The Proxy Advisory Industry:
Influencing and Being Influenced[*]

Chong Shu[†]

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Abstract

Using an innovative method to infer each mutual fund's proxy advisor from previously unnoticed features of its SEC filings, this paper establishes several novel facts about the proxy advisory industry. This industry, although still a duopoly controlled by Institutional Shareholder Services (ISS) and Glass Lewis, has become less concentrated over the last decade. Over 40 percent of the small funds that use ISS's voting platform blindly follow its advice. Negative recommendations from either ISS or Glass Lewis are followed by reductions in its customers' votes by over 20 percent compared with other investors in director elections, say-on-pay, and shareholder proposals. Proxy advisors adjust their recommendations to align with investors' votes, and such alignment results from both information acquisition and preference catering.

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JEL Classification: G23, G34, G38, G40

Introduction

The problem with corporate governance is that most shareholders are rationally apathetic, unwilling to invest in information that allows them to effectively monitor and vote (Berle and Means, 1932). Proxy advisory firms hold the promise of solving this issue by exploiting economies of scale in information collection, allowing investors to vote their interests at low cost. These economies of scale, however, have led the industry to consolidate into effectively two firms – Institutional Shareholder Services (ISS) and Glass Lewis – resulting in little diversity of advice, and the recommendations of proxy advisors are often criticized for containing factual errors and imposing one-size-fits-all governance structures.

Given their growing importance for corporate governance, proxy advisors have attracted considerable recent research attention. Much of this research, however, has been hindered by a basic data limitation: the lack of information that links investors to their proxy advisors. Without knowing which investors receive which recommendations, our picture of the impact of the proxy advisory industry remains necessarily incomplete. For example, previous papers have estimated the influence of proxy advisors by comparing their recommendations with votes pooled across all investors. The typical finding in vote-advice regressions of larger coefficients for ISS's recommendations than Glass Lewis's could be attributed to Glass Lewis having fewer customers or not influencing its customers' votes. Without information that links advisors to voters, it is difficult to reach definitive conclusions on many questions about the industry, ranging from basic issues such as the industry's concentration to more textured inquiries that relate to the determinants of impact.

A key innovation of this paper is that it uses a previously unnoticed feature of regulatory filings to infer each mutual fund's subscription to proxy service, thereby providing a concrete link between fund votes and proxy advisors. Since 2003, mutual funds have been required to report their votes to the SEC by filing Form N-PX. Filers have discretion in how they format the form and describe their votes. Mutual funds rarely perform this potentially time-consuming task themselves, which may involve reporting on tens of thousands of votes each year. Instead, they outsource it to their proxy advisors. I show that, based on the way the form is formatted and how issues are described, one can determine which proxy advisor files the form.

With the information on proxy advisors' customer bases, I am able to provide a sharper characterization of the proxy service market than previously possible, and to conduct new tests that speak to several controversies in the literature. Critics of the proxy advisory industry claim that the industry's concentration empowers ISS and Glass Lewis to significantly sway corporate elections. However, we currently have no rigorous evidence on the proxy advisory industry's competitive landscape.[1] With the information on mutual funds' subscriptions to proxy service,

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[1] A widely circulated conjecture claims that ISS and Glass Lewis jointly controlled 97 percent of the entire proxy advice market. However, the 97 percent figure, from a decade-old survey, is refuted by ISS ("ISS Letter to Senate

I find that, as of 2017, ISS controls 63 percent of the proxy service market for mutual funds in the U.S. ($13.4 trillion in assets from 135 fund families), and that Glass Lewis controls 28 percent ($6.0 trillion in assets from 27 fund families). Contrary to popular belief, I find that the proxy service industry, although still a duopoly, has become less concentrated over the last decade. From 2007 to 2017, the joint market share of ISS and Glass Lewis declined from 96.5 percent to 91 percent, with ISS gradually losing its dominance in the industry.

Some observers raised concern about the possibility of investors blindly following their proxy advisors' recommendations, the so-called practice of robo-voting (Iliev and Lowry, 2015; Doyle, 2018; Placenti, 2018). Without being able to identify investors' proxy advisors, researchers tend to underestimate the severity of robo-voting by inflating the denominators. That is, they compare the number of ISS customers who robo-vote with the entire universe of investors rather than only the number of ISS customers, which is not directly observable. Accurately measuring the extent to which investors blindly follow their proxy advisors is particularly crucial in light of a 2020 SEC rule that gives companies a chance to respond to proxy advisors' analysis before recommendations are sent to investors. The rule is designed to reduce proxy advisors' factual or methodological errors, but it becomes effective only if investors review companies' responses rather than robo-vote with their proxy advisors.[2] I find that the fraction of ISS customers who almost entirely follow its recommendations grew from 4 percent in 2007 to 21 percent in 2017, at which time over 40 percent of small funds (and over 50 percent of small index funds) robo-voted. The finding suggests that without disabling the automatic voting mechanism, the 2020 SEC rule will be much less effective: many investors (especially the small ones) are not likely to review companies' responses to proxy advisors' reports, even if they are given a chance to do so.

To study the impact of proxy advice, previous studies underestimate its influence because votes are pooled across all investors rather than a particular proxy advisor's subscribers. On the other hand, most of them also overestimate the influence because they cannot tease out the possibility that investors and proxy advisors may independently agree on proposal fundamentals so that they vote in the same direction.[3] With the information that links investors to proxy advisors, I examine the votes from a particular proxy advisor's subscribers, and then control for any proposal-specific factors by comparing those votes with other investors' votes on the same proposals. I find that negative recommendations from either ISS or Glass Lewis are followed by significant reductions in their customers' support for the proposal. For example, when ISS rec-

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Banking Committee", 2018).

[2] As the SEC solicited comments in its rule-making, "In instances where proxy voting advice businesses provide voting execution services (pre-population and automatic submission) to clients, are clients likely to review a registrant's response to voting advice?" See SEC Proposed Rule, Release No. 34-87457.

[3] One notable exception is Malenko and Shen (2016), who control proposal fundamentals by utilizing a cutoff in ISS's voting guideline, showing that ISS can sway 25 percent of votes on say-on-pay proposals during 2010-2011. There appear to be no causal studies on either ISS or Glass Lewis's influence on investors' votes for other proposals, such as director elections, which count for over 85% of all votes.

ommends voting against a director's election, its customers are 21 percent more likely than other investors who do not subscribe to ISS to vote against this director. Similarly, when Glass Lewis recommends voting against a director, its customers are 29 percent more likely than other investors to vote against the director. I observe the same pattern for say-on-pay proposals, wherein ISS and Glass Lewis sway 20 percent and 25 percent of their customers' votes, respectively. I also examine the voting patterns of the investors who have changed their proxy advisors. I find that, after a fund switches the proxy advisor from Glass Lewis to ISS, the agreement between its votes and ISS recommendations increases immediately by 24 percent, and its vote agreement with Glass Lewis declines immediately by 21 percent. Similarly, after a fund switches from ISS to Glass Lewis, its vote agreement with Glass Lewis rises by 38 percent, and its vote agreement with ISS decreases by 23 percent.

Given that proxy advisors influence their customers' votes, an important question is how much their advice aligns with what investors desire. I find that both ISS and Glass Lewis adjust their recommendations to align with investors' past votes. Specifically, a 10 percent disagreement between investors' votes and an ISS recommendation is associated with a 5.7 percent chance that the proxy advisor subsequently changes the recommendation when the same proposal reappears on the same firm's ballot. Similarly, for Glass Lewis, a 10 percent vote disagreement can result in a 4.5 percent chance that it changes its recommendation. I also find that ISS appears to respond more to its existing customers, whereas Glass Lewis listens more to funds that do not yet subscribe to any proxy advice.

