisory Vote to Approve Executive Comp.	F	N	29.7	88.5	11.5
3	Ratification of Independent Auditors	F	F	30.6	98.6	1.4
	Shareholder proposals:					
4	ESG-Related Proposal	N	F	30.0	12.5	87.5
5	Restrict Precatory Proposals	N	N	29.4	7.0	93.0
6	Independent Chairman	N	F	29.8	15.4	84.6
7	Increase Capital Distributions	N	N	29.6	8.6	91.4
8	Special Shareholder Meetings	N	F	29.5	9.5	90.5
9	Report on Lobbying	N	F	30.0	14.3	85.7

Panel C: Permutations of Votes Cast Across Proposals

Proposals:									# of Accounts	% of Accounts	# of Shares	% of Shares
Did not vote									1,516,905	86.1%	854,516,673	68.8%
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**				
F	F	F	N	N	N	N	N	N	125,094	7.1%	258,064,223	20.8%
F	F	N	N	N	N	N	N	N	3,833	0.2%	5,731,872	0.5%
F	F	F	F	F	F	F	F	F	5,436	0.3%	4,395,938	0.4%
F	F	F	N	N	F	N	N	N	2,691	0.2%	4,177,826	0.3%
F	F	F	A	A	A	A	A	A	2,246	0.1%	2,838,453	0.2%
				…					…	…	…	…
F	F	F	A	A	N	A	F	F	1	0.0%	0.1	0.0%
									1,761,192	100.0%	1.242 Billion	100.0%

Table 2. Shareholder Proposals in the Retail Voting Dataset

This table reports information on the content of proxies in the retail voting dataset. The sample is limited to retail dataset proposals that were matched with data from ISS Voting Analytics and CRSP. The table reports the number of proposals of each type. Proposal categories are based on item descriptions from ISS Voting Analytics (see Appendix A3). Sponsor, management recommendation, and ISS recommendation are from ISS Voting Analytics.

	2015	2016	2017
All Proposals	16,595	17,505	19,852
Management:			
Elect Director	8,628	9,164	9,684
Financial Statements/Auditor	2,977	3,016	3,001
Governance - Board & Shareholder Rights	219	262	216
Governance - Comp	3,515	3,681	3,901
Governance – Say on Pay Frequency	118	211	1,812
Governance - Other	162	211	229
Major Transactions - Issuance, Buyback, Distribution, Stock Split, or Conversion	270	295	330
Major Transactions - M&A	146	196	200
Other	43	42	41
Shareholder:			
Environmental	76	91	83
Social	116	132	130
Governance	324	288	225
Management:	15,962	16,868	17,602
Management For & ISS For	14,687	15,437	16,016
Management For & ISS Against	1,272	1,425	1,575
Shareholder:	515	510	438
Management Against & ISS For	388	345	299
Management Against & ISS Against	111	142	123

Table 3. Retail Investor Characteristics

This table reports information on retail investors covered in the retail dataset. Retail characteristics were generated as follows: first, for each firm meeting, we use each account's holdings on the record date as a "snapshot" of that account's yearly holdings in the firm. We remove duplicate meetings of the same firm in a single year. Second, for each account, we aggregate the holdings in the portfolio at the account-year level. Number of firms in portfolio is defined as the number of firms in a given year for which the account holds shares on the firm's record date. Account value is defined as the sum of an account's individual firm stake values, where individual stake values are calculated as the product of the number of shares in the firm held by the account, as provided by the retail shareholding data, and the price of the stock at the end of the record-date month, as provided by CRSP. Dividend yield is defined as the difference between the firm buy and hold returns with dividends and without dividends (ret and retx from CRSP, respectively). The account-year-level composite dividend yield is calculated as the account's dividends per firm aggregated over the firms held by that account. Yearly market abnormal return for an account is calculated as the buy and hold return on the securities in the account, assuming the account held all securities for the past year. We then deduct the CRSP value weighted index return. Firm purchase rate and sale rate are the portion of portfolio firms that have been added or removed in the past year, respectively. To evaluate characteristics of the home area of the accounts in the sample, we obtain adjusted gross income data at the zip code level from the IRS website. Zip Code Mean AGI refers to the mean Adjusted Gross Income in the account's zip code (variable A00100 in the IRS zip code data). Voting Rate is defined as the number of ballots cast divided by number of voting opportunities. Panel A includes summary statistics by year. In panel B we first sort accounts into quintiles by account value and then report the average of each of the characteristics described in panel A including the voting rate.

Panel A: Retail Investor Characteristics by Year

	2015			**2016**			**2017**		
	Avg.	Med.	Stdev	Avg.	Med.	Stdev	Avg.	Med.	Stdev
Num. of firms in portfolio	4.01	2.00	6.93	4.17	2.00	7.28	4.23	2.00	7.67
Account value	134,919	13,805	13,794,189	124,905	12,995	12,637,171	135,304	13,717	13,499,970
Dividend Yield	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.09
Market Abnormal Return	0.00	0.00	0.23	0.00	0.02	0.28	0.02	-0.03	0.33
Zip Code Mean AGI	103,226	77,363	87,933	106,350	79,792	89,986	105,600	80,765	85,058

Panel B: Average Retail Investor Characteristics by Account Value

	Account Value Quintile				
	Smallest	2	3	4	Largest
Num. of firms in portfolio	1.49	1.95	2.69	4.49	10.07
Account value	629	4,353	14,148	43,537	595,657
Dividend Yield	0.02	0.02	0.02	0.02	0.02
Market Abnormal Return	-0.04	0.01	0.02	0.02	0.03
Firm Purchase Rate	0.35	0.33	0.32	0.31	0.29
Firm Sale Rate	0.29	0.30	0.30	0.28	0.25
Zip Code Income	91,118	98,426	103,056	108,602	125,374
Voting Rate	0.03	0.05	0.07	0.09	0.16

Table 4. Retail Investor Ownership Characteristics

This table reports information on ownership characteristics by retail shareholders. The sample is limited to the retail dataset proposals that were matched with data from ISS Voting Analytics and CRSP. Firm size is calculated as the product of CRSP variables csho and prc, and quintiles are determined using the NYSE size breakpoints from Ken French's website. For the tercile sort by dividend yield, we merge data from Compustat by 6-digit CUSIP and record-date month, merging in the fiscal year data of which the record-date month is a part. "# Investors" refers to the number of retail investors in the sample, in thousands, who own shares in the company. "Retail Ownership" is the percentage of outstanding shares of the firm held by domestic retail investors in the sample.

	2015				**2016**				**2017**			
	# Investors (thousands)		Retail Ownership (%)		# Investors (thousands)		Retail Ownership (%)		# Investors (thousands)		Retail Ownership (%)	
Size quintile:	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.	Avg.	Med.
Smallest	4	2	40	34	4	2	39	34	5	2	35	33
2	8	4	18	14	10	5	19	15	10	5	17	14
3	16	9	15	12	16	9	15	12	17	9	15	11
4	31	19	14	12	30	18	13	11	34	21	14	11
Largest	267	110	16	15	286	118	16	15	297	125	16	14
Dividend yield quintile:												
No dividends	12	4	28	22	14	4	28	22	15	5	28	23
Small	40	5	21	15	35	5	21	15	33	6	19	13
Medium	86	9	33	20	104	10	31	19	87	8	22	19
Large	86	8	27	21	96	7	27	20	139	9	26	21
Full Sample	35	5	28	20	38	5	27	19	39	5	25	20

Table 5. Retail Voting by Meeting

This table reports voting results at the ballot level. % Cast is the proportion of ballots cast as a proportion of the number of shares outstanding. % Voting Only With MGMT refers to ballots that entirely match management recommendations. "% At Least One Against MGMT" refers to ballots with at least one vote that deviates from management recommendations. The columns with header "Retail Votes" are at the shareholder vote level while the columns with header "Retail Account" are at the retail account level and weight each account equally. Rows relating to takeover defenses use SharkRepellent classifications and are limited to those observations that matched with SharkRepellent.

	Retail Votes			Retail Accounts		
	% Cast	% Shares Voting Only With MGMT	% At Least One Against MGMT	% Cast	% Accounts Voting Only With MGMT	% At Least One Against MGMT
All Meetings	32	76	24	11	59	41
Proposal sponsor/type:						
Meeting is 100% management proposals	34	82	18	11	70	30
At least one shareholder proposal	30	69	31	12	52	48
At least one shareholder prop (environmental)	29	69	31	12	52	48
At least one shareholder prop (social)	29	67	33	12	51	49
Annual Meeting	32	76	24	11	58	42
Special Meeting	38	79	21	15	74	26
No disagreements between MGMT and ISS	32	80	20	12	67	33
At least one disagreement between MGMT and ISS	32	74	26	11	54	46
No Takeover Defense-Related Proposal	34	79	21	12	63	37
≥1 Takeover Defense-Related Proposal	28	68	32	11	52	48
≥1 Proposal Increasing Takeover Defenses	52	85	15	10	64	36
≥ 1 Proposal Reducing Takeover Defenses	28	68	32	11	52	48

Table 6. Retail Voting and Meeting Proposals

This table reports information on retail voting limiting the sample to retail dataset proposals that were matched with data from ISS Voting Analytics and CRSP. Each entry represents the average of all firm votes in the category. "All Votes" contains the overall voting results from ISS Voting Analytics, with corrections from SharkRepellent and CRSP, as described in Appendix A2. "Retail Votes" contains the domestic retail voting results from the retail voting data. "Retail Accounts" contains the domestic retail voting results, but at the account level. % Cast refers to the sum of the number of votes cast for and against divided by the number of potential votes as reported by ISS Voting Analytics. For and against votes exclude say-on-pay frequency votes and certain director votes for which the only retail voting data is on the number of votes cast. % For is the number of votes for divided by the number of votes cast. Panel A shows voting sorted by the identity of the sponsor, management or shareholder. Panel B shows voting by sponsor and firm size quintile. Panel C shows retail voting by proposals categories. Panel D shows voting sorted by sponsor and management and ISS recommendations.

Panel A: Retail Voting by Proposal Sponsor

	All Votes		**Retail Votes**		**Retail Accounts**	
	% Cast	% For	% Cast	% For	% Cast	% For
All	78	93	30	91	11	88
Management	78	95	31	94	11	90
Shareholder	73	31	27	19	11	30

Panel B: Retail Voting by Firm Size Quintile

	All Votes		**Retail Votes**		**Retail Accounts**	
	% Cast	% For	% Cast	% For	% Cast	% For
Management sponsored:						
Size Quintile:						
Smallest	72	93	35	91	12	86
2	83	95	31	94	11	89
3	83	96	29	95	11	90
4	82	96	27	95	11	92
Largest	78	97	27	96	11	93
Shareholder sponsored:						
Size Quintile:						
Smallest	68	46	41	45	12	52
2	79	48	33	29	10	42
3	80	39	29	23	12	35
4	77	37	27	23	11	34
Largest	72	28	26	16	11	27

Panel C: Retail Voting by Proposal Category

	All Votes		Retail Votes		Retail Accounts	
	% Cast	% For	% Cast	% For	% Cast	% For
Management:						
Elect Director	78	97	29	96	11	93
Financial Statements/Auditor	87	99	32	98	11	96
Governance - Board & Shareholder Rights	77	94	33	92	12	89
Governance - Comp	74	91	31	88	11	79
Governance - Other	77	92	40	91	14	86
Major Transactions - Issuance, Buyback, Distribution, Stock Split, or Conversion	71	89	32	83	10	74
Major Transactions - M&A	77	98	45	95	18	91
Other	77	81	34	90	12	88
Shareholder:						
Environmental	69	24	25	14	12	24
Social	70	20	26	15	11	28
Governance	76	38	29	22	11	33

Panel D: Retail Voting by Management and ISS Recommendations

	All Votes		Retail Votes		Retail Accounts	
	% Cast	% For	% Cast	% For	% Cast	% For
Management-sponsored:						
Management For & ISS For	79	97	30	94	11	90
Management For & ISS Against	72	76	34	88	10	81
Shareholder-sponsored						
Management Against & ISS For	74	37	28	18	11	29
Management Against & ISS Against	71	8	26	14	11	26

Table 7. Retail Voting by Proposal Type, Voter Account Value, and Firm Size

This table provides voting results sorted by above-median and below-median account values for the year and by firm size terciles. Account value is the sum of the account's individual firm stake values, where the stake value is the number of shares owned by the account multiplied by the record-date month end share price. Firm size is calculated as the product of CRSP variables csho and prc, and terciles are determined using the NYSE size breakpoints from Ken French's website. Results are reported on the basis of shares rather than on the basis of accounts.

	Account Value				**Firm Size Terciles**					
	Low		High		Smallest		Middle		Largest	
	% Cast	% For	% Cast	% For	% Cast	% For	% Cast	% For	% Cast	% For
Shareholder:										
Environmental	6	30	25	14	30	13	27	16	25	14
Social	6	35	26	15	24	9	24	21	26	15
Governance	6	38	29	22	40	46	30	27	27	19
Management:										
Elect Director	6	93	29	96	34	93	28	95	27	96
Financial Statements/Auditor	8	96	33	98	34	98	30	98	28	98
Governance - Board & Shareholder Rights	9	89	34	92	39	91	29	94	27	91
Governance - Comp	8	80	32	88	34	86	29	90	27	90
Governance - Other	13	86	41	91	42	89	39	95	30	94
Major Transactions - Issuance, Buyback, Distribution, Stock Split, or Conversion	11	74	34	84	32	82	33	90	28	92
Major Transactions - M&A	15	90	46	95	51	95	41	95	34	93
Other	10	91	35	90	37	89	29	93	30	94
Sponsor:										
Management	7	90	31	94	33	92	27	94	26	96
Shareholder	6	36	28	19	38	42	29	24	26	17

Table 8. Impact of Retail Voting

This table describes changes in voting outcomes under hypothetical changes in the decision to vote and changes in the voting preferences of certain groups of shareholders. Panel A provides the number of proposals whose outcome would change if a voting group's participation were set to zero. The sample consists of all proposals for which the voting base is votes cast rather than outstanding shares. We exclude routine proposals including auditor ratification and meeting adjournment, director elections, and say on pay votes. Each row in panel A designates a voting group whose participation is set to zero in the hypothetical. Columns (3) (and (4) reflect the number of proposals flipped under the hypothetical, and columns (5), (6), and (7) provide the number of proposals whose final percentage counts move by five, ten, and twenty percent, respectively. In panel B we condition on observed shareholder participation and report the number of proposals whose voting outcome would change if a voting group's preferences are altered. The two voting groups whose preferences we alter are those of retail shareholders, in the middle two columns, and the Big Three institutional investors, BlackRock, Vanguard, and State Street, in the right two columns. Voting choices are altered to the voting choice of the group described in the row header. To ensure a consistent comparison across the two voting groups, we determine the minimum of the number of retail votes and the number of Big Three votes in each proposal and then use this number of votes to assess the consequences of the change in voting preferences. The sample in Panel B consists of the proposals in Panel A whose final overall number of votes in favor was between 4/5 and 6/5 of the number of votes required. That is, for a standard proposal which would pass by a majority of cast ballots, Panel B limits to proposals that received 40% to 60% in favor. In both panels, columns (1) and (2) ("# passing proposals" and "# failing proposals") refer to the actual number of passing and failing proposals in each of the panel's samples. In panel B, columns (3) and (4) reflect the number of proposals whose outcome is changed under the hypothetical that retail voters alter their voting rate, and Columns (5) and (6) reflect the number of proposals with changed outcomes under the hypothetical that the Big Three voters alter their voting preference. In both panels, data on retail voters comes from Broadridge and is limited to domestic retail shareholders, data on overall vote totals comes from ISS's Voting Analytics dataset, and mutual fund votes come from a merge of Form NP-X, CRSP Mutual Funds, and Thomson Reuters S12. In our counts of Big Three votes, we only include votes from NP-X where we can match the fund to an ownership count for that company.

Panel A: consequences due to shocks to retail participation

	Actual Frequencies		**Frequency if Group Participation Goes to zero**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Group Whose Participation Goes to zero	# passing proposals	# failing proposals	# Passing Proposals Flipped to Fail	# Failed Proposals Flipped to Pass	# of 5% movers	# of 10% movers	# of 20% movers
Retail Voters	4751	1256	54	37	610	266	79
Big 3	4751	1256	24	53	325	63	19
All Non-Retail Shareholders	4751	1256	268	47	3771	2504	1141

Panel B: Consequences due to shocks to retail voting preferences

	Actual Frequencies		**Retail Voters Alter Vote**		**Big 3 Voters Alter Vote**	
	(1)	(2)	(3)	(4)	(5)	(6)
Group voting frequency to adopt	# passing proposals	# failing proposals	# Passing Proposals Flipped to Fail	# Failed Proposals Flipped to Pass	# Passing Proposals Flipped to Fail	# Failed Proposals Flipped to Pass
Management Proposals						
Retail Voters	85	19	0	0	2	4
Big 3	85	19	13	2	0	0
All Non-Retail Shareholders	85	19	11	0	6	3
All in Favor	85	19	0	7	0	6
All Opposed	85	19	29	0	14	0
Shareholder Proposals						
Retail Voters	62	166	0	0	11	4
Big 3	62	166	0	9	0	0
All Non-Retail Shareholders	62	166	0	17	3	19
All in Favor	62	166	0	43	0	53
All Opposed	62	166	1	0	14	0

Table 9. Retail Shareholder Decision to Cast a Ballot

This table reports regressions describing shareholder turnout decisions. The dependent variable is equal to 1 if the account cast a ballot and 0 otherwise, multiplied by 100. The table is limited to observations that are not missing any of the regressors, which requires matches to CRSP, Compustat, and IRS zip code data. Yearly abnormal return refers to the firm buy and hold return for the period 13 months to 1 month prior to the record date minus the value weight market return from CRSP. Dividend yield is a binary variable equal to one if there is a positive difference in the firm's return with dividends and without dividends (ret and retx from CRSP, respectively). Log market equity is the log of market equity (price time shares outstanding from CRSP, as of the record-date month). Tobin's Q is book value plus market equity minus book equity, divided by book value. ROA, return on assets, is EBITDA divided by total assets. Log market equity, return on assets, Tobin's Q, and all dummy variables are each demeaned over all firms in the sample so a value of zero corresponds to the average log market equity, ROA, Tobin's Q, or dummy variable, respectively. Any ISS Opposed is a binary equal to one if any of the proposals on the ballot were opposed by ISS. Any Shareholder Proposal is a binary equal to one if any of the proposals on the ballot were shareholder proposals. Number of proposals is the number of proposals on the ballot for the meeting in question. Log Stake Value is the log of the account's stake in the security defined as the product of share price and number of shares owned. Log Rest of Account Value is the log of the total account value for that account that calendar year defined as the sum across that account's firms of the product of share price and number of shares owned, less the stake value in the individual firm, plus one. Log Zip Code AGI is the Adjusted Gross Income in the prior calendar year in the account's zip code. All columns include year-month fixed effects; all columns except column (5) include industry fixed effects; column (5) includes firm fixed effects; column (6) includes account fixed effects; and column (7) includes Account-Year fixed effects. Industry fixed effects use Fama French industry categories; time fixed effects are year-month; proposal category fixed effects use the proposal categories set forth in Appendix A3. Observations are weighted by the inverse of the number of meetings for the account-year, so that each account-year is weighted equally. Standard errors clustered at the firm level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

Cast Ballot	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Yearly abnormal return	1.111***	1.060***	0.487	0.507*	0.033	0.183	0.123
	(0.304)	(0.291)	(0.263)	(0.257)	(0.320)	(0.280)	(0.253)
Dividend yield dummy	2.853***	3.102***	1.929***	2.120***	-0.013	0.007	0.030
	(0.307)	(0.321)	(0.238)	(0.244)	(0.211)	(0.134)	(0.135)
Log market equity	-0.353***	-0.205**	-0.796***	-0.767***		-0.062	-0.014
	(0.069)	(0.078)	(0.055)	(0.067)		(0.045)	(0.049)
Return on assets	1.066	0.612	-0.879	-0.979*	-0.826*	-1.090***	-1.109***
	(0.585)	(0.545)	(0.488)	(0.468)	(0.356)	(0.295)	(0.272)
Tobin's Q	-0.142	-0.216*	-0.386***	-0.430***	-0.354***	-0.152**	-0.152***
	(0.095)	(0.089)	(0.066)	(0.066)	(0.092)	(0.047)	(0.040)
Any ISS opposed		0.338		0.507**	0.199	0.390***	0.366**
		(0.290)		(0.179)	(0.106)	(0.097)	(0.120)
Any shareholder proposal		0.051		0.227	-0.334	-0.228	-0.260
		(0.325)		(0.213)	(0.187)	(0.156)	(0.169)
Number of proposals		-0.107***		-0.066**	-0.101***	-0.077***	-0.081***
		(0.032)		(0.021)	(0.030)	(0.012)	(0.014)
Log stake value			1.729***	1.728***	1.706***	0.590***	0.558***
			(0.074)	(0.074)	(0.082)	(0.028)	(0.029)
Log rest of account value			0.435***	0.435***	0.415***	0.064***	
			(0.015)	(0.015)	(0.013)	(0.016)	
Log zip code AGI			-1.411***	-1.412***	-1.319***	-0.043	
			(0.050)	(0.051)	(0.047)	(0.031)	
Intercept	8.213***	9.379***	8.914***	9.367***	10.242***	9.198***	9.225***
	(0.145)	(0.428)	(0.114)	(0.314)	(0.351)	(0.190)	(0.195)
Year-month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes		Yes	Yes
Firm FE					Yes		
Account FE						Yes	
Account-Year FE							Yes
R^2	0.79	0.81	3.11	3.13	3.69	74.13	86.78
N	356,293,937	356,293,909	343,827,307	343,827,284	343,827,284	343,827,284	356,293,909
Number of clusters	3,339	3,337	3,339	3,337	3,337	3,337	3,337

Table 10. Retail Shareholder Voting Decisions

This table reports evidence on account-level voting decisions with observations at the account-proposal level. The dependent variable is a binary variable that equals one if the account voted in line with management recommendation, and zero if it voted against, multiplied by 100. The analysis is limited to account-proposals in which the account voted on the proposal; proposals other than auditor ratification, meeting adjournment, director elections, and say on pay; and observations that are not missing any of the regressors, which requires matches to CRSP, Compustat, and IRS zip code data. Yearly abnormal return refers to the firm buy and hold return for the period 13 months to 1 month prior to the record date minus the value weight market return from CRSP. Dividend yield is a binary variable equal to one if there is a positive difference in the firm's return with dividends and without dividends (ret and retx from CRSP, respectively). Log market equity is the log of market equity (price time shares outstanding from CRSP, as of the record-date month). Tobin's Q is book value plus market equity minus book equity, divided by book value. ROA (Return on Assets) is EBITDA divided by total assets. Log market equity, return on assets, Tobin's Q, and all dummy variables are each demeaned over all firms in the sample so a value of 0 corresponds to the average log market equity, ROA, Tobin's Q, or dummy variable, respectively. ISS against management is a binary variable that equals 1 if ISS has a recommendation other than "For" for a management proposal, or a For recommendation on a shareholder proposal. Log Stake Value is the log of the account's stake in the security defined as the product of share price and number of shares owned. Log Rest of Account Value is the log of: the total account value for that account that calendar year defined as the sum across that account's firms of the product of share price and number of shares owned, less the stake value in the individual firm, plus one. Log Zip Code AGI is the Adjusted Gross Income in the prior calendar year in the account's zip code. All columns include year-month and proposal category fixed effects; all columns except column (5) include industry fixed effects; column (5) includes firm fixed effects; column (6) includes account fixed effects; and column (7) includes Account-Year fixed effects. Industry fixed effects use Fama French industry categories; time fixed effects are year-month; proposal category fixed effects use the proposal categories set forth in Appendix A3. Observations are weighted by the inverse of the number of meetings for the account-year, so that each account-year is weighted equally. Standard errors clustered at the firm level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Yearly abnormal return	5.419***	5.236***	4.311***	4.110***	3.315**	2.580**	2.281***
	(0.968)	(0.982)	(0.963)	(0.972)	(1.180)	(0.786)	(0.637)
Dividend yield dummy	2.339***	2.062***	1.615**	1.315*	-0.534	-0.469	-0.366
	(0.561)	(0.559)	(0.542)	(0.543)	(3.482)	(0.371)	(0.343)
Log market equity	0.694***	0.598***	0.396**	0.292*		0.309**	0.372***
	(0.134)	(0.127)	(0.133)	(0.126)		(0.100)	(0.099)
Return on assets	7.043***	7.119***	4.779***	4.872***	-0.168	1.565	2.024*
	(1.409)	(1.348)	(1.420)	(1.348)	(2.653)	(0.881)	(0.831)
Tobin's Q	0.553*	0.592**	0.269	0.308	-0.603	0.414**	0.428***
	(0.217)	(0.205)	(0.209)	(0.196)	(0.549)	(0.139)	(0.129)
ISS against management		-2.947***		-3.039***	-2.802***	-2.454***	-2.385***
		(0.475)		(0.482)	(0.450)	(0.352)	(0.353)
Log stake value			1.937***	1.948***	1.827***	0.577***	0.540***
			(0.072)	(0.072)	(0.072)	(0.042)	(0.037)
Log rest of account value			0.024	0.023	0.029*	-0.002	
			(0.016)	(0.016)	(0.014)	(0.013)	
Log zip code AGI			-0.150	-0.151	-0.094	-0.173	
			(0.096)	(0.097)	(0.095)	(0.122)	
Intercept	75.465***	76.690***	75.549***	76.810***	76.754***	76.648***	76.515***
	(0.249)	(0.354)	(0.243)	(0.354)	(0.281)	(0.217)	(0.181)
Year-month and Proposal Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes		Yes	Yes
Firm FE					Yes		
Account FE						Yes	
Account-Year FE							Yes
R^2	3.57	3.64	4.12	4.19	5.07	59.39	68.77
N	94,533,386	94,530,591	91,628,031	91,625,410	91,625,410	91,625,410	94,530,591
Number of clusters	4,678	4,677	4,678	4,677	4,677	4,677	4,677