There are two non-mutually exclusive explanations that proxy advisors respond to investors' disagreement. On the one hand, shareholders may possess specialized information about the company, and proxy advisors listen to investors' votes because it is part of their information-acquisition process. On the other hand, profit-maximizing proxy advisors cater to investor preferences because doing so can retain and attract customers. I find evidence that supports both explanations. Specifically, proxy advisors respond more to disagreement from informed investors, supporting the information-acquisition channel. Furthermore, ISS listens more to investors with strong voting preferences, suggesting that it also caters to investors.[4] Finally, I find that proxy advisors listen more to larger investors, consistent with both the information and the catering explanations.

To understand whether the information acquisition or catering channel dominates, I examine the effect of changed recommendations on the underlying firm value. Specifically, if it is the case that proxy advisors listen to investors predominantly because the latter possess better information, then the changed recommendations would be consistent with value-maximization. If it is the case that proxy advisors listen because they cater to investors with strong preferences, then

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[4]Matsusaka and Shu (2021a) argue that proxy advisors have incentives to cater to the investors with strong voting preferences even in the presence of competition. Intuitively, if some investors place little value on how their votes are cast, the advisor designs its recommendation policy to satisfy the funds that do care.

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the changed recommendations would decrease the firm value. The evidence appears to support the second hypothesis. I find that there is a negative 3 percent abnormal return if the vote outcome is in the same direction as ISS's changed recommendation, indicating that the marginal trader does not appreciate the standpoint that ISS has changed into. This finding provides suggestive evidence that ISS responds to investors' disagreement predominantly because it wants to cater to some investors' preferences to attract their business.

This paper makes several contributions to our understanding of the proxy advisory industry. First, it introduces a method to infer ISS's and Glass Lewis's mutual fund customers from the formats of investors' regulatory filings. From this new information, the paper discovers several novel facts about the industry. For example, I show that, while the industry has become less concentrated during the last decade, a growing number of ISS customers have robo-voted. In addition, whereas most of the literature focuses on the impact of proxy advice on votes, this paper provides the first empirical exploration of the feedback loop from investors to proxy advisor recommendations, showing that proxy advisors cater to investors' preferences, and that such catering may not be consistent with value-maximization.

Related Literature   This paper connects to a growing literature on proxy advisors and institutional investors. Dasgupta, Fos, and Sautner (2020) provide a survey of this literature; here, I will summarize several papers especially related to mine. The research on the influence of proxy advisors' recommendations has produced inconclusive results. Cai et al. (2009), Iliev and Lowry (2015), Larcker et al. (2015), and Malenko and Shen (2016) show that ISS has significant influence over investors' votes, ranging from 19% to 25% of votes. In contrast, Choi et al. (2009) show a much-dampened effect of 6%–10%. Among these papers, Malenko and Shen (2016) provide causal interpretations for ISS's influence on say-on-pay proposals in 2010-2011 by using a cutoff in ISS's voting guideline. There appear to be no causal studies on either ISS's or Glass Lewis's influence on investors' votes for other types of proposals. Matsusaka and Shu (2021b) utilize the same methodology as the present paper to show that proxy advisors do not make their customers' votes more informative.

Theoretical works on proxy advisors are sparse but growing. Malenko and Malenko (2019) develop a model to study the provision of information by proxy advisors. Levit and Tsoy (2021) show that proxy advisors can conceal their conflicts of interest by offering one-size-fits-all recommendations. Buechel, Mechtenberg, and Wagner (2021) analyze the conditions under which proxy advisors improve corporate decisions. Recent works, such as Ma and Xiong (2021), Malenko, Malenko, and Spatt (2021), and Matsusaka and Shu (2021a), study proxy advisors' distorted incentives for providing accurate advice. Ma and Xiong (2021) analyze proxy advisors' conflicts of interest. Malenko et al. (2021) show that proxy advisors have incentives to create controversy by biasing their recommendations. Matsusaka and Shu (2021a) show that proxy advisors cater to biased shareholders such as SRI funds and study the industry's equilibrium that

emerges.

1 Method to Link Mutual Funds to Proxy Advisors

1.1 Data Sources

Data are compiled across several sources. The initial sample contains the entire mutual fund voting records between 2006 and 2017. Since 2003, mutual funds have been required to report their entire voting record on Form N-PX to the SEC each August. I collect those forms directly from the SEC's EDGAR website. I then link each N-PX form to the ISS Voting Analytics database using the form's accession number, a unique identifier to EDGAR submissions. The ISS Voting Analytics dataset tabulates mutual funds' votes on those N-PX forms. It also provides each proposal's final vote outcome and ISS's recommendation. Because accession numbers only appear in the Voting Analytics dataset after 2006, I restrict the sample of votes to 2006–2017. The final sample contains 82 million votes on 15,886 N-PX forms and covers 20,654 mutual funds' voting records on 438,793 proposals.

While the Voting Analytics database provides ISS's recommendations, Glass Lewis's recommendations are not publicly available. I obtained Glass Lewis's recommendations for 2008–2017 through a Freedom of Information Act (FOIA) request to a large public pension. I asked for the name of the pension fund's proxy advisor and the recommendations it received from this advisor. I match those recommendations with the main dataset using company names, meeting dates, and item numbers. I can find Glass Lewis's recommendations for 2590 companies, covering over 80% of the total assets for companies in my main dataset. The Online Appendix IA.1 provides a screenshot for the FOIA response and a detailed description of the matching process.

I collect mutual funds' characteristics from the CRSP Mutual Fund Database. I merge fund characteristics with my main voting dataset using CIK numbers, which are unique ten-digit numbers that the SEC assigns to filers.[5] Following Bolton et al. (2020) and Iliev et al. (2020), I conduct my analysis at the fund-family level. I first aggregate fund-level observations (82 million votes from 20,654 funds) to the CIK level (39 million votes from 2,250 CIKs), and I then aggregate CIK-level observations to the fund-family level using "mgmt_cd", the CRSP's identifier for fund families. After this process, the aggregated dataset contains 15 million votes from 501 fund families. It covers 420,391 proposals from 7,897 companies during 2006–2017. To avoid verbosity, I occasionally refer to a fund family as simply a fund throughout the rest of the paper.

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[5]As noted by Matvos and Ostrovsky (2010) and Iliev and Lowry (2015), there is no unique fund identifier common to both ISS Voting Analytics and CRSP. They proceed by matching the two datasets using fund names. Unlike their methods, I match the two datasets using CIK numbers. My method generates more precision in matching, except that different mutual funds within the same fund family sometimes have an identical CIK. This is not a concern for my analysis because I aggregate votes to the fund-family level, following Bolton et al. (2020) and Iliev et al. (2020). The ISS Voting Analytics does not provide mutual funds' CIK numbers. I collect CIK numbers from N-PX forms' header files.

Information on mutual funds' ideology preferences is provided by Bolton et al. (2020). Table 1.A displays the number of votes and proposals during my sample years. Table 1.B and 1.C report summary statistics at the proposal and the fund-family level.