Table 11. Comparison of Retail Shareholder and Big Three Voting Decisions

This table reports regression results on shareholder voting aggregated across accounts at the proposal level. The dependent variable is the number of votes voted in line with management recommendation divided by the number of votes cast For or Against, multiplied by 100. Yearly abnormal return is the firm buy and hold return for the period 13 months to one month prior to the record date, minus the buy and hold value weight market return from CRSP. Dividend yield is a binary variable equal to one if there is a positive difference in the firm's buy and hold return with dividends and without dividends (ret and retx from CRSP, respectively). Log market equity is the log of market equity (price time shares outstanding from CRSP, as of the record-date month). Tobin's Q is book value plus market equity minus book equity, divided by book value. ROA, return on assets, is EBITDA divided by total assets. Log market equity, Return on Assets, Tobin's Q, and all dummy variables are each demeaned over all firms in the sample so a value of 0 corresponds to the average log market equity, ROA, Tobin's Q, or dummy variable, respectively. Any ISS Opposed is a binary equal to one if any of the proposals on the ballot were opposed by ISS. Any SH is a binary equal to one if any of the proposals on the ballot were shareholder proposals. ISS against management is a binary variable that equals 1 if ISS has a recommendation other than For for a management proposal, or a For recommendation on a shareholder proposal. In Panel A columns (1) through (3) include Big Three voting results, and columns (4) through (6) contain retail voting results. In Panel B Columns (1) through (4) contain Big Three results, and Columns (4) through (6) contain retail results. In Panel A, all columns except (3) and (6) include industry fixed effects and columns (3) and (6) include firm fixed effects. In Panel B all columns include industry fixed effects, and columns are divided by proposal types. All regressions include year-month and proposal category fixed effects. Industry fixed effects use Fama French industry categories; time fixed effects are year-month; proposal category fixed effects use the proposal categories set forth in Appendix A3. Observations are weighted so that each meeting is weighted equally. Standard errors clustered at the meeting level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

Panel A: All Non-Routine Proposals Other Than Director Elections and Say on Pay Votes

Vote with Management	(1) Big Three	(2) Big Three	(3) Big Three	(4) Retail Voters	(5) Retail Voters	(6) Retail Voters
Yearly Abnormal Returns	1.122	-1.388	-1.615	5.632***	5.334***	3.444***
	(1.277)	(1.028)	(1.353)	(0.581)	(0.579)	(0.706)
Dividend Yield	1.828*	0.417	-3.675	-1.293**	-1.478**	-0.203
	(0.901)	(0.734)	(2.467)	(0.454)	(0.450)	(2.459)
Log Market Equity	1.578***	2.302***		0.510***	0.585***	
	(0.248)	(0.207)		(0.111)	(0.111)	
Return on Assets	9.984***	5.724**	-8.361	5.619***	5.120***	-1.222
	(2.691)	(2.055)	(4.798)	(1.138)	(1.142)	(2.198)
Tobin's Q	-0.658	-0.463	1.743*	0.325*	0.345*	0.218
	(0.362)	(0.289)	(0.858)	(0.163)	(0.162)	(0.336)
ISS Opposed		-35.287***	-28.687***		-4.517***	-4.734***
		(1.179)	(1.369)		(0.461)	(0.475)
Intercept	89.070***	98.032***	97.455***	86.840***	88.007***	87.657***
	(0.400)	(0.205)	(0.422)	(0.186)	(0.204)	(0.189)
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Category FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes		Yes	Yes	No
Firm FE			Yes			Yes
R^2	6.90	35.13	63.65	11.00	12.87	69.09
N	6,853	6,853	5,882	7,274	7,271	6,281
Number of clusters	4,384	4,384	3,413	4,645	4,644	3,654

Panel B: By Proposal Type

	(1) Director Elections	(2) Say on Pay	(3) Shareholder	(4) Other	(5) Director Elections	(6) Say on Pay	(7) Shareholder	(8) Other
Vote with Management	Big Three	Big Three	Big Three	Big Three	Retail Voters	Retail Voters	Retail Voters	Retail Voters
Yearly Abnormal Returns	0.217	-1.067	-3.449	-0.685	2.839***	4.881***	2.748	5.250***
	(0.518)	(0.673)	(4.210)	(1.022)	(0.558)	(0.553)	(2.113)	(0.583)
Dividend Yield	0.144	1.213*	8.106*	-1.044	-0.207	-0.991**	0.922	-1.311**
	(0.319)	(0.495)	(3.204)	(0.690)	(0.309)	(0.351)	(1.411)	(0.461)
Log Market Equity	0.258*	-0.235*	5.760***	1.377***	0.625***	0.464***	1.868***	0.807***
	(0.101)	(0.118)	(0.695)	(0.203)	(0.097)	(0.093)	(0.351)	(0.120)
Return on Assets	1.749	4.518**	21.640	7.447***	0.195	4.564***	14.651*	5.352***
	(2.167)	(1.583)	(12.213)	(2.010)	(1.193)	(1.113)	(5.756)	(1.152)
Tobin's Q	-0.141	0.296	-2.428*	-0.218	0.414***	0.566***	0.082	0.262
	(0.162)	(0.161)	(0.961)	(0.288)	(0.086)	(0.116)	(0.468)	(0.171)
ISS Opposed	-18.874***	-32.500***	-16.763***	-40.653***	-0.375	-2.804***	-0.887	-2.256***
	(1.820)	(1.462)	(1.691)	(1.612)	(0.690)	(0.581)	(0.917)	(0.583)
Intercept	98.910***	98.934***	95.505***	97.319***	95.282***	87.501***	83.202***	87.968***
	(0.099)	(0.125)	(1.176)	(0.210)	(0.133)	(0.157)	(0.833)	(0.212)
Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	16.23	34.45	28.18	40.25	9.30	7.70	21.98	13.42
N	19,853	6,673	1,387	5,579	20,119	6,965	1,401	6,003
Number of clusters	2,599	6,651	806	3,963	2,649	6,943	810	4,225

Figure 1: Delivery of Proxy Material and Shareholder Voting

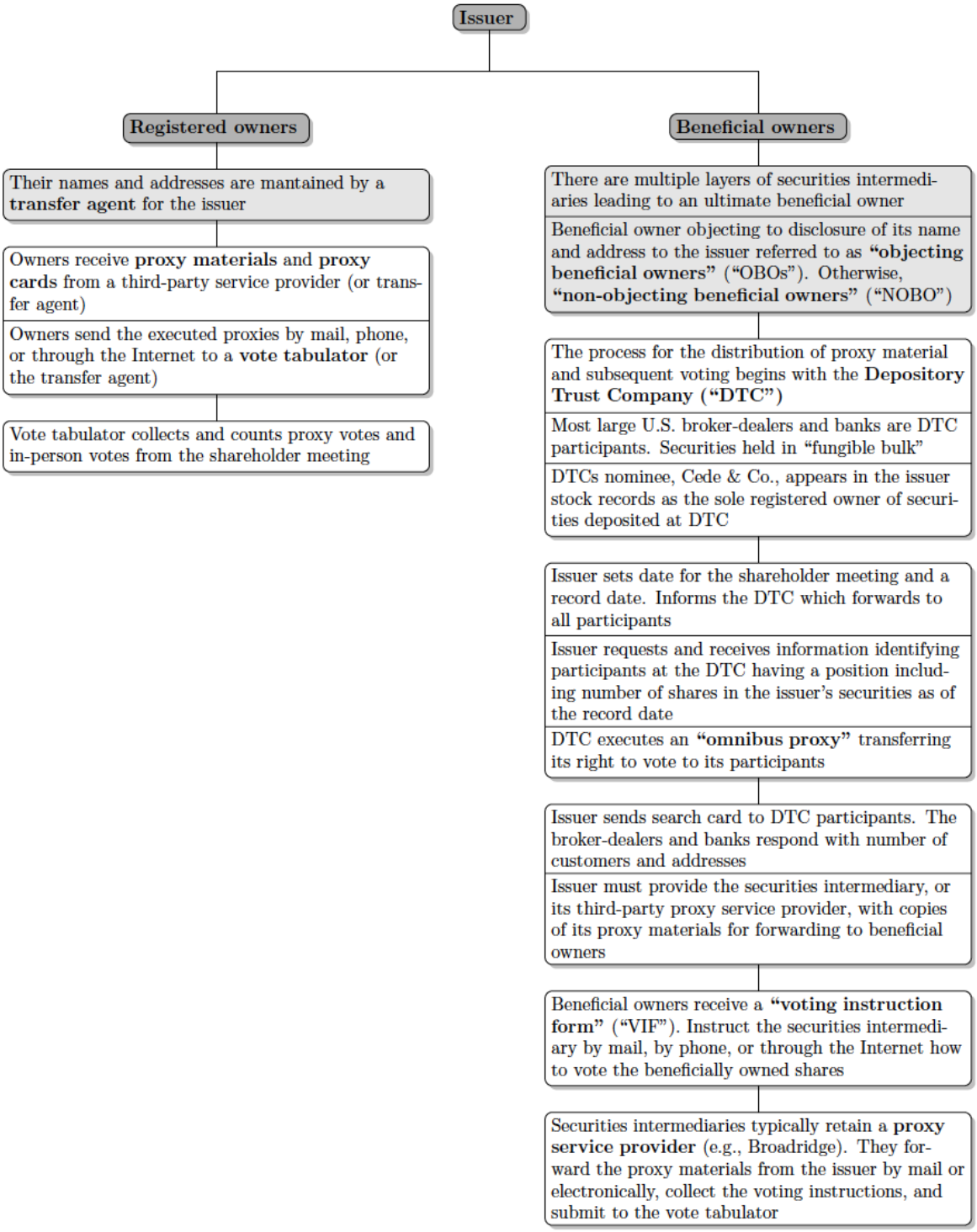
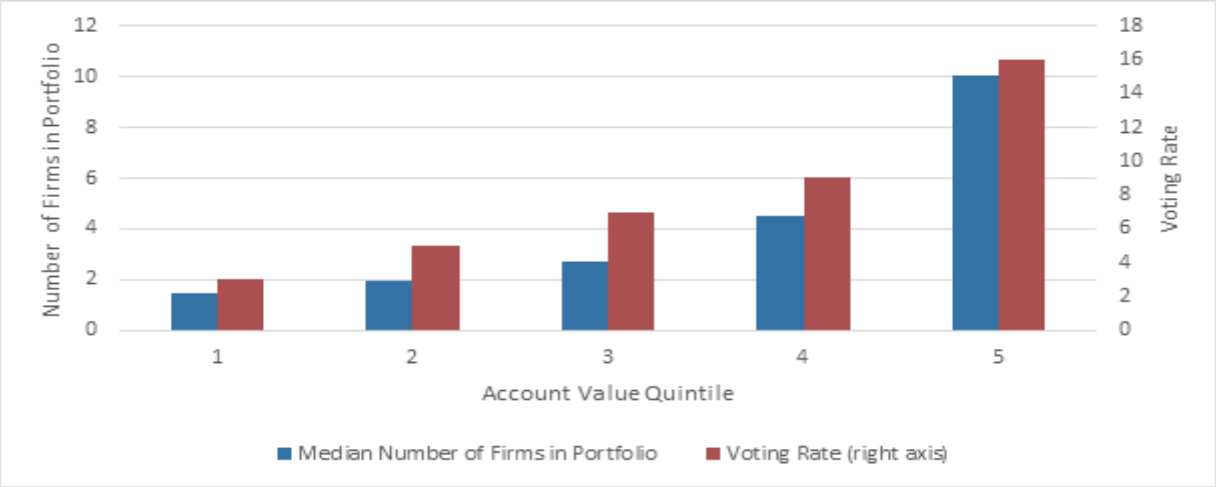


Figure 2. Ownership Characteristics by Account Value and Firm Size

This figure graphs retail investor ownership characteristics by account value and firm size. For each firm meeting we use each account's holdings on the record date as a "snapshot" of that account's holdings in the firm. We remove duplicate meetings of the same firm in a single year. Then, for each account, we aggregate the holdings in the portfolio at the account-year level. Account value is the sum of an account's individual firm stake values, where the stake value is the number of shares owned by the account multiplied by the record-date month share price. Panel A shows, for each account value quintile, the median number of firms in the portfolio and the average account voting rate, defined as the number of ballots cast divided by number of voting opportunities. Panel B shows, for each firm size quintile, the median retail ownership, as the percentage of outstanding shares of the firm held by domestic retail investors in the sample as well as the median number of retail accounts, in thousands, who own shares in the firm. Firm size is calculated as the product of CRSP variables csho and prc, and quintiles are determined using the NYSE size breakpoints from Ken French's website.