I obtain mutual funds' views of proxy statements on the SEC Edgar website through its server log file, a record of all activity on the system, which includes each viewer's partially anonymized IP address, the time of the view, and the accession number of the viewed file. To map partially anonymized IP addresses to fund families, I first deanonymize IP addresses using the cipher provided by Chen et al. (2020) and then map the full IP addresses to organization names using linking datasets provided by MaxMind and the American Registry of Internet Numbers. I then hand-match fund families using their names. I can match 282 out of 501 fund families that appear in the voting dataset. To match a proxy statement's accession number to an annual meeting in the voting dataset, I first scraped the proxy statement's header file to get its CIK number and "Period of Report." Then, I match the CIK number and the "Period of Report" with an annual meeting's CUSIP and meeting date.[6]

1.2 Voting Platforms and Identities of Proxy Advisors

For each vote on an N-PX form, a mutual fund must disclose (a) the information about the annual meeting (company name, meeting date, etc.), (b) a brief description of the proposal, and (c) how the fund voted. Until a newly proposed rule to enhance proxy voting disclosure, there were no requirements for funds to use a common machine-readable N-PX format or a standardized description of each proposal.[7] Historically, the fillers have had the discretion on how to tabulate, format, and characterize their votes and the issues on which they vote.[8] Mutual funds rarely prepare or file N-PX forms themselves. Instead, they outsource those tasks to their voting platform providers. This is not surprising; most mutual funds have to cast, manage, or report thousands of votes each year, a complicated and time-consuming process that, for some, is just a distraction from their core business. It is hence also unsurprising that the fee to use a proxy voting system is as much as twice the price of the proxy advice itself.[9]

There are three dominant voting platforms: ProxyExchange, Viewpoint, and ProxyEdge. All

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[6]In a proxy statement, the "Period of Report" is its meeting date. See https://www.sec.gov/info/edgar/edgarfm-vol2-v5.pdf (page 6-31).

[7]See SEC Proposed Rule, Release No. 34-93169. The proposed rule asks N-PX filers to (a) tie the description of the voting matter to what appears on proxy statements, (b) report the information in a structured data language via an SEC-supplied form, and (c) report the number of shares voted.

[8]For example, BlackRock's N-PX form described the fifth proposal of Apple Inc's 2019 annual meeting as "Disclose Board Diversity and Qualification." JP Morgan Funds described it as "A shareholder proposal entitled True Diversity Board Policy," and TIAA Funds described it as "Shareholder Proposal regarding Disclosure and Board Qualifications." The three N-PX forms also exhibit different formats.

[9]The fees charged by proxy advisors are typically confidential. I collected price information from 11 public pension funds through Freedom of Information Act requests. In the Online Appendix IA.3, I show that the average payment for proxy advice was $69,080, with an additional charge of $161,290 to use the proxy voting system.

three provide vote reporting services that tabulate their customers' votes and prepare the required N-PX forms. They also offer optional add-on vote disclosure services that interactively display their customers' votes on their websites. Owners of two voting platforms are proxy advisors: ISS owns ProxyExchange, and Glass Lewis owns Viewpoint. The third platform, ProxyEdge, is owned by Broadridge, a fintech firm that does not provide proxy advice. Users of ISS's or Glass Lewis's voting platform also have access to the firm's proxy advice.[10]

Identifying each mutual fund's use of a voting platform consists of three steps. In the first step, I identify common formats among all N-PX filings. I find that there are four most commonly used N-PX formats, denoted A.1, A.2, B, and C. Figure 1 displays one example for each of the four common formats. In the second step, I compare proposal descriptions on those four N-PX forms with those on the three voting platforms' vote disclosure services websites (VDS) to link formats to voting platforms. I find that proposal descriptions on type A.1 and type A.2 N-PX forms are identical to those on ISS's VDS websites, that proposal descriptions on type B N-PX forms are identical to those on Glass Lewis's VDS websites, and that type C corresponds to Broadridge's VDS. In the Online Appendix IA.2, I describe in greater detail how I link the four N-PX forms to their respective voting platforms. In the final step, I use each N-PX form's column names to detect its format type (A.1, A,2, B, C, or none of them) and then use the type to identify each fund's use of a voting platform. Table 2 displays the number of votes and fund families that use each of the three voting systems.

While I am able to accurately identify each mutual fund's voting platform, the inference from its voting platform to the source of proxy advice may come with both Type I and Type II measurement errors. For Type I measurement error, a fund may subscribe to both ISS's and Glass Lewis's proxy advice but only use one platform for voting. For Type II measurement error, a fund that does not subscribe to any proxy advice may use proxy advisors' voting systems for tabulation/dataset services. Both error types can correlate with fund incentives; for example, large investors, especially the Big Four (BlackRock, Vanguard, Fidelity, and State Street), subscribe to both ISS's and Glass Lewis's proxy advice. I will discuss the effects of those errors when presenting the main results.

1.3 Concentration in the Proxy Service Industry

Some observers are concerned that the concentration of the proxy service industry empowers the two firms – ISS and Glass Lewis – with too much significant influence in corporate elections. It is often claimed that the two firms jointly control 97 percent of the entire proxy advice market. However, this widely cited number is inferred from a decade-old survey, which thus does little

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[10]In ProxyExchange's marketing document, ISS states that "[ProxyExchange is] one integrated platform for proxy research, voting, and reporting." Regarding Viewpoint, Glass Lewis states that "in-depth Proxy Paper reports are accessible for every meeting you vote." The funds that use Broadridge's ProxyEdge can either subscribe to a boutique proxy advisor or do not subscribe to any proxy advisor.

to inform us about the industry's current and changing competitive landscape.[11]

To infer each proxy advisor's market share from the information on mutual funds' uses of different voting platforms, I aggregate ISS's and Glass Lewis customers' total net assets (TNA) and calculate the fraction for each of the total TNA of all mutual funds in my sample. Figure 2 displays the evolution of the proxy service industry's competitive landscape from 2007 to 2017. The green area represents mutual funds that use voting systems other than ISS and Glass Lewis. I find, in contrast to popular belief, that the proxy service industry has become less concentrated: as of 2017, ISS and Glass Lewis jointly control 91 percent of the market, compared with 96.5 percent in 2007. ISS is gradually losing its market share (from 74 percent in 2007 to 63 percent in 2017) to Glass Lewis and other boutique proxy advisors.

One concern with my measurement is that large fund families, especially the Big Four, usually subscribe to both ISS and Glass Lewis for proxy advice but use only one firm's voting platform. To alleviate this measurement error, Figure 2's Panel B and C repeat the analyses after excluding the Big Four and the top 10% largest fund families, respectively. Again, we observe that the proxy advisory industry has become less concentrated during my sample years.

2 How do Proxy Advisors Influence Votes?

2.1 Robo-Voting

The problem with investors blindly following proxy advisors, a so-called practice of robo-voting, has concerned many industry participants and regulators. A survey given to one hundred issuers shows that around 20 percent of votes are executed within three business days after ISS issues its recommendations (Placenti, 2018). Accurately measuring the extent to which investors automatically execute votes is particularly crucial in light of a 2020 SEC rule giving companies a chance to respond to a proxy advisor's analysis. The rule is intended to reduce proxy advisors' factual errors but will be only effective if investors review companies' responses rather than robo-vote with their proxy advisors. As the SEC solicited comments in its preliminary proposed rule, "In instances where proxy voting advice businesses provide voting execution services (pre-population and automatic submission) to clients, are clients likely to review a registrant's response to voting advice?[12]"

Researchers have attempted to measure the extent to which investors robo-vote (Iliev and Lowry, 2015; Doyle, 2018). However, without the information on each proxy advisor's subscribers, they tend to underestimate the severity of the problem: to gauge the extent to which

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[11]Perhaps more concerning is that the estimation relied on survey participants' self-reporting. ISS rejects the figure, claiming that "while we have seen the widely circulated conjecture that two firms control 97% of the proxy advisory industry, this is not a statistic we have verified or can confirm." Prior to this paper, scholars struggled to identify each proxy advisor's market share based on publicly available information.

[12]See SEC Proposed Rule, Release No. 34-87457.

ISS's subscribers have robo-voted, they compare the number of ISS customers who have robo-voted to the entire universe of investors rather than to only the number of ISS customers. For example, Iliev and Lowry (2015) remarked that "to the extent that some funds rely on a proxy advisory service other than ISS, [they] actually underestimate the frequency of passive voting."

The information on each proxy advisor's customer base enables us to more accurately estimate the prevalence of robo-voting. I define an investor as an ISS robo-voter in a particular year if all of the following three conditions hold: (i) the fund is an ISS customer; (ii) its votes are aligned with ISS recommendations on more than 99.9 percent of the time; and (iii) its votes are aligned with ISS recommendations on more than 99.9 percent of proposals where ISS and management disagrees. This is a restrictive definition for robo-voting given that the third condition implies that a robo-voter sides with management less than 0.1 percent of the time. It is hence unlikely that the flag for robo-voting is due to the coincidental agreement between the investors and ISS.[13] I define Glass Lewis robo-voters analogously.

Figure 3.A displays the number and the fraction of ISS robo-voters. The result suggests that the practice of robo-voting among ISS customers has been rising in popularity. From 2007 to 2017, the fraction of robo-voting ISS customers grew from 4 to 21 percent (the fraction of votes that robo-voted grew from 2 to 14 percent). On the contrary, Figure 3.B suggests that it is uncommon for Glass Lewis customers to robo-vote. Furthermore, investors can blindly rely on management's recommendations, especially among those who do not subscribe to any proxy advice. Indeed, Figure 3.C indicates that robo-voting with management is also widespread: in 2017, 15 investors, none of which subscribe to any proxy advice, blindly followed management's recommendations.

One immediate question is: who are those robo-voters? Are they index funds that have less incentive to pay due diligence in voting, as suggested by Lund (2017) and Heath et al. (2021)? To answer this question, Table 3 reports the results of OLS regressions on whether a fund is a robo-voter as a function of its characteristics. The result suggests that ISS customers who provide index products are 6 percent more likely to robo-vote than non-indexers. Additionally, indexers who subscribe to neither ISS nor Glass Lewis are 5 percent more likely to follow management recommendations blindly. These findings comport with the argument of Lund (2017) that index funds lack incentives to ensure well-run companies because they do not seek to outperform the index. Nevertheless, the result is not inconsistent with Appel et al. (2016), who argue that passive investors exert influence on corporate governance through their large voting blocs. In fact, Table

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[13]My definition is more restrictive than those of Iliev and Lowry (2015) and Doyle (2018), who require only the second condition but not the third (and they cannot require the first condition). Given that most proposals are not contentious, using the 99.9 percent threshold on all proposals is unlikely an accurate indicator for robo-voting. For example, Doyle (2018) flags the mutual fund AQR as a robo-voter because the fund family followed ISS's recommendations on more than 99.9% of all proposals in 2017. However, if we restrict the sample to contentious proposals, AQR agreed with ISS only 97.5% of the time. This is not within my definition of robo-voting. In fact, there were 36 contentious proposals for which AQR's votes deviated from ISS's recommendations.

3 also suggests that doubling a fund family's total asset size can decrease the probability of it being an ISS robo-voter by 4 percent and of being a management robo-voter by 2 percent.

Figure 4 illustrates the prevalence of robo-voting among investors with different asset sizes. In Part A, we see that around half of the smallest ISS customers have robo-voted in 2017. The figure also suggests that larger investors and non-indexer investors are less likely to robo-vote. The fact that none of the top 20% largest funds – which tend to subscribe to both ISS's and Glass Lewis's proxy advice – robo-voted alleviates the concern about the Type I measurement error in estimating the popularity of robo-voting. In Part B, we observe that the rise of popularity in robo-voting is particularly salient among smaller investors, rising from less than 5 percent to more than 40 percent.

2.2 Votes from Proxy Advisor Customers

Proxy advisors give voting recommendations on a large number of corporate policies while maintaining a tiny workforce.[14] Their advice has been criticized for exerting undue influence on the governance of corporations. However, research on the role of proxy advice on investors' votes has produced inconclusive results.[15] One difficulty in estimating proxy advisors' influence arises from the unobserved firm and proposal characteristics that affect both investors' votes and proxy advisors' recommendations. Specifically, relying on correlations between votes and recommendations can result in an upward bias in the interpretation of proxy advisors' influence. Furthermore, researchers can underestimate proxy advisors' influence because votes are pooled across all investors rather than a particular proxy advisor's customers.

Figure 5 displays investors' votes under different proxy advisor recommendations. In Panel A, we observe that, when ISS opposes a company's management, investors' support for management declines 44 percent. On the contrary, Glass Lewis's opposition to management is followed by only a 12 percent reduction in investors' support. It is not obvious whether the smaller reduction is because Glass Lewis has fewer subscribers or because its recommendations are less impactful. To investigate, Panel B separates votes depending on investors' use of different voting systems. We observe that negative recommendations from either ISS or Glass Lewis are followed by a large withhold in support by the customers of this particular proxy advisor compared with by other investors. This result suggests that the difference in reduction we observe in Panel A results primarily from the fact that ISS has more subscribers than Glass Lewis, and that their recommendations are similarly impactful on their customers.

As mentioned earlier, investors and proxy advisors observe the same proposal fundamen-

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[14]For example, Sharfman (2020) notes that, in 2017, ISS produced recommendations for 250,000 elections across 40,000 shareholder meetings with a research and data staff of 460 persons.

[15]For example, Cai et al. (2009), Iliev and Lowry (2015), Larcker et al. (2015), and Malenko and Shen (2016) show that ISS can influence a large amount of votes, ranging from 19% to 25% of votes. On the contrary, Choi et al. (2009) show a much-dampened effect, 6%–10%.

tals, so it may be unsurprising that they reach the same conclusion. To control for unobserved proposal fundamentals, I then compare a particular proxy advisor customers' votes with the votes of other investors on the same proposals. This method controls for any proposal-specific factors because both groups face the same proposal fundamentals; the only difference is that one has access to the proxy advisor's recommendations, and the other most likely does not.[16] Specifically, I use the following equation to estimate the difference between the votes of a particular proxy advisor's customers and the votes of other investors. Each observation represents a fund-vote in a proposal: i denotes the fund family, and p denotes the proposal. The dependent variable "Agree with PA$_{ip}$" is a dummy that equals one if the vote is in the same direction as the recommendation of a proxy advisor (ISS or Glass Lewis). The regression controls for fund characteristics, and, more importantly, it includes the proposal fixed effect, which controls for the unobserved proposal-specific factors.

$$\text{Agree with PA}_{ip} = \beta_1 \cdot \text{PA Customer}_{it} + \boldsymbol{\gamma}' \cdot \boldsymbol{Z} + a_p + \varepsilon_{ipt} \tag{1}$$

Table 4 reports the results of OLS regressions. We see that, when either ISS or Glass Lewis supports management, its customers are two percent more likely than other investors to support the management. Among those uncontentious proposals, many of which are routine issues such as ratifying auditors, the baseline agreement between votes and recommendations is already high (over 90 percent). A two percent increase in support is thus a meaningful effect from a proxy advisor's certification. Furthermore, we also observe in Table 4 that either ISS or Glass Lewis's opposition to management is followed by a 21 percent additional reduction in support for the management from the proxy advisor's customers compared with other investors.

The above results on ISS's influence on its customers are consistent with the findings of Malenko and Shen (2016). My results further suggest that Glass Lewis's influence follows a similar pattern. My approach also enables us to analyze investors' votes on other issues, for example, director elections, which, according to Cai et al. (2009) and Fos et al. (2018), have far-reaching implications for corporate governance. In Table 5, we observe that there is a 21 to 29 percentage withhold in support if the investor's proxy advisor opposes an election of a director and a 20 to 25 percentage withhold in support if the investor's proxy advisor opposes a say-on-pay proposal. Figure 6 repeats the analyses for other shareholder proposals, and the pattern remains.