Panel A: Number of Firms in the Portfolio and Voting Rate by Account Value Quintile



Panel B: Retail Ownership and Number of Accounts by Firm Size Quintile

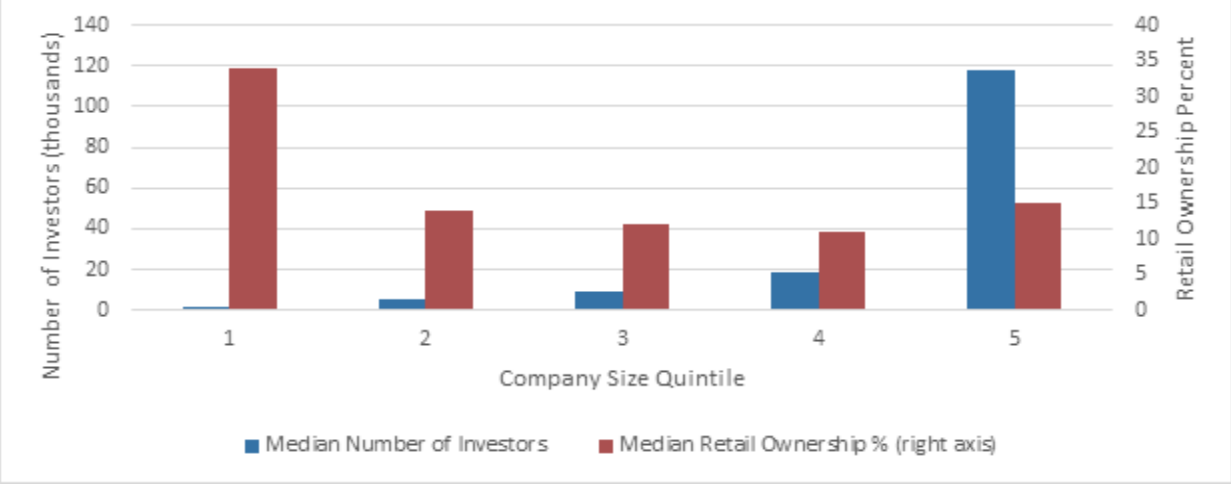


Figure 3. Propensity to Cast a Vote by ROA Quintiles

This figure displays estimates from a regression of retail turnout on quintiles of return on assets interacted with terciles of log stake value, firm and ballot characteristics, and year-month, industry, and account-year fixed effects. Specifically, we report estimates of $\beta_1^{jk}, k = 1,2,3; j = 1, \ldots, 5$; from the specification:

$$\begin{aligned} Turnout_{act} \quad = \quad & \beta_0 + \sum_{j=1}^{5}\sum_{k=1}^{3} \beta_1^{jk} ROA\ Quintile_{ct}^{j} * Log\ Stake\ Value\ Tercile_{at}^{k} + \beta_2 LogME_{ct} \\ & + \beta_3 Any\ ISS\ Opposition_{ct} + \beta_4 Any\ Shareholder\ Prop_{ct} + \beta_5 * NumProps_{ct} \\ & + \theta_{Industry} + \phi_t + \phi_{at} + \varepsilon_{act} \end{aligned}$$

The dependent variable is a binary variable that equals one if the account cast its ballot. Log market equity, $LogME$, is the price time shares outstanding from CRSP, as of the record-date month. ROA, return on assets, is EBITDA divided by total assets. *Any ISS Opposition* is a binary variable equal to one if any of the proposals on the ballot were opposed by ISS. *Any Shareholder Prop* is a binary variable equal to one if any of the proposals on the ballot were shareholder proposals. $NumProps$ is the number of proposals on the ballot for the meeting. Industry fixed effects use Fama French industry categories; time fixed effects are year-month. The y-axis represents estimate of the regression coefficients β_1 on the quintile by tercile dummies. Standard error bars represent 95% confidence intervals, with clustering at the firm level. Small, Medium, and Large Stake represent three terciles of log stake value. Quantiles are generated using the full sample, one observation per account-meeting. The omitted dummy variable is the lowest return on assets quintile x the smallest log stake value tercile ($k = j = 1$). Regressions are weighted so that each account-year has equal weight.

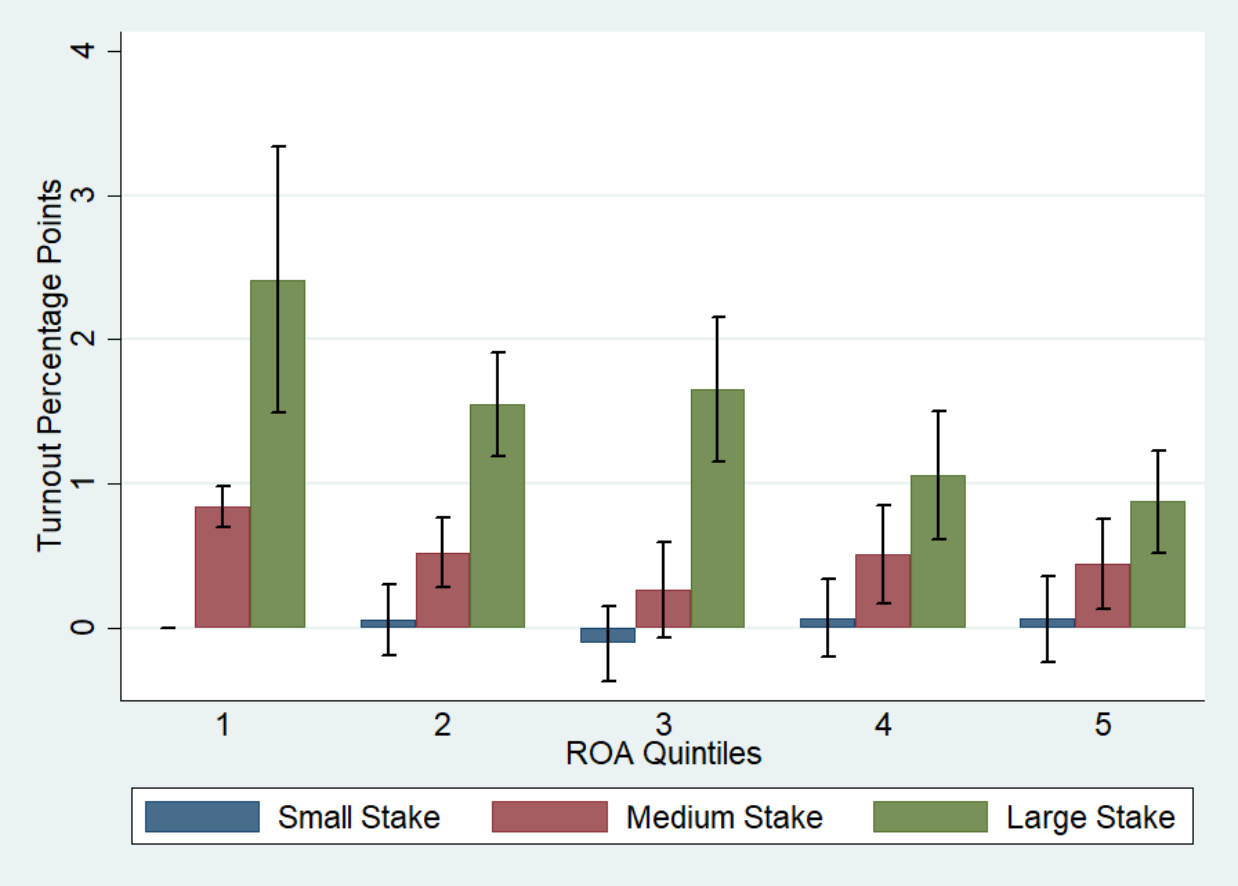


Figure 4. Support Management and Shareholder Proposals by Stake Value Quintile

This figure displays estimates from a regression of voting support on quintiles of log stake value interacted with a binary variable for shareholder proposals, firm and ballot characteristics, and year-month, industry, and proposal category fixed effects. Specifically, we report estimates of $\beta_1^{jk}, k = 1,2; j = 1, \ldots, 5$; from the specification:

$$\begin{aligned} Support\ MGMT_{apct} \quad = \beta_0 + \sum_{j=1}^{5} \beta_1^{jk} Log\ Stake\ Value\ Quintile_{ct}^{j} * Shareholder\ Prop_{pct}^{k} \\ + \beta_2 Yearly\ Abnormal\ Return + \beta_3 LogME_{ct} \\ + \beta_4 Dividend\ Yield\ Binary + \beta_5 ROA + \beta_6 Tobin's\ Q \\ + \beta_7 ISS\ Opposition_{pct} + \psi_{Proposal\ Category} + \theta_{Industry} + \phi_t + \varepsilon_{apct} \end{aligned}$$

The dependent variable is a binary variable that equals one if the account voted in line with management recommendation, and zero if it voted against. *Yearly abnormal return* is the firm buy and hold return for the period 13 months to 1 month prior to the record date minus the value weighted market return from CRSP. *Dividend yield* is a binary variable equal to one if there is a positive difference in the firm's return with dividends and without dividends (ret and retx from CRSP, respectively). Log market equity, $LogME$, is the price times shares outstanding from CRSP, as of the record-date month. *Tobin's Q* is book value plus market equity minus book equity, divided by book value. *ROA*, return on assets, is EBITDA divided by total assets. *ISS Opposition* is a binary variable that equals 1 if ISS has a recommendation other than "For" for the proposal. *Log stake value* is the log of the value of the account's stake in the firm (number of shares owned multiplied by price). Industry fixed effects use Fama French industry categories; time fixed effects are year-month; proposal category fixed effects use the proposal categories set forth in Appendix A3. The y-axis represents regression coefficients β_1 on the quintile by binary dummies. Standard error bars represent 95% confidence intervals, with clustering at the meeting level. Quantiles are based on the full sample, one observation per account-meeting. The omitted dummy variable is the lowest log stake value quintile x management proposal ($k = j = 1$). Regressions are weighted so that each account-year has equal weight.

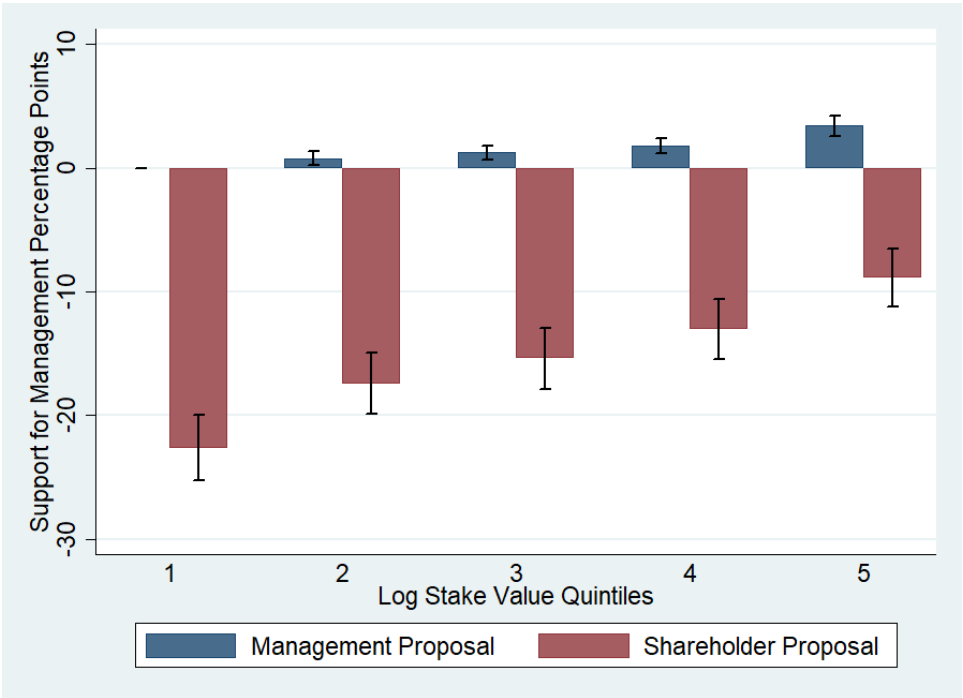
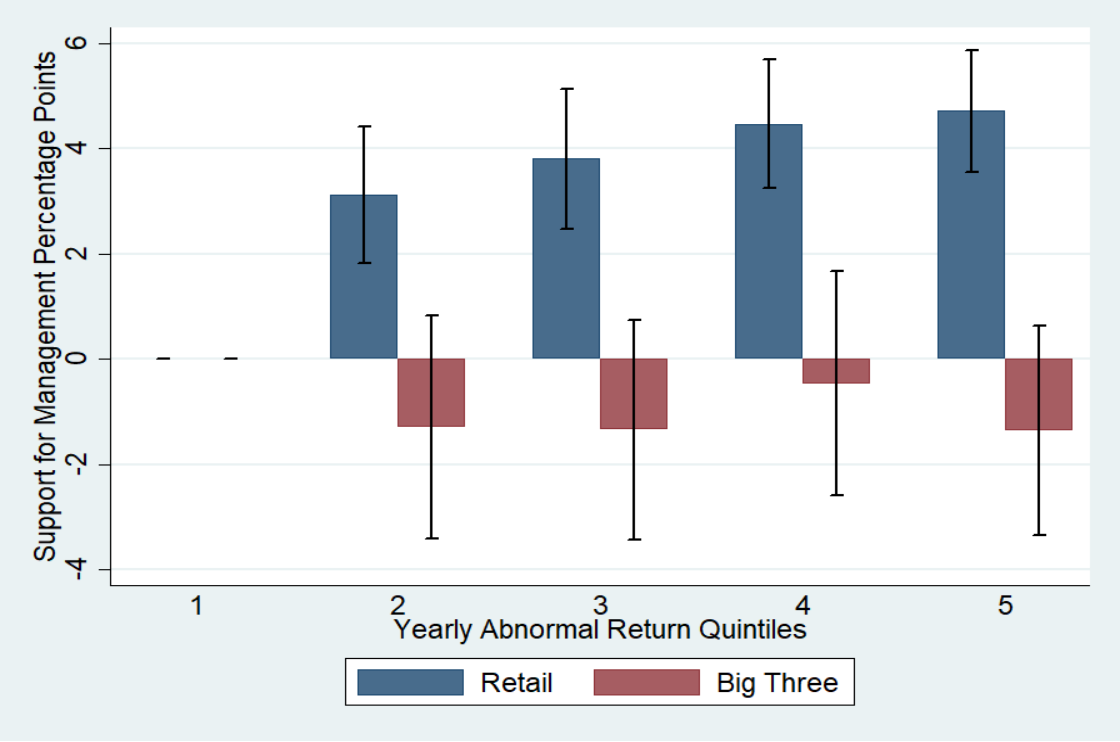