To better relate my results to Malenko and Shen (2016) – who study the influence of ISS recommendations on total votes, I repeat the analyses in Table 5's Panel A by restricting the sample of say-on-pay proposals to the ones where Glass Lewis supports the management. The regression coefficients, shown in the Online Appendix IA.5, suggest that exogenously changing ISS's

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[16]To the extent that some investors subscribe to both ISS and Glass Lewis's proxy advice but use only one voting system – the Type I measurement error – these estimations are actually conservative measures of proxy advisors' influence.

recommendations from "For" to "Against" while keeping Glass Lewis recommendations unchanged will reduce the total support of the proposal by $(0.01 + 0.38) * 63\% = 24.6\%$, consistent with Malenko and Shen (2016). Similarly, exogenously changing Glass Lewis's recommendations from "For" to "Against" while keeping ISS recommendations unchanged will reduce the total support of the proposal by $(0.00 + 0.38) * 28\% = 10.6\%$. Those back-of-the-envelope calculations suggest that ISS has greater *total* influence than Glass Lewis because it has a greater market share rather than because its recommendations are more impact on its customers.

2.3   Investors that Change Proxy Advisors

Another way to gauge proxy advisors' influence is to examine voting patterns of investors that switched proxy advisors. Throughout my sample, 22 fund families switched from using ISS's voting platform to using Glass Lewis's platform, and 10 fund families switched from Glass Lewis to ISS. Consider the following regression.

$$\text{Agree with PA}_{i,t+1} - \text{Agree with PA}_{i,t} = \beta_0 + \beta_1 \cdot \text{Switch}_{it} + \boldsymbol{\gamma}' \cdot \boldsymbol{Z} + \varepsilon_{it} \qquad (2)$$

where "Agree with PA$_{i,t}$" is the fraction of fund i's votes that are cast in the same direction as the proxy advisor's recommendations in year t. As in Equation 1, the fraction can be calculated by using proposals on which the proxy advisor supports or opposes management. The independent variable "Switch$_{it}$" is a dummy variable that represents whether the fund switches its proxy advisor between the year t and the year $t+1$.

Table 6 reports the results of the estimation. In Panel A, we observe that, after a fund switches from an ISS customer to a Glass Lewis customer, its votes become 4 to 23 percent less likely to be cast in the same direction as ISS recommendations depending on whether ISS supports or opposes management. On the other hand, its votes are 4 to 38 percent more likely to be aligned with Glass Lewis recommendations depending on whether the proxy advisor supports or opposes management. In Panel B, we can observe similar results for investors that switch their proxy advisors from Glass Lewis to ISS.

Figure 7 displays the evolution of investors' vote patterns before and after they switch proxy advisors. Panel A examines the votes of funds that have switched from ISS to Glass Lewis, and Panel B shows the votes of funds that have switched from Glass Lewis to ISS. Each panel's first two figures plot the switching funds' "excess" agreement with ISS, and the last two figures plot the funds' "excess" agreement with Glass Lewis. The "excess" agreement with a proxy advisor is the percentage of the fund votes that agree with the proxy advisors' recommendation minus that of the benchmark. For the benchmark, the first and third figures use the switching fund's vote agreement with the proxy advisor in the switching year (for time-series comparison). The second and fourth figures use the average vote agreement with the proxy advisor's recommendations among investors who subscribe to the switching fund's former proxy advisor (for cross-sectional comparison).

2.4 Investors' Voting Preferences

Bolton et al. (2020) and Bubb and Catan (2022) argue that investors have different social and governance preferences. They further argue that those preferences can be inferred from their voting records and represented as positions along two dimensions. One might hence worry that the findings in section 2.2 – that an investor votes similarly to its proxy advisor – may result from the fact that proxy advisors and their customers have similar voting preferences irrespective of recommendations. For example, Panel A in Figure 8 shows that votes from ISS customers tend to be more socially conscientious and that Glass Lewis customers tend to be tougher on governance issues. On the one hand, those preferences, which are estimated from their voting records, may be influenced by ISS's and Glass Lewis' recommendations; on the other hand, they may simply reflect the investors' underlying ideologies.

To distinguish proxy advisors' influence from investors' self-selection, section 2.3 has examined a fund's voting pattern before and after it switches proxy advisors. This approach is similar to including a fund fixed effect in Equation 1, hence controlling for the time-invariant fund characteristics.[17] To further control for the time-variant self-selection, I match each vote by a particular proxy advisor's customers with another vote on the same proposal by a non-customer using the nearest neighbor search. I require that the two votes come from investors with similar social and governance preferences and thus differ only in regard to their use of proxy advisors. Specifically, the Euclidean distance between the two investors' two-dimensional ideologies score estimated using the Bolton et al. (2020) method must be smaller than 0.1. Figure 8 Panel B displays investors' social and governance preferences after matching. Table 7 compares the votes by a proxy advisor's customers with the votes in the matched sample. The result suggests that, even after taking into consideration of investors' selection into different proxy advisors due to their different social and governance preferences, proxy advisors' recommendations still sway their subsequent votes, though the magnitude of ISS's influence is reduced.

3 How Can Proxy Advice Be Influenced?

Malenko and Shen (2016) show that ISS recommendations play a significant role in investors' votes on say-on-pay proposals. My evidence further suggests that proxy advisors also influence votes in director elections and other shareholder-sponsored proposals. From a normative perspective, nevertheless, it is not clear whether proxy advisors' influence creates or destroys value. On the one hand, proxy advisors provide an independent source of information, and they also

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[17]To further control for funds' voting preferences, I also restrict the sample of switching funds to those that do not change their proxy voting guidelines. Mutual funds occasionally disclose how they may vote on their prospectus. For example, Thrivent Funds changed its proxy advisor from Glass Lewis to ISS between 2011 and 2012 but did not change any word of its 3-page proxy voting guidelines on its 2011/2012 prospectus (except "Glass Lewis" was changed to "ISS"). The results in section 2.3 continue to hold and are provided in the Online Appendix.

aggregate investor preferences.[18] On the other hand, they are for-profit companies, and as a result, their advice potentially suffers from conflicts of interest. For example, Matsusaka and Shu (2021a) argue that proxy advisors are incentivized to cater more to investors with polarized preferences, and thus that the equilibrium recommendations do not reflect the preferences of a median voter.[19] In this section, I will demonstrate whether proxy advisors cater to investor preferences and whether such catering is aligned with value-maximization.

3.1 Proxy Advisors' Response to Investors' Disagreement

To study whether proxy advisors listen to investors, I examine the relationship between their recommendations and investors' past votes. Table 8 displays the frequency with which ISS or Glass Lewis changes its recommendations on different issues. I define a proposal on which ISS or Glass Lewis changes its recommendations if the proxy advisor supports (opposes) the proposal in the current year and opposed (supported) the same company's same proposal when it last appeared. For director elections, I use the director's name to link elections across different years within a company, and, for proposals of other types, I use their general descriptions to link them. We observe that both proxy advisors have regularly changed their standpoint on almost every issue (except for board declassification, which both proxy advisors always support).

Table 9 reports the regression results of whether ISS or Glass Lewis changes its recommendation as a function of investors' disagreement with the advisor's past recommendations. Columns 3 and 7 include the Firm×Proposal effect to control for the firm- and proposal-specific characteristics. The result indicates that a 10 percent additional disagreement between investors' votes and ISS recommendation will result in a 5.7 percent additional chance that the proxy advisor subsequently changes its recommendation when the same proposal reappears in the same company. Glass Lewis also listens to investors: a 10 percent additional disagreement between investors' votes and its recommendations will result in a 4.5 percent additional chance that it changes its recommendation.

Panel A's Columns 4 and 8 include the proposal type × proposal age fixed effect, where the proposal age is the number of years since the same proposal first appeared on the firm's ballot. The purpose of this analysis is to alleviate the possibility that there exists initial uncertainty about certain types of proposals among both investors and proxy advisors due to unfamiliarity. The results continue to hold. In Panel B, we observe that the feedback from investors' votes to proxy advisor recommendations appears in director elections and say-on-pay proposals but to a lesser extent for shareholder-sponsored proposals on which ISS does not respond to investors'

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[18]For example, Aggarwal et al. (2014) present evidence that proxy advisors respond to changing public opinions. Larcker et al. (2013) show that proxy advisors regularly hold roundtables with industry groups, although the authors also argue that ISS's data collection process relies on a very small number of participants.

[19]Other work also highlighted proxy advisors' conflict of interest. For examples, see Li (2018), Levit and Tsoy (2021), Ma and Xiong (2021), and Malenko et al. (2021).

dissent.[20] Another interesting finding, shown in Panel C, is that ISS appears to cater more to its existing customers, whereas Glass Lewis caters more to funds that are not yet proxy advisor customers. The finding alludes that ISS's main objective is to maintain its dominance, while Glass Lewis's objective is to expand its business.

There are two non-mutually exclusive explanations for the observation that proxy advisors change their recommendations after investors' disagreement. On the one hand, investors may possess better information, and proxy advisors thus may learn from their disagreement. In other words, proxy advisors may realize they have made an error if they find that many investors deviate from their recommendations. On the other hand, proxy advisors may align their recommendations to investor preferences because doing so can retain and attract customers and hence increases profits. To examine those two explanations, I study the characteristics of investors to whom proxy advisors listen more. If the change of recommendations is part of proxy advisors' information-acquisition process, we expect that they listen more to investors with a greater amount of information on the proposal. On the other hand, suppose the change is due to proxy advisors' catering to investor preferences. In that case, we expect that they respond more to investors with stronger voting preferences because those are the investors that actively select different proxy advisors. For both explanations, we would also expect proxy advisors to listen more to larger investors because they have more resources to be informed while also meaning greater revenues to proxy advisors.

Table 10 Panel A indicates that proxy advisors indeed respond more to investors with greater amounts of assets. Specifically, an additional 10 percent disagreement from larger investors induces a 3.7 to 4.4 additional chance that a proxy advisor subsequently changes its recommendations; in contrast, a 10 percent disagreement from smaller ones leads to only a 0.7 to 1.2 percent additional chance. Panel B of the table suggests that part of the reason that proxy advisors listen to investors is that they gather information from investors' votes. This is because both ISS and Glass Lewis respond more to investors who have visited the proposal's proxy statement on the SEC Edgar website before voting.[21] To control for fund family size, a vote with Edgar visit is matched with a vote absent of Edgar visit from a fund with the closest total net assets. Furthermore, in Panel C, we observe that ISS appears to listen more to investors with strong voting preferences, measured by whether the investor's W-NOMINATE score is in the two extremes. This finding comports with the argument of Matsusaka and Shu (2021a) that proxy advisors cater to investors with extreme preferences.

Proxy advisors are for-profit companies. They have incentives to respond to investors' dis-

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[20]Matsusaka and Shu (2021b) show that ISS appears to be opinionated on those proposals and is generally more shareholder-friendly than most of the informed investors.

[21]Iliev et al. (2020) supply corroborating evidence that an investor's visit to the SEC Edgar website is a reasonable measure about its information on a particular proposal. It is, however, a noisy measure; investors can get information about a company through other sources. To the extent that the Edgar visit is irrelevant, we would not find any differences in proxy advisors' response to whether investors have visited Edgar.

agreement regardless of whether doing so stems from their information acquisition process or their preference catering motives. Simply put, they wish to attract and retain customers. To test whether this is the case, Table 11 examines the relationship between an investor's past agreement with the two proxy advisors' recommendations and the investor's subsequent choice of its proxy advisor. The result shows that a 10 percent additional agreement with ISS recommendations can induce an extra 10.6 percent chance that an existing Glass Lewis customer switches to ISS, and an extra 1.9 percent chance that investors that have not subscribed to either ISS or Glass Lewis to choose ISS in the subsequent year. Similarly, a 10 percent additional agreement with Glass Lewis recommendations results in an extra 1 percent chance that these non-committed investors choose Glass Lewis. These results indicate that having a similar stance with investors indeed helps proxy advisors attract potential customers and retain existing ones.

3.2   Effects of Proxy Advisors' Catering on Underlying Firms

Thus far, we have seen that proxy advisors listen to investors. Evidence suggests that such listening can be due to both (i) proxy advisors' information-acquisition process and (ii) their incentives to cater to investors' preferences, particularly those with strong views. To further investigate whether the information acquisition or the catering motive dominates, I examine the effect of proxy advisors' changed recommendations on the underlying firm values. Specifically, if it is the case that proxy advisors listen to investors predominantly because the latter possess better information and proxy advisors learn from their disagreement, then the changed recommendations would be consistent with value-maximization. On the other hand, if it is the case that proxy advisors listen because they cater to investors with strong preferences – because doing so increases their own profits, as argued by Matsusaka and Shu (2021a) – then the change of recommendation would not be aligned with value-maximization and should decrease firm value.

I examine the effect of whether a vote outcome is in the same direction as a proxy advisor's recommendation on the firm's cumulative abnormal return (CAR). To exclude proposals with widely anticipated outcomes (e.g., ratification of auditors or other routine proposals), I follow Cuñat et al. (2012) and focus only on close votes. Specifically, I restrict the analysis to the sample of proposals within 20% of the passing requirement.[22] The first four columns in Panel A of Table 12 indicate that a firm will experience up a negative three percent abnormal return if the vote outcome is in the same direction as ISS's changed recommendation. The result means that the marginal trader does not appreciate the recommendations that ISS has changed into, suggesting that ISS changes its recommendations predominantly because it wants to cater to some investors'

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[22]The Online Appendix IA.8 displays the distribution of proposals' margins from passage. It also shows the robustness for different choices of close-call margins. For my main analyses, I choose 20% as the close-call margin, a measure that Gantchev and Giannetti (2020) use. It is larger than the 5% in Cuñat et al. (2012) because I specifically focus on proposals for which ISS or Glass Lewis changed their recommendations, which greatly restrict the sample size. Regardless, the result that ISS's changed recommendations destroy firm value continues to hold when I vary the close-call margins from 40 to 5 percent, with reduced statistical significance if the threshold moves closer to zero.

preferences rather than because it learns from investors' dissent.

The table also suggests that when ISS does not change the recommendation, whether its advice is adopted does not affect the underlying firm value. This finding is consistent with Iliev and Lowry (2015), which casts double on the value of ISS's recommendation in general. For Glass Lewis' recommendations, regardless of whether they are changed or not, they do not appear to affect the underlying firm value.

4 Conclusion

The value of the proxy advisory industry remains a matter of continual debate. Many questions remain unanswered due to the lack of information that links investors to their proxy advisors. A key innovation of this paper is that it uses a previously unnoticed feature of regulatory filings to identify each mutual fund's subscription to proxy advice. From this new information, I discover several novel facts about the industry. The industry, although still a duopoly dominated by ISS and Glass Lewis, became less concentrated from 2007 to 2017. The practice of robo-voting has become increasingly prevalent, especially among ISS customers.

Besides the widely researched topic that proxy advice influences votes, there also exists a feedback loop from investors' votes to proxy advisors' recommendations; this feedback loop results from proxy advisors' information acquisition process and their preference catering motives. Evidence from analyzing firm values suggests that ISS listens to investors predominantly because it caters to investors with polarized preferences, which may be inconsistent with value-maximization. From a policy perspective, this casts double on the accuracy of proxy advice and calls for continued investigation of the biases of proxy advisors.