Figure 5. Retail and Big Three Support for Management by Abnormal Return Quintile

This figure displays estimates from two regressions of voting support for management on quintiles of yearly abnormal return, firm and ballot characteristics, and year-month, industry, and proposal category fixed effects. The first regression is for the retail vote and the second regression for the Big Three vote. Both regressions use the same sample of proposals, consisting of proposals other than auditor ratification, meeting adjournment, director election, or say on pay, and for which no variables are missing. Specifically, we report estimates of $\beta_1^j, j = 1, \ldots, 5$; from the following specification:

$$\begin{aligned} Support\ MGMT_{apct} \quad = \quad & \beta_0 + \sum_{j=2}^{5} \beta_1^j Yearly\ Abnormal\ Return\ Quintile_{ct}^j \\ & + \beta_2 LogME_{ct} + \beta_4 ISS\ Opposition_{pct} \\ & + \psi_{Proposal\ Category} + \theta_{Industry} + \phi_t + \varepsilon_{apct} \end{aligned}$$

The dependent variable in each regression is the number of shares voted in line with management recommendations, divided by the total number of shares voted for or against. *Yearly abnormal return* is the firm buy and hold return for the period 13 months to 1 month prior to the record date minus the value weighted market return from CRSP. Log market equity, $LogME$, is the price time shares outstanding from CRSP, as of the record-date month. *ISS Opposition* is a binary variable that equals 1 if ISS has a recommendation other than "For" for the proposal. Industry fixed effects use Fama French industry categories; time fixed effects are year-month; proposal category fixed effects use the proposal categories set forth in Appendix A3. The y-axis represents regression coefficients, β_1, on the quintile dummies. Standard error bars represent 95% confidence intervals, with clustering at the meeting level. Quantiles are generated using the full sample, one observation per meeting. The omitted dummy variable in each regression is the lowest yearly abnormal return ($j = 1$). Regressions are weighted so that each meeting has equal weight.



Appendix A1. Matching of Retail Voting Sample to ISS Voting Analytics

This appendix provides a detailed description of the proposal-level merger of the ISS Voting Analytics and retail voting datasets. The two datasets include slightly different samples of firms: of 7,606 unique 6-digit CUSIPs in ISS Voting Analytics and 6,782 unique 6-digit CUSIPs in the retail voting data, 5,849 are in both. Nearly all of the 1,757 firms that appear in ISS Voting Analytics but not in the retail voting sample are investment funds. Nearly all of the 933 firms that appear in the retail voting data but not in ISS Voting Analytics are non-public firms.

The retail voting sample data comes in the form of two separate datasets: one at the firm-meeting-account level, in which each row contains a string of votes representing the votes of an account for all proposals at that meeting (or is blank, if the account did not vote); and one at the proposal level, in which each row contains the text of a single proposal at a meeting. The string of shareholder votes in the retail voting data is in the same order as the proposals appear on the ballot; however, the proposals vary in their ordering (some are numbered, some are lettered, some have roman numerals or identifying tags). The retail voting dataset does not contain any identifying information about which proposal is which other than the order of votes. Thus, the proposal-level merge between the retail voting data and ISS Voting Analytics actually requires a three-way merge between the retail voting data, the retail proposal data, and ISS Voting Analytics.

We begin by attempting to correctly order the proposals in the retail proposal set so that they properly reflect the actual ballot order. From 90,964 proposals spanning 17,937 meetings in the original retail proposal set, there are 90,787 remaining once we remove proposal slates which are overall duplicates in CUSIP, meeting date, record date, proposal text and number of proposals (we retain one of the proposal slates). We then remove any meetings from the retail proposal set for which the meeting ID does not appear in the retail voting data set, leaving 17,736 meetings (89,850 proposals). Following this step, we match these proposals to ISS Voting Analytics. We match to ISS Voting Analytics before we match to the other retail voting dataset so that we can use this match to correct any mis-orderings that remain.

Meetings in ISS Voting Analytics and the retail voting sample are defined slightly differently with respect to multiple proposal slates. Meetings with multiple types of securities or multiple share classes may have different slates of proposals. For example, preferred stockholders may elect a different set of directors but otherwise vote for the same ballot items as common stockholders. ISS Voting Analytics treats different proposal slates as separate meetings; the retail voting data labels the slates differently within the same meeting. Thus, a proposal that is voted on as part of two different proposal slates will appear as a duplicate. For consistency, we adopt the convention of reporting as a "meeting" a unique CUSIP-meeting date-record date.

To match proposals across the ISS Voting Analytics and retail voting data, we begin by matching meetings by 6-digit CUSIP, meeting date, and record date. Of 18,925 meetings in the ISS Voting Analytics set (of which 15,549 have CUSIPs which appear in the retail voting sample) and 17,731 meetings in the retail voting data (of which 15,683 have CUSIPs which appear in ISS Voting Analytics), 14,587 meetings are in both datasets. There are several hundred meetings which match by CUSIP but not by meeting date and record date. Many appear to be due to simple discrepancies in record date between the datasets. Others likely are due to incorrect CUSIP matches. Finally, 89 are due to the fact that proxy contests are in ISS Voting Analytics but not in the retail voting data.

Because ISS Voting Analytics lists multiple proposal slates as multiple meetings on the same day, for the 622 cases in which ISS Voting Analytics has multiple meetings by the same firm on the same day (166 of which are in the retail voting data), we remove them and separately hand-match their proposals to proposals from corresponding meetings. We also hand-match the 21 additional meetings with multiple profiles that are in ISS Voting Analytics but not in the previous group of 622.

Next, for all of the remaining meetings, we use the number of proposals at the meeting and the order of proposals to match. In both datasets, proposals within a meeting appear in the order in which they appear on the ballot. However, various discrepancies arise between the two datasets, in which both do not include precisely the same proposals in precisely the same order. Sources for these discrepancies include: (i) the retail voting data frequently condense multiple director election proposals into a single row with proposal text "#DIRECTOR" rather than a separate proposal for each director with the actual proposal text; (ii) the retail voting proposals are ordered unsystematically, with a mix of lexicographic and other kinds of ordering; (iii) there are some proposals about which the firms take different approaches, such as proposals to permit "other business," check boxes to indicate whether the voter has a conflict of interest in the vote, and withdrawn proposals; (iv) ISS Voting Analytics is missing several hundred proposals from its dataset, apparently erroneously (in such cases, the proposals are apparently numbered properly within ISS Voting Analytics but one of the numbers is missing); and (v) for many meetings, ISS Voting Analytics, apparently erroneously, lists each proposal twice.

To deal with these issues, for those meetings matched on CUSIP, meeting date, and record date, we provisionally match their constituent proposals in order, then use additional factors to properly merge the datasets proposal by proposal, including the proposal's text description given in each dataset. ISS Voting Analytics proposals have a brief item description of the proposal produced by ISS Voting Analytics. The retail voting data have for each proposal the first several hundred characters of the proposal text directly from the proxy statement. Starting from our match at the meeting level, we match at the proposal level in a series of stages. If two matched meetings have the same number of proposals, then we provisionally match the proposals in order. Because both ISS Voting Analytics and the retail voting data list their proposals in the order they appear on the proxy ballot, this should accurately match the two in most cases. As an added check, we conduct a text match to flag potentially mismatched proposals that we later hand-check.

Our text match is designed as follows. First, for each pair of meetings that are matched by 6-digit CUSIP, record date, meeting date, and number of proposals, we calculate the string distance between the text description for all combinations of each of the ISS Voting Analytics proposals and each of the retail voting proposals within the matched meeting. To calculate string distance, we use the Jaccard distance, which is the number of shared 5-character strings divided by the total number of 5-character strings. This generates, for a meeting with n proposals, an nxn matrix of Jaccard distances, in which (j,k) represents the ISS Voting Analytics proposal in the j'th spot's distance from the retail dataset proposal in the k'th spot, and in which the diagonal represents the distances from the proposals "across from them" in the other dataset. We calculate a score for the meeting based on the ratio of the sum of the lowest alternative row or column versus the sum of the diagonal, where a score of 1 indicates that each of the proposals match up better to the proposals across from them in the other dataset than they do to any other proposal in the meeting. For those meetings with scores below 0.99 or flagged for another reason, we check all proposals in the meeting by hand. Matches may be flagged if either (i) there is only one proposal in the meeting

and the proposal text in the retail data is not "#DIRECTOR," or (ii) there are multiple ISS Voting Analytics proposals with "Elect Director" in the item description but one of the retail proposal texts is "#DIRECTOR", implying that the director elections were condensed in the retail data for that meeting.

If an ISS Voting Analytics meeting and a retail data meeting matched on CUSIP, meeting date, and record date do not have the same number of proposals, then, since the most likely reason is that the retail data frequently condenses multiple director elections into a single "#DIRECTOR" proposal, we similarly "condense" the ISS Voting Analytics meeting by removing all but one row containing the string "Elect Director" in its item description. If, after this process, the two matched meetings have the same number of proposals, then we repeat the process described above: we merge each "condensed" ISS Voting Analytics meeting to its corresponding retail data meeting on number of proposals, and, if they match, again generate a match score and hand-check those with scores below 0.99 or flagged for another reason. If the matched meetings still have a different number of proposals, then we manually hand-match their proposals.

Following this process, from the original 14,587 matched meetings we manually hand-match the proposals at 303 meetings (2,112 proposals), for which we find a match from the retail data to ISS Voting Analytics on at least one proposal for 301 meetings (1,919 matched proposals). These are cases in which ISS Voting Analytics has duplicate meetings on the same day or the ISS Voting Analytics and retail data meetings do not have the same number of proposals even after condensing. We hand-check the proposals for 760 meetings (3,217 proposals) in which the number of proposals is the same but the match score is below 0.99 or they are flagged for other reasons, for which we find a match from the retail data to ISS Voting Analytics on at least one proposal for 759 meetings (3,215 proposals). We algorithmically match, and do not further check, the proposals at 13,524 meetings (68,048 proposals). Those proposals that are algorithmically matched belong to meetings that match on CUSIP, meeting date, meeting day, and number of proposals, have a text match score greater than or equal to 0.99 on the ISS Voting Analytics Item Description and retail proposal text, and did not trigger other flags that would suggest a mistake as described in this appendix. Last, three meetings were removed because we cannot confirm from their constituent proposals that the meetings themselves were correct matches.

As a final check on our matching process, we verify with the subset of hand-checked meetings that the match score we generate is a strong predictor of proper matching and that those scores above 0.99 have a low chance of being incorrectly matched. For the 593 hand-checked proposals with match scores below 0.95, just 170 were properly provisionally matched, but for the 2,350 proposals with scores between 0.95 and 0.99, 2,346 were properly provisionally matched. An additional 274 proposals had scores above 0.99 but were flagged for other reasons; 270 of these were properly provisionally matched. Finally, we also hand-checked 1617 proposals that were not flagged for any reason; all were properly provisionally matched.

The merge of the retail proposal data with ISS Voting Analytics generally confirms the proper order of the retail proposals and permits a merge to the retail voting data. For those that we hand-code, we also use the manually-checked original retail proposal order and re-order appropriately to ensure that we can properly merge with the retail voting dataset.

We then merge the combined ISS Voting Analytics-retail proposals set with the retail voting dataset. Starting with 89,850 proposals in the original retail proposal set, we remove 71 that are duplicates which caused the number of meetings to be mis-matched, and remove one

meeting of six proposals that are entirely duplicates, leaving 89,772 proposals. There are 89,652 proposals remaining once we remove proposal slates which are duplicates in CUSIP, meeting date, record date, and number of proposals, but which are not identical in proposal text (we remove all copies of such proposal slates, since we have no way to properly merge to the retail voting data). Of these, 89,571 proposals (17,720 meetings) properly match to the retail voting set by CUSIP, meeting date, record date, number of proposals at the meeting, and sequence number. 73,084 of these proposals (14,578 meetings) match to ISS Voting Analytics.

We have two additional checks using variables that we did not use for our merges. First, although the retail voting dataset has no identifying information to distinguish proposals at a meeting other than the votes themselves, the frequency of say on pay votes are uniquely distinguishable from other votes using the retail voting data because the votes are 1's, 2's, and 3's instead of For's or Against's. Of the 2,483 proposals for which the retail voting dataset votes are 1's, 2's, and 3's and for which there was a meeting match to ISS Voting Analytics, 2,479 were properly matched to a retail proposal set frequency of say-on-pay proposal, a success rate of 99.8%.

Second, both the retail voting data and the ISS Voting Analytics data include proposal-level management recommendations, so we can use these to cross-compare our results. Of 73,084 proposals, the management recommendations differ in 70. From spot-checking, these appear to be cases in which the proposals are properly matched but the firms differ in their management recommendations (for example, because the proposal was withdrawn).

We subsequently merge this sample with CRSP, leaving 54,876 proposals. We then merge with SharkRepellent and correct certain ISS Voting Analytics numbers, as reported in Appendix A2, though we do not drop observations that do not match to SharkRepellent. We hand-correct 42 entries where ISS Voting Analytics and SharkRepellent incorrectly report 0 votes For and Against. We drop proposals where the number of votes outstanding is reported incorrectly and cannot be corrected, where all voting categories have no votes (almost always where the firm did not report the results of that proposal in the original 8-K or the proposal was withdrawn prior to voting), and where For votes were reported but not Against, leaving a final sample of 53,952 proposals.

Appendix A2. Correction of Erroneous ISS Voting Analytics Numbers

In the course of matching the retail voting proposal data to that in ISS Voting Analytics, we found that ISS Voting Analytics reports erroneous numbers of outstanding shares and vote returns in a portion of its observations. This error affects observations in 2017. In this appendix, we describe how we correct these erroneous entries.

The nature of the issue is as follows. For all meetings in year 2017 for fields with more than 9 digits for outstanding shares, votes for, votes against, votes abstained, and say on pay frequency votes, ISS Voting Analytics data cuts off the final digits of the number. For example, a share count of '123,456,789' would be reported in ISS Voting Analytics as '12,345,678.'

We correct the errors using data from SharkRepellent, which contains information on outstanding shares, votes for, votes against, votes abstained, and say on pay frequency votes. We first match SharkRepellent to ISS Voting Analytics at the meeting level (by CUSIP, record date, and meeting date) and proposal level (by votes for, votes against, and votes abstained). For the proposal-level meetings, we permit matches in situations in which ISS Voting Analytics has cut off extra digits.

For those observations that do not match with SharkRepellent and are candidates to have digits cut off we identify observations in 2017 that ISS Voting Analytics report as having 8 digits, and CRSP reports at least 80,000,000 outstanding shares and we hand-code the correct numbers using public filings. For a small handful of observations where (i) we do not have shares outstanding numbers from SharkRepellent and (ii) shares outstanding from the record-date month from CRSP is approximately 100 or 1,000 times the ISS Voting Analytics number, we multiply the ISS Voting Analytics number by 100 or 1,000 to reach an approximate number.

In total, we correct 20,037 entries across 11,629 proposals with digits cut off, inappropriate zeros, or other inconsistencies. We also run further diagnostics to confirm that ISS Voting Analytics numbers are accurate other than the issue described above. Note that we choose to continue to use the ISS Voting Analytics proposal data rather than SharkRepellent despite the errors because it can be matched at the proposal level with the voting data, as detailed in Appendix A1, whereas SharkRepellent cannot be, and ISS Voting Analytics has larger coverage.

Appendix A3. Categorization of ISS Voting Analytics Proposals

The ISS Voting Analytics dataset contains two fields that we use to categorize shareholder proposals. The first, Item Description, is the full text for the proposal on the proxy statement. The second, Agenda General Description, is a standardized and more concise description, e.g., "Approve Political Donations." The proposals in the ISS Voting Analytics dataset are captured by only 310 distinct Agenda General Descriptions as compared to 46,343 distinct Item Descriptions. We allocate each of the Agenda General Descriptions into seven broad categories designed to capture the diversity of these proposals. For proposals with insufficient information in their Agenda General Descriptions we use the full-text Item Description to assign them into one of our seven categories. We use string matches (e.g., "Elect Director") to assign the bulk of these proposals into categories, and then hand-match the remaining proposals. Table A3 reports the seven categories:

Table A3

Categories of Proposals:		
1	**Directors**	Elect Director
2	**Accounting**	Financial Statements/Auditor
3	**Governance**	Board and Shareholder Rights
		Compensation
		Say on Pay Frequency
		Shareholder Governance Proposal
		Other
4	**Major Transactions**	Issuance, Buyback, Distribution, Stock Split, or Conversion
		M&A
5	**Environmental**	Climate Change, Sustainability, Etc.
6	**Social**	Diversity, Lobbying, Etc.
7	**Other**	

Appendix A4. Construction of the Mutual Fund Voting Records

We use four data sources to form the mutual fund voting dataset. For fund voting information, we use filings on Form N-PX filed with the SEC. Form N-PX is required of all registered management investment companies. We obtain Form N-PX via the Mutual Fund Vote Records dataset within the ISS Voting Analytics Database. The dataset contains the voting decision for each fund on each proposal for each company that it owns. We also use the CRSP US Mutual Fund Database, which contains whether a fund is index-based or not and the 13F institutional share ownership via the Thomson Reuters S12 dataset, which indicates the ownership of each company by each fund among 13F filers at the time of the quarterly filing. The fourth dataset is the WRDS Mutual Fund Links (MFLINKS), which is designed to link funds in the CRSP Mutual Fund dataset to the Thomson Reuters Mutual Funds (S12) dataset.

The ISS Mutual Fund Vote Records cannot be directly merged to the Thomson Reuters S12 share ownership dataset since the two have no shared identifier and list fund names in different and hard to match manner. We therefore construct our dataset as follows. First, we use text matching to match ISS Mutual Fund Vote Records with the CRSP Mutual Fund dataset by fund name. Of the 11,208 unique funds in the ISS dataset, we match 452 (4.03%) to CRSP using exact text matching. We then use the STATA matchit function for fuzzy matching, hand-check each match, and additional hand-coding. Following this process, we match 9,244 (82.48%) funds to CRSP.

Next, starting from the CRSP dataset, we use the MFLINKS dataset to match each CRSP fund to a linking identifier by fund. We use that linking identifier to match to Thomson S12 by fund. Finally, we match the ISS Mutual Fund Vote Records to the Thomson Reuters S12 via our links. We match by fund, company CUSIP, and date. For ISS, the relevant date is the record date of the meeting; for Thomson Reuters, the relevant date is the record date of the 13F filing. We limit to matches in which the record date of the meeting is within 180 days of the record date of the 13F filing. Where there is more than one 13F record date within 180 days of a meeting record date for a given fund and company, we keep only the 13F closest chronologically to the meeting record date.

In total, the ISS Voting Analytics Database contains 15.7 million unique fund proposals that match to proposals in our dataset. Of those, 13.5 million (85.9%) match to a CRSP fund, and 8.7 million (55.4%) match to a Thomson Reuters S12 fund-company 13F filing, where the record date of the meeting is within 180 days of the record date of the 13F filing.

Throughout the paper, the Big Three refers to votes taken by Vanguard, Blackrock, or State Street. In our counts of mutual fund votes, we only include votes from NPX where we can match the fund to an ownership count for that company. Thus, we somewhat underestimate the ownership by mutual funds. For the proposals in this sample, 78% of Big Three funds (and 70% of Blackrock funds) for which there is NPX voting data matched to share numbers from Thomson Reuters; this is likely an underestimate of our true coverage of Big Three shares, since the larger funds are more likely to have matches in CRSP and Thomson Reuters.

Appendix A5. Utility Framework for Voter Participation Choice

This appendix describes a simple model of the decision to turn out, in which each account holds a single security and weighs costs and expected benefits of voting. The goal is to provide a simple framework in which accounts sometimes but not always turn out, and thus must weight costs and expected benefits. We model the account's utility as

$$U_a = \max_{V \in \{0,1\}} \{V(B_a S_a - T_a \kappa_a)\} \quad \text{(A1)}$$

Where a indexes the account, V is a binary equal to 1 if account a votes, $T_a \geq 0$ is the time required to vote, $\kappa_a > 0$ is the value of the account's time (so $T\kappa$ represents the total cost of voting) and $B_a \geq 0$ is the benefit of voting (which scales with a's stake size S_a). The total benefit scales with size of stake S via two channels—a bigger stake means a larger probability of affecting the outcome, and a bigger stake means more benefit from a higher stock value. In this model, the account maximizes utility by choosing whether to vote, balancing benefits BS against costs $T\kappa$. Next, assume that time cost of voting T_a is distributed across accounts with cdf $F(T)$. Then

$$\Pr(V = 1) = F\left(\frac{B_a S_a}{\kappa_a}\right) \quad \text{(A2)}$$

We can therefore derive four predictions about the correlates of retail voting turnout:

1) Turnout should be higher when the stake size S is higher.
2) Turnout should be higher when the benefit B from voting is higher. Assuming that the benefit of voting is higher for poorly performing firms, turnout should be inversely correlated with firm performance.
3) The interaction between B and S should be positive (or, as we proxy for it, the interaction between performance and stake size should be negative).
4) Turnout should be higher when the account's opportunity cost of voting κ is lower. We proxy for opportunity cost with the account's zip code labor income. Alternatively, zip code labor income may also proxy for the shareholder's marginal utility of a dollar, which would yield the same prediction.

Appendix A6. The Impact of Information on Turnout

This appendix examines how the information that the account receives with respect to the proxy vote affects turnout. Our goal is to causally identify the effects of information transmission on the decision to turn out.[21]

There are three forms of information materials regarding the vote that an individual may receive: (i) Hard Copy materials, consisting of a complete copy of proxy materials including the proxy statement, annual financials, and ballot or vote instruction form is sent to the shareholder via the postal service; (ii) a mailed one-sheet notice to announce the meeting with information on how to get complete packages of proxy materials or use the service provider's online website for voting; or (iii) e-mail, in which case links are delivered via e-mail to the shareholder to direct the shareholder to either the online voting website or to brokerage firms' investor mailboxes for voting. Consents to electronic delivery are typically made through a broker-dealer's website.

Accounts choose to receive either (i) Hard Copy, (ii) E-delivery, or (iii) the company Default delivery method. Firms may choose to send the (a) Hard Copy or merely (b) a Notice, or may choose a mixture of the two (Notice to some shareholders, Hard Copy to others). The following table shows that the actual materials received by an account depend on a combination of the company's choice and the shareholder's choice (removing mixes for simplicity):

		Company Choice	
		(a) Hard Copy	**(b) Notice**
Shareholder Choice	**(i) Hard Copy**	Hard Copy	Hard Copy
	(ii) E-Delivery	E-Delivery	E-Delivery
	(iii) Default	Hard Copy	Notice

We observe both the firm's choice and the shareholder's choice. An account's choice of Hard Copy or E-Delivery is completely determinative of the materials it receives; for the rest of accounts, the firm's choice of Hard Copy or Notice is completely determinative of the materials it receives.[22]

We begin by extending the model described in Appendix A5 to organize our predictions. Now consider an account's decision to vote as a two-pronged decision in which the account chooses whether to become an informed voter at cost ω and whether to vote. Defining I as a binary variable equal to 1 if account a chooses to receive information, the per-share benefit of voting is $B^{1_a^{\omega}} \in \{B^0, B^1\}$, $B^1 > B^0$, where B^1 is the benefit from voting with information and B^0 is the benefit of voting without information. We re-write equation (A1) as:

$$U_a = \max_{I\in\{0,1\},V\in\{0,1\}} \{-I * \omega + V * [B^I S_a - T_a \kappa_a]\} \quad \text{(A3)}$$

[21] Two prior works have examined similar topics. Lee and Souther (2019) find that management chooses Hard Copy when there are more contentious items on the ballot. Geoffrey (2019) looks at the effect of the firm choice on total firm turnout but cannot observe which shareholders are affected.

[22] For a given meeting, we observe the account's original choice. For example, if an account receives Notice, and then requests Hard Copy materials for the meeting, we observe the account's selection as Notice.

As before, the benefit of voting is given by BS, and the cost by $T\kappa$. An account will vote if either $B^1 * S_a \geq T_a\kappa_a + \omega$ (voting with information) or $B^0 * S_a \geq T_a\kappa_a$ (voting without information); conditional on voting, it will opt for information if and only if $S_a \geq \frac{\omega}{B^1 - B^0}$, a constant. As before, we assume that the time cost of voting T_a is distributed across accounts with cdf $F(T)$. For accounts that choose not to receive information, the probability of voting is described by $\Pr(V_a = 1) = F\left(\frac{B^0 * S_a}{\kappa_a}\right)$.