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Table 1: Summary Statistics

(A) Number of Votes (Proposals) by Year

This table reports the number of votes and the number of proposals from 2006-2017. For each year and each proposal type, the number of votes is displayed at the top, and the number of proposals is displayed at the bottom in parentheses. Votes are aggregated at the fund-family level. After 2011, say-on-pay proposals become mandatory as part of the Dodd-Frank Act, and they have to be brought up by the management every one to three years. Before that, shareholders can sponsor them as governance measures. Because they are different in nature, I treat say-on-pay proposals as different proposal types if happened before and after 2011.

	Director Elections	Say-on-Pay (before 2011)	Say-on-Pay (after 2011)	Compensation: Other	Financial Policy	Golden Parachutes	Adopt Poison Pill	Board Declass.	Proxy Access	Independent Chairman	Political Contributions	Animal Rights	Environ-mental	Social Proposal
2006	398,944	151	0	25,490	9,996	0	95	3,786	0	2,044	1,917	0	684	2,549
	(15,682)	(4)	(0)	(1,009)	(408)	(0)	(4)	(107)	(0)	(49)	(35)	(0)	(14)	(44)
2007	457,725	2,791	0	27,553	11,833	0	106	3,483	0	2,205	1,862	0	1,591	3,576
	(15,733)	(48)	(0)	(949)	(473)	(0)	(4)	(87)	(0)	(39)	(33)	(0)	(27)	(55)
2008	520,593	4,738	0	32,282	10,916	0	185	4,896	0	1,659	1,784	514	1,537	74
	(16,399)	(82)	(0)	(1,031)	(353)	(0)	(8)	(145)	(0)	(28)	(31)	(10)	(25)	(1)
2009	642,132	10,699	0	41,754	11,809	0	615	4,638	0	2,173	2,168	858	1,309	0
	(17,877)	(307)	(0)	(1,132)	(381)	(0)	(19)	(115)	(0)	(37)	(32)	(14)	(23)	(0)
2010	700,604	10,276	0	41,726	10,864	0	485	4,774	0	2,831	2,590	946	2,585	0
	(17,696)	(213)	(0)	(1,057)	(347)	(0)	(16)	(110)	(0)	(42)	(36)	(15)	(39)	(0)
2011	731,016	0	109,840	41,207	12,060	1,241	237	4,926	0	1,966	4,101	718	2,021	0
	(20,328)	(0)	(3,137)	(1,152)	(392)	(39)	(9)	(97)	(0)	(29)	(53)	(9)	(30)	(0)
2012	796,741	0	104,227	40,176	11,609	2,450	338	7,542	672	3,963	6,063	923	1,199	0
	(21,865)	(0)	(2,569)	(1,130)	(419)	(98)	(14)	(130)	(12)	(56)	(72)	(13)	(16)	(0)
2013	780,276	0	99,851	44,046	11,726	3,679	323	6,825	1,091	4,137	5,438	288	1,795	33
	(23,971)	(0)	(3,026)	(1,252)	(481)	(147)	(16)	(133)	(17)	(63)	(76)	(6)	(23)	(1)
2014	933,399	0	126,707	44,801	13,265	3,666	174	4,854	2,024	4,599	6,798	424	3,163	87
	(25,341)	(0)	(3,219)	(1,230)	(456)	(122)	(6)	(102)	(23)	(64)	(84)	(6)	(41)	(1)
2015	1,204,561	0	142,254	58,370	17,398	6,413	236	3,302	9,224	6,650	6,967	696	5,038	144
	(25,717)	(0)	(2,755)	(1,258)	(499)	(153)	(11)	(70)	(105)	(65)	(65)	(10)	(50)	(1)
2016	1,159,292	0	134,638	56,627	18,587	7,428	159	3,107	8,577	4,605	7,081	119	4,766	538
	(25,126)	(0)	(2,788)	(1,270)	(571)	(174)	(5)	(63)	(112)	(49)	(67)	(2)	(50)	(5)
2017	1,052,208	0	132,384	50,348	11,205	3,095	0	2,580	3,770	3,984	5,792	184	4,876	563
	(20,487)	(0)	(2,547)	(1,065)	(333)	(77)	(0)	(51)	(44)	(43)	(58)	(3)	(51)	(4)

Table 1: Summary Statistics (Continued)

(B) Proposal Characteristics

This table reports summary statistics for different proposal types. It covers 7489 firms across 2006-2017. Except for "# of items", all numbers shown in the table represent the mean. "# of items" denotes the number of occurrences. "Mgmt Sponsor" is a dummy that equals one if the management sponsors the proposal. "Mgmt For"/"ISS For"/"GL For" equals 1 if management/ISS/GL recommends for the proposal. "% For (ISS)"/"% For (GL)" denotes the fraction of ISS/GL's customers that vote "For" the proposal. "Prop Passed" is a dummy that equals one if the proposal is passed.

	# of Items	Mgmt Sponsor	Mgmt For	ISS For	GL For	% For (ISS)	% For (GL)	% For (others)	Prop Passed
Routine Proposals									
Director Elections	247,528	100%	100%	89%	90%	90%	91%	91%	100%
Say-on-Pay (before 2011)	637	59%	59%	87%	90%	76%	52%	71%	65%
Say-on-Pay (after 2011)	19,893	100%	100%	88%	83%	89%	87%	88%	98%
Compensation: Other	14,380	100%	100%	78%	84%	77%	78%	79%	99%
Financial Policy	5,029	100%	100%	92%	85%	92%	91%	87%	98%
Governance Proposals									
Golden Parachutes	777	100%	100%	74%	83%	78%	80%	69%	93%
Adopt Poison Pill	111	100%	97%	67%	8%	60%	40%	56%	81%
Board Declassification	1,281	62%	62%	100%	100%	96%	97%	91%	83%
Proxy Access	305	17%	19%	90%	79%	77%	64%	63%	54%
Independent Chairman	595	0%	0%	65%	93%	43%	45%	42%	5%
Social Proposals									
Political Contributions	688	0%	0%	73%	49%	40%	28%	28%	1%
Animal Rights	85	0%	0%	7%	4%	8%	6%	4%	1%
Environmental	398	0%	0%	64%	22%	36%	20%	20%	1%
Other Social Proposal	172	0%	3%	15%	10%	10%	7%	7%	3%

Table 1: Summary Statistics (Continued)

(C) Mutual Funds

This table displays the summary statistics at the fund-family level. A fund family is defined as a unique fund management in the CRSP Mutual Fund Dataset (variable mgmt_cd). One observation is a family-year. A fund is an "ESG" fund if its name contains any of the following words: esg, social, climate, environment, impact, responsible, carbon, and fossil. A fund is an "institutional" fund if it's flagged by CRSP as an institutional fund. A fund is an "index" fund if either it's flagged by CRSP as an index fund or its name contains any of the following words: index, idx, indx, inds, russell, s & p, s and p, s&p, sandp, sp, dow, dj, msci, bloomberg, kbw, nasdaq, nyse, stoxx, ftse, wilshire, morningstar, 100, 400, 500, 600, 900, 1000, 1500, 2000, 5000 (Iliev and Lowry, 2015). Management fee and expense ratio for the family are the TNA-weighted averages among all funds in the family. Fund families' uses of voting platforms are inferred from their N-PX filings. "% agree with ISS/GL/Mgmt" denotes the fraction of proposals that the fund votes in the same direction ISS/GL/Mgmt's recommendations. I define a fund-family as an ISS (GL) robo-voter if it agrees in a year with ISS (GL) on more than 99.9 percent of proposals where ISS (GL) disagrees with management. I define a fund-family as a management robo-voter if it agrees in a year with Mgmt on more than 99.9 percent of proposals when either ISS or GL disagrees with the Mgmt.