Now consider a shock to part of the group that would not choose to receive information: for a random subset (the Treatment Group), the cost of information ω is reduced (for simplicity, we reduce it to zero). Conditional on being an account that would have chosen not to receive information, we have:

$$\begin{Bmatrix} \Pr(V_a = 1 | Treatment\ Group) = F\left(\frac{B^1 * S_a}{\kappa_a}\right) \\ \Pr(V_a = 1 | Control\ Group) = F\left(\frac{B^0 * S_a}{\kappa_a}\right) \end{Bmatrix} \quad \text{(A4)}$$

Those affected have increased benefit of voting and therefore higher voting rates. The model makes the following predictions:

1) When the Treatment Group's cost of acquiring information decreases, its probability of voting should go up.
2) The impact on turnout will be larger for those with high stake sizes and low opportunity costs, so long as the concavity of the cdf $F()$ is not large as compared to the increase in benefits from voting.[23]

A.6.1. Summary of Identification Approach

To causally identify the effects on turnout of the information materials, we exploit the fact that a subset of firms switch their materials choice (from Notice to Hard Copy or vice versa) during the sample period. Because only accounts that have chosen Default are affected by the firm's choice, such accounts are our treatment group. We use a differences-in-differences-in-differences approach (across shareholder choices, across firm original choices, and pre- and post- firm switch).

We instrument for the account's actual selection with the account's original portion of firms in its portfolio that are Default (we use the original rather than current selection because a small group of accounts switch their choice of methods over time, and we use the share of Default rather than the selection for a given firm because a small group of accounts have variation across their firms in their choice of materials).[24] The equations below describe the first stage, second

[23] The increase in the probability of voting is $F\left(B^1 * \frac{S_a}{\kappa_a}\right) - F\left(B^0 * \frac{S_a}{\kappa_a}\right)$, which increases with $\frac{S}{\kappa}$ if $B^1 f\left(B^1 * \frac{S_a}{\kappa_a}\right) > B^0 f(B^0 * \frac{S_a}{\kappa_a})$. In other words, accounts with larger stakes/low opportunity costs may not have such a high turnout boost because their turnout is already so high and cdfs are concave, but as long as the density function is not too steep over the relevant region, they would see a larger turnout boost. Since we may expect an arbitrary turnout increase to affect large stake/low opportunity cost accounts less (because their turnout is already higher), higher turnout based on this information shock would suggest that the model properly captures its effects.

[24] We conduct extensive robustness checks. Our main regression removes accounts that do not appear in 2015, but we not doing this yields virtually identical results. We also get virtually identical results when we use, rather than an

stage causal equation of interest, and reduced form. We use two main specifications: one with three two-way fixed effects covering our main dimensions of variation (shown in the equations) and the other which includes lower-order interactions of the main terms.

First Stage: $M_{act} = \gamma_0 + \gamma_{1H} Switch_c * Post_{ct} * HC_{c0} * D_{a0} + \gamma_{1N} Switch_{ct} * Post_{ct} * N_{c0} * D_{a0} + \sum_{t=2015}^{2017} \gamma_{4Ht} HC_{c0} * D_{a0} + \sum_{t=2015}^{2017} \gamma_{4Nt} N_{c0} * D_{a0} + \theta_{ac} + \phi_{at} + \lambda_{ct} + \varepsilon_{act}$ (A5)

Second Stage: $V_{act} = \beta_0 + \beta_1 M_{act} + \sum_{t=2015}^{2017} \beta_{4Ht} HC_{c0} * D_{a0} + \sum_{t=2015}^{2017} \beta_{4Nt} N_{c0} * D_{a0} + \theta_{ac} + \phi_{at} + \lambda_{ct} + \nu_{act}$ (A6)

Reduced Form: $V_{act} = \delta_0 + \delta_{1H} Switch_c * Post_{ct} * HC_{c0} * D_{a0} + \delta_{1N} Switch_{ct} * Post_{ct} * N_{c0} * D_{a0} + \sum_{t=2015}^{2017} \delta_{4Ht} HC_{c0} * D_{a0} + \sum_{t=2015}^{2017} \delta_{4Nt} N_{c0} * D_{a0} + \theta_{ac} + \phi_{at} + \lambda_{ct} + \eta_{act}$ (A7)

In which a indexes account, c indexes firm, t indexes time, V_{act} is account's decision whether to participate at the firm's meeting at time t, M_{act} is the actual information materials the account receives at time t, $Switch_c$ is a binary reflecting whether the firm switches delivery methods, $Post_{ct}$ is a binary equal to one if time t is post-switch for switching firm c and zero otherwise, HC_{c0} is a binary reflecting the firm's choice of Hard Copy at time 0, N_{c0} is a binary reflecting the firm's choice of Notice at time 0, D_{a0} is the account's share of firms in its portfolio at time 0 for which it chose Default, θ_{ac} are account-firm fixed effects, ϕ_{at} are account-year fixed effects, and λ_{ct} are firm-year fixed effects. In the first stage (Equation (A5)), the coefficient γ_1 may be slightly less than one because accounts may switch methods over time or across firms in their portfolio, precipitating the instrumental variables approach. The instruments are $Switch_c * Post_c * HC_{c0} * D_{a0}$ and $Switch_c * Post_c * N_{c0} * D_{a0}$. It is worthwhile to point out that the alternative form of our equation, with the same instrument, includes interaction variables instead of fixed effects, with all lower-order interactions included. For example, the first and second stages:

First Stage: $M_{act} = \gamma_0 + \gamma_{1H} Switch_c * Post_{ct} * HC_{c0} * D_{a0} + \gamma_{1N} Switch_{ct} * Post_{ct} * N_{c0} * D_{a0} + \gamma_{2H} Switch_c * Post_{ct} * HC_{c0} + \gamma_{2N} Switch_c * Post_{ct} * N_{c0} + \gamma_{3H} Switch_c * HC_{c0} * D_{a0} + \gamma_{3N} Switch_c * N_{c0} * D_{a0} + \sum_{t=2015}^{2017} \gamma_{4Ht} HC_{c0} * D_{a0} + \sum_{t=2015}^{2017} \gamma_{4Nt} N_{c0} * D_{a0} + \gamma_{5H} HC_{c0} * D_{a0} + \gamma_{5N} N_{c0} * D_{a0} + \gamma_{6H} Switch_c * HC_{c0} + \gamma_{6N} Switch_c * N_{c0} + \sum_{t=2015}^{2017} \gamma_{7Ht} HC_{c0} + \gamma_{8H} HC_{c0} + \gamma_9 x_{ct} + \gamma_{10} x_{at} + \varepsilon_{act}$ (A5')

Second Stage: $V_{act} = \beta_0 + \beta_1 M_{act} + \beta_{2H} Switch_c * Post_{ct} * HC_{c0} + \beta_{2N} Switch_c * Post_{ct} * N_{c0} + \beta_{3H} Switch_c * HC_{c0} * D_{a0} + \beta_{3N} Switch_c * N_{c0} * D_{a0} + \sum_{t=2015}^{2017} \gamma \beta_{4Ht} HC_{c0} * D_{a0} + \sum_{t=2015}^{2017} \beta_{4Nt} N_{c0} * D_{a0} + \beta_{5H} HC_{c0} * D_{a0} + \beta_{5N} N_{c0} * D_{a0} + \beta_{6H} Switch_c * HC_{c0} + \beta_{6N} Switch_c * N_{c0} + \sum_{t=2015}^{2017} \beta_{7Ht} HC_{c0} + \beta_{8H} HC_{c0} + \beta_9 x_{ct} + \beta_{10} x_{at} + \nu_{act}$ (A6')

In which x_{ct} and x_{at} are firm-year and account-year covariates that were absorbed in the two-way fixed effects specifications. Since $Post_{ct}$ is undefined for firms that don't switch, we replace it with year dummies when not interacted with $Switch_c$.

The identification setup compares those Default accounts at post-switch Hard Copy (or Notice) firms with (i) those same accounts at the same firm prior to its switch; (ii) with those same accounts at different firms in their portfolio (which may have switched the other way or not

account's share of Default across the firms in its portfolio, an account's original choice of Default at a specific firm, which is also what we use in our figures because it allows for graphical representation.

switched); and (iii) with non-Default accounts at the same firm at the same time. The logic and assumptions underlying this difference-in-difference-in-difference instrumental variable setup are similar to that of Duflo (2001). We do not require that the firm decision to switch materials is exogeneous. The primary assumption is parallel trends in the first and second stage. We only identify the switch between Hard Copy and Notice; the relative effects of E-Delivery are not identified.

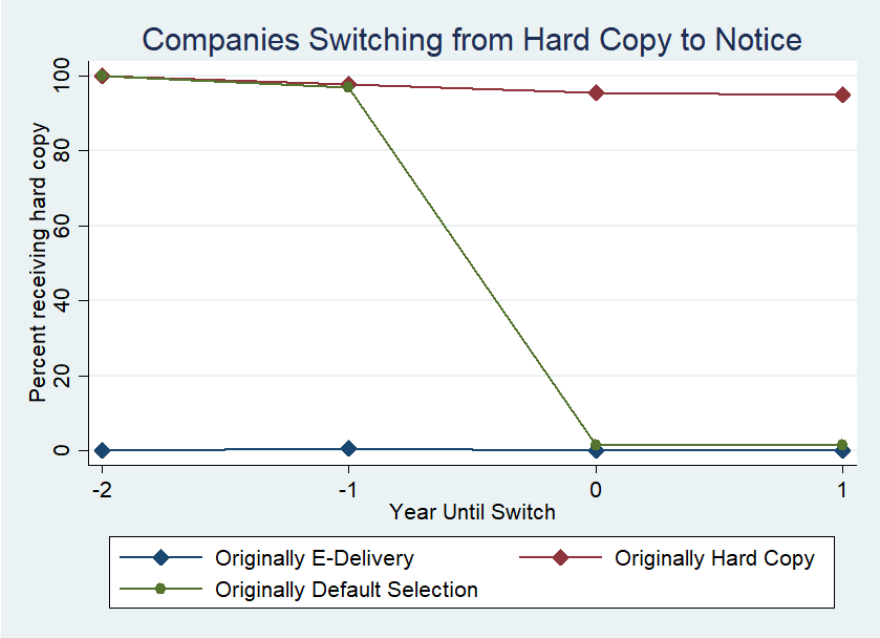
A.6.2 Empirical results

For this section, we subset our data to annual meetings, and, for ease of computation, use a subset of firms consisting of all firms that switched delivery methods a single time in the sample period and a random sample of firms that did not switch. The non-switching firms are not included in our graphs to permit visual representation of switching, and the inclusion or exclusion of the random sample of non-switching firms does not affect our empirical results.

We begin by showing our first stage and second stage results graphically. The graphs are limited to firms that switched their choice of materials in the sample period, that were in the data in all three years of the sample, and that only switch a single time. Companies may switch either from Hard Copy to Notice, or from Notice to Hard Copy; we graph them separately. Because all firms in this subset switch delivery methods at a single time in 2016 or 2017, we can define the "year of switch".

Figure A.6.1, our first stage graphs, shows the portion of accounts *actually* receiving Hard Copy materials leading up to and following the switch, split by whether the account chose E-Delivery, Hard Copy, or Default. The figure at the top shows firms that switched from Hard Copy to Notice; the figure at the bottom shows firms that switched from Notice to Hard Copy. The combination of the firm's choice and the account's original choice is almost completely determinative of the information materials the account actually receives. The bottom lines drift slightly above 0, and the top lines drift slightly below 1, over the course of the time span, because a small fraction of accounts have switched their choice of materials. Both graphs show extremely strong pre-trends. The E-Delivery and Hard Copy groups continue as before following the switch, whereas the Default group switches almost completely, visual evidence that the instrument variable is both extremely strong and valid.

Figure A6.1. Effect of Firm and Account Choice on Receipt of Information Materials



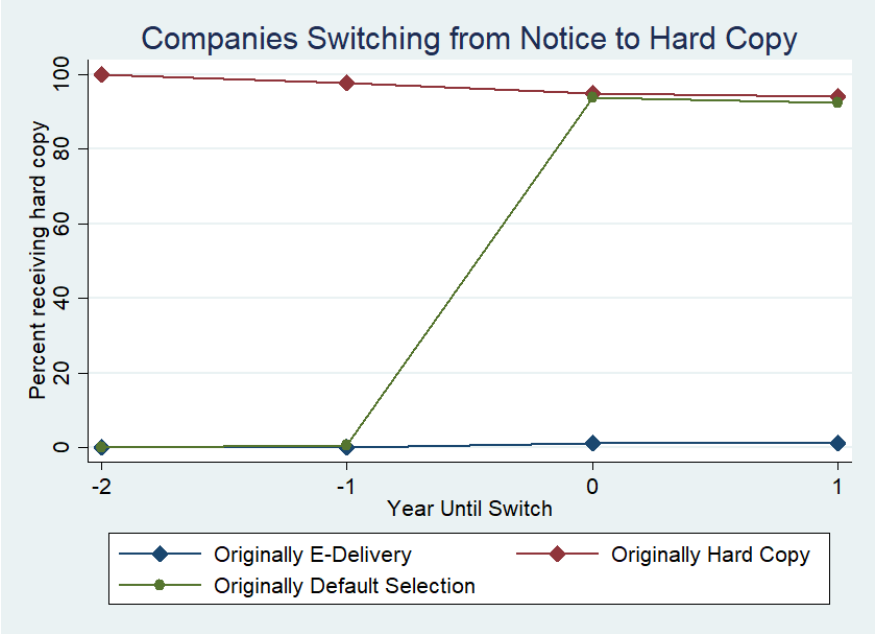
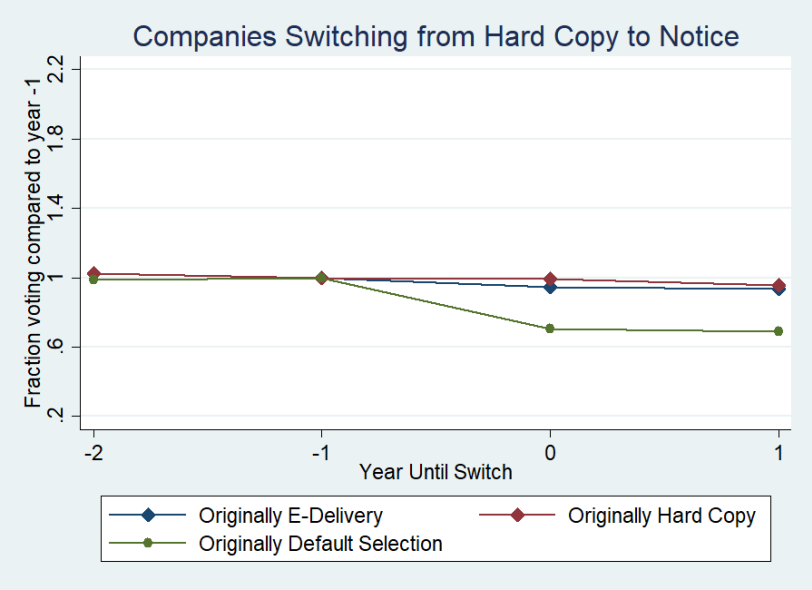
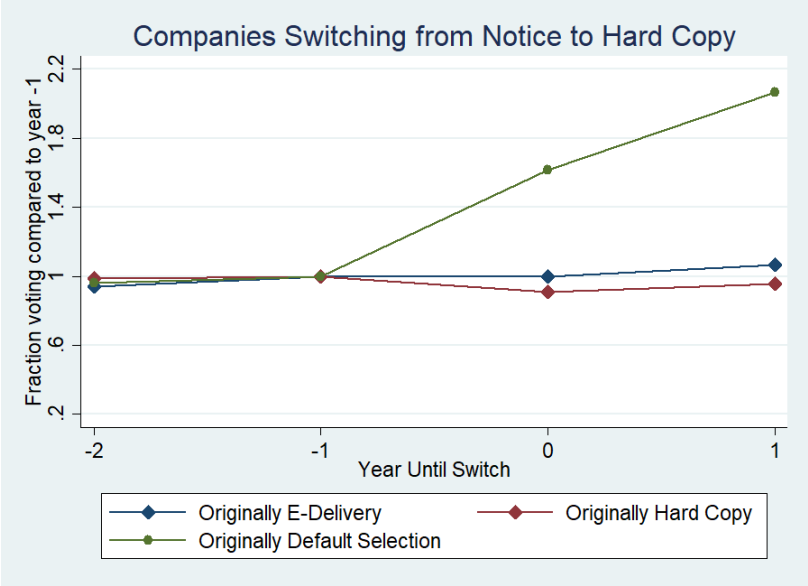


Figure A.6.2, our reduced form graphs, show the fraction voting leading up to and following the switch, split by whether the account chose E-Delivery, Hard Copy, or Default. Because voting rates among voters who originally chose Hard Copy are so much higher than those of other voters, we normalize each line by scaling by the voting rate in year -1. The graphs again show extremely strong pre-trends, with nearly indistinguishable lines between the three groups. The E-Delivery and Hard Copy groups continue as before following the switch, strong placebo tests substantiating our identification strategy. The Default group, on the other hand, sees a large drop in voting rates when firms switch to Notice, and a large rise in voting rates when firms switch to Hard Copy.

Figure A.6.2. Effect of Firm and Account Choice on Turnout





Panel A in Table A.6.1 below provides results of regressions estimating Equations (A5), (A6), and (A7), substantiating the findings of the figures. The table uses two-way fixed effects;. The results are virtually identical to those which use interaction variables instead of fixed effects, as in Equations (A5') and (A6') (notably, in those regressions, $\delta_{2H}, \delta_{2N}, \delta_{3H}$, and δ_{3N} are all insignificant and near zero, indicating that there is turnout is unchanged for non-Default accounts at switching companies post-switch, nor is turnout different for Default accounts at switching firms pre-switch versus non-switching firms). Column 1 contains the first stage, Column 2 contains the reduced form, and Column 3 contains the IV containing the coefficient of interest. The results are robust to a wide range of variations in our specifications.

As before, we find that when Default accounts increase turnout at switching firms post-switch (from Notice to Hard Copy) and decrease turnout at switching firms post-switch (from Hard Copy to Notice). The effect is substantially and significantly larger when firms switch from Notice to Hard Copy than in the opposite direction, suggesting that voting may be sticky.[25] Moving from Notice to Hard Copy increases voting rates in the default group from roughly 6% to 10%, and moving from Hard Copy to Notice decreases voting rates in the default group from roughly 9% to 6%. In unreported results, we conduct the analysis using accounts that switch their choice rather than firms (and instrumenting for firm choice with the firm's original choice), and find very similar results.

We next turn to the question of whether the effect is larger for larger stake sizes and smaller opportunity costs, as predicted by the model. We add in interaction terms as follows; for example, the reduced form equation (A7) becomes:

$$V_{act} = \delta_0 + \delta_{1H} Switch_c * Post_{ct} * HC_{c0} * D_{a0} + \delta_{1N} Switch_{ct} * Post_{ct} * N_{c0} * D_{a0} + \delta_{1HW} Switch_c * Post_{ct} * HC_{c0} * D_{a0} * W_{ac0} + \delta_{1NW} Switch_{ct} * Post_{ct} * N_{c0} * D_{a0} * W_{ac0} + \delta_{2HW} Switch_c * Post_{ct} * HC_{c0} * W_{ac0} + \delta_{2NW} Switch_c * Post_{ct} * N_{c0} * W_{ac0} + \sum_{t=2015}^{2017} \delta_{4Ht} HC_{c0} * D_{a0} + \sum_{t=2015}^{2017} \delta_{4Nt} N_{c0} * D_{a0} + \sum_{t=2015}^{2017} \delta_{4HWt} HC_{c0} * D_{a0} * W_{ac0} + \sum_{t=2015}^{2017} \delta_{4NWt} N_{c0} * D_{a0} * W_{ac0} + \sum_{t=2015}^{2017} \delta_{7HWt} HC_{c0} * W_{ac0} + \theta_{ac} + \phi_{at} + \lambda_{ct} + \eta_{act} \quad \text{(A7')}$$

In which W is a vector of covariates to interact with the treatment. Effectively, we interact W with all terms in the differences-in-differences-in-differences and remove any that are absorbed by the fixed effects; many of the terms that were absorbed by fixed effects in equation (A7) return to the equation when interacted with W. The instruments are now $Switch_c * Post_{ct} * HC_{c0} * D_{a0}, Switch_{ct} * Post_{ct} * N_{c0} * D_{a0}, Switch_c * Post_{ct} * HC_{c0} * D_{a0} * W_{ac0}$, and $Switch_{ct} * Post_{ct} * N_{c0} * D_{a0} * W_{ac0}$.

Table A.6.1, Panel B contains results of regressions estimating interactions with stake size and zip code income. Columns (1) through (3) contain the three first stages, column (4) contains the reduced form, and column (5) contains the IV result.

The results are again striking: the effect of information materials scales with stake size and zip code income as predicted by the model.

[25] Because switching from Hard Copy to Notice is far more common than vice versa, standard errors are considerably lower for the former than the latter.

Table A.6.1. Effect of Information Materials on Turnout

This table reports regressions on shareholder turnout decisions. The sample is limited to annual meetings, and firms that switch delivery methods a single time over the sample period 2015-2017 (along with 200 additional randomly selected firms that did not switch delivery methods), limiting to firms that accounts that appeared in the data in 2015. In the first panel, the instrument is (i) whether the firm switches its information materials choice in the sample period, interacted with (ii) whether the meeting in question in post-switch, interacted with (iii) whether the firm's original choice in the sample period is Hard Copy or Notice, interacted with (iv) the proportion of firms in the account's portfolio in 2015 for which the account chose Default information materials (the "Instrument"). In the first panel, the first column presents the first stage estimation of the likelihood of receiving Hard Copy materials (multiplied by 100) on the Instrument; the second column presents the second stage estimation of the likelihood of voting (multiplied by 100) on the Instrument; and the third column presents the instrumental variables estimation of the likelihood of voting (multiplied by 100) on the receipt of Hard Copy materials. In the second panel, the instruments are the Instrument; the Instrument interacted with Log Stake Value; and the Instrument interacted with Log Zip Code AGI. Log Stake Value is the log of the account's stake in the security defined as the product of share price and number of shares owned. Log Zip Code AGI is the Adjusted Gross Income in the prior calendar year in the account's zip code. In the second panel, the first three columns presents the first stage estimation of the likelihood of receiving Hard Copy materials (multiplied by 100), the likelihood of receiving Hard Copy materials (multiplied by 100) interacted with Log Stake Value, and the likelihood of receiving Hard Copy materials (multiplied by 100) interacted with Log Zip Code AGI, respectively, on the Instrument, the Instrument interacted with Log Stake Value, and the Instrument interacted with Log Zip Code AGI; the fourth column presents the second stage estimation of the likelihood of voting (multiplied by 100) on the three instruments; and the fifth column presents the instrumental variables estimation of the likelihood of voting (multiplied by 100) on the receipt of Hard Copy materials, the receipt of Hard Copy materials interacted with Log Stake Value, and the receipt of Hard Copy materials interacted with Log Zip Code AGI. All regressions include fixed effects for account-firm, account-year, and firm-year. Standard errors clustered at the firm level are in parentheses. *, **, and *** represent significance at the 0.05, 0.01, and 0.001 levels, respectively.

Panel A: Baseline analysis

	First Stage $HardCopyMaterials$	Reduced Form $CastBallot$	IV $CastBallot$
$Switch_c * Post_{ct} * OriginalHardCopy_{c0} * Default_{a0}$	-86.961***	-2.327***	
	(0.614)	(0.252)	
$Switch_c * Post_{ct} * OriginalNotice_{c0} * Default_{a0}$	84.833***	3.974***	
	(0.879)	(0.839)	
$HardCopyMaterials$			3.172***
			(0.339)
$OriginalHardCopy_{c0} * 2015 * D_{a0}$	15.361***	0.710*	0.213
	(0.686)	(0.305)	(0.333)
$OriginalHardCopy_{c0} * 2016 * D_{a0}$	4.039***	0.294	0.106
	(0.615)	(0.269)	(0.297)
N	1,406,262	1,406,262	1,406,262
N clusters	306	306	306
Account-Firm, Account-Year and Firm-Year Fixed Effects	Yes	Yes	Yes

Panel B: Interactions

	First Stage $HardCopyMaterials$	First Stage $HardCopyMaterials$	First Stage $HardCopyMaterials$	Reduced Form $CastBallot$	IV $CastBallot$
$Switch_c * Post_{ct}$	-82.585***	-39.566	54.906	-8.583*	
$* OriginalHardCopy_{c0} * Default_{a0}$					
	(3.558)	(31.723)	(41.656)	(3.618)	
$Switch_c * Post_{ct} * OriginalNotice_{c0}$	86.099***	123.789*	9.140	8.557	
$* Default_{a0}$					
	(6.345)	(55.173)	(78.920)	(5.788)	
$Switch_c * Post_{ct}$	-0.173	-80.427***	-2.170	-0.432***	
$* OriginalHardCopy_{c0} * Default_{a0}$					
$* Log\ Stake\ Value$					
	(0.206)	(1.512)	(2.350)	(0.110)	
$Switch_c * Post_{ct} * OriginalNotice_{c0}$	0.765***	78.637***	8.890***	0.695**	
$* Default_{a0}$					
$* Log\ Stake\ Value$					
	(0.195)	(2.900)	(2.224)	(0.250)	
$Switch_c * Post_{ct}$	-0.243	-1.851	-89.883***	0.851**	
$* OriginalHardCopy_{c0} * Default_{a0}$					
$* Log\ Zip\ Code\ AGI$					
	(0.294)	(2.635)	(3.629)	(0.316)	
$Switch_c * Post_{ct} * OriginalNotice_{c0}$	-0.673	-5.705	77.322***	-0.891	
$* Default_{a0}$					
$* Log\ Zip\ Code\ AGI$					
	(0.578)	(5.327)	(7.295)	(0.491)	
$HardCopyMaterials$					9.188*
					(3.785)
$HardCopyMaterials$					0.647***
$* Log\ Stake\ Value$					
					(0.145)
$HardCopyMaterials$					-0.989**
$* Log\ Zip\ Code\ AGI$					
					(0.328)
N	1,354,917	1,354,917	1,354,917	1,354,917	1,353,699
N clusters	306	306	306	306	306
Account-Firm, Account-Year and Firm-Year Fixed Effects, and Covariates	Yes	Yes	Yes	Yes	Yes

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