	Obs	Mean	Std	5%	25%	Median	75%	95%
Characteristics								
Age of the Mgmt	2,491	29.20	22.76	3.00	14.00	23.00	35.00	80.00
Total Net Asset (in 10^6)	2,491	60.41	243.81	0.03	0.56	4.42	26.83	236.43
Number of Votes (in 1000)	2,491	5.40	6.85	0.06	0.69	2.37	7.43	22.22
Provide ESG Fund	2,491	0.07	0.26	0.00	0.00	0.00	0.00	1.00
Provide Institutional Fund	2,491	0.76	0.43	0.00	1.00	1.00	1.00	1.00
Provide Index Fund	2,491	0.31	0.46	0.00	0.00	0.00	1.00	1.00
Management Fee	2,474	0.64	0.43	0.13	0.44	0.63	0.86	1.16
Expense Ratio	2,474	0.01	0.00	0.00	0.01	0.01	0.01	0.02
Voting Platform								
Use ISS ProxyExchange	2,491	0.51	0.50	0.00	0.00	1.00	1.00	1.00
Use GL Viewpoint	2,491	0.07	0.26	0.00	0.00	0.00	0.00	1.00
Use Broadridge ProxyEdge	2,491	0.24	0.43	0.00	0.00	0.00	0.00	1.00
Use Others	2,491	0.18	0.39	0.00	0.00	0.00	0.00	1.00
Votes								
% agree with ISS	2,491	0.91	0.12	0.72	0.89	0.93	0.97	1.00
% agree with GL	2,156	0.87	0.10	0.71	0.85	0.89	0.92	0.98
% agree with Mgmt	2,491	0.90	0.12	0.72	0.89	0.92	0.96	1.00
Robo - Vote with ISS	2,491	0.10	0.30	0.00	0.00	0.00	0.00	1.00
Robo - Vote with GL	2,491	0.01	0.09	0.00	0.00	0.00	0.00	0.00
Robo - Vote with Mgmt	2,491	0.06	0.24	0.00	0.00	0.00	0.00	1.00

Table 2: Proxy Voting Systems

This table displays the number of votes and fund families that use each of the following three voting systems: ISS ProxyExchange, Glass Lewis Viewpoint, and Broadridge ProxyEdge. Funds' of voting systems are identified from their N-PX filings. Votes are aggregated at the fund family level.

	Number of Votes				Number of Fund Families			
	ISS	Glass Lewis	Broad-ridge	Others	ISS	Glass Lewis	Broad-ridge	Others
2007	512,691	18,023	64,663	28,455	94	3	32	11
2008	557,023	18,554	71,664	43,439	98	3	34	11
2009	661,117	16,365	103,927	80,786	109	4	34	20
2010	623,240	106,479	107,846	113,940	103	15	36	16
2011	637,149	153,347	148,595	121,122	97	18	50	18
2012	712,439	170,096	182,225	105,054	96	18	53	17
2013	649,202	197,240	193,790	99,430	89	20	56	15
2014	845,453	190,483	211,721	101,597	109	20	63	11
2015	1,025,536	247,572	213,040	299,934	124	28	73	127
2016	1,040,756	208,280	231,220	213,333	124	26	75	116
2017	1,100,786	212,593	253,972	154,821	132	26	75	83
All years	9,891,568	1,715,367	2,013,859	1,551,121	231	48	121	198

Table 3: Robo Voters and Characteristics

(A) Examples of Robo Voters

This table shows examples of robo-voters. I define a fund-family as an ISS robo-voter in a particular year if all of the following three conditions hold: (i) it is an ISS customer; (ii) its votes are aligned with ISS recommendations on more than 99.9 percent of the time (column "% Aligned With ISS"); and (iii) its votes are aligned with ISS recommendations on more than 99.9 percent of proposals where ISS and management disagree (column "% Sided With ISS"). Glass Lewis robo-voters are defined analogously. I define a fund-family as a management robo-voter if (i) its votes are aligned with management recommendations on more than 99.9 percent of the time (the column % Aligned With Mgmt); and (ii) its votes are aligned with management recommendations on more than 99.9 percent of proposals where either ISS or Glass Lewis disagree with the management (column "% Sided With Mgmt").

ISS Robo-Voters

Fund-Family Name	Year	# of Votes	% Aligned With ISS	# of Contentious Votes	% Sided With ISS
Guggenheim Investments	2017	30,230	99.98%	3,579	100.00%
Profunds Group	2014	26,562	100.00%	2,467	100.00%
Nuveen Fund Advisors	2015	25,206	99.98%	2,413	99.96%
Wilmington Funds	2014	23,899	100.00%	2,025	99.95%
Rydex Investments	2017	21,661	100.00%	2,402	100.00%

Glass Lewis Robo-Voters

Fund-Family Name	Year	# of Votes	% Aligned With GL	# of Contentious Votes	% Sided With GL
Forward Management	2017	1,016	100.00%	42	100.00%
Evercore Wealth Management	2015	512	100.00%	28	100.00%
Kalmar Investment Advisers	2010	488	100.00%	27	100.00%
Destra Capital Advisors	2017	470	100.00%	28	100.00%
Aew Capital Management	2016	385	100.00%	12	100.00%

Management Robo-Voters

Fund-Family Name	Year	# of Votes	% Aligned With Mgmt	# of Contentious Votes	% Sided With Mgmt
Rydex/Sgi Funds	2011	24,137	99.99%	3,072	99.90%
Reynolds Capital Mgmt	2014	9,446	99.99%	1,038	100.00%
Nashville Capital Corporation	2017	2,548	100.00%	255	100.00%
Johnson Investment Counsel	2015	2,305	100.00%	214	100.00%
Weston Capital Advisors	2015	1,798	100.00%	272	100.00%

Table 3: Robo Voters and Characteristics (Continued)

(B) Robo-Voting and Fund Characteristics

This table reports the OLS regression of whether a fund family is a robo-voter as a function of its characteristics. Each observation represents a fund family-year. Dependent variables are dummies that equal 1 if the fund family is an ISS robo-voter (column 1), Glass Lewis robo-voter (column 2), or management robo-voter (column 3). Column 1 includes the sample of investors that are ISS customers, column 2 includes Glass Lewis customers, and column 3 includes other investors. All regressions include the year fixed effect. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
	Robo Voting with ISS	Robo Voting with Glass Lewis	Robo Voting with Management
log(# votes)	-0.04***	-0.06**	-0.04***
	(0.01)	(0.03)	(0.01)
log(asset)	-0.04***	0.00	-0.02***
	(0.01)	(0.00)	(0.00)
Provide Index Fund	0.06***	0.01	0.05**
	(0.02)	(0.02)	(0.02)
Provide Inst. Fund	-0.01	-0.00	-0.01
	(0.03)	(0.09)	(0.02)
Provide ESG Fund	0.03	-0.01	-0.02
	(0.03)	(0.02)	(0.03)
Age	-0.00	-0.00*	0.00
	(0.00)	(0.00)	(0.00)
Year Effect	Yes	Yes	Yes
Adjusted R^2	0.15	0.14	0.10
Observations	1,265	172	1,045

Table 4: Votes of ISS and Glass Lewis Customers

This table reports OLS regressions for whether a fund vote is aligned with a proxy advisor's recommendation as a function of whether the fund is a customer of this proxy advisor:

$$\text{Agree with PA}_{ip} = \beta_0 + \beta_1 \cdot \text{PA Customer}_{it} + \boldsymbol{\gamma}' \cdot \boldsymbol{Z} + a_p + \varepsilon_{ipt}$$

Each observation represents a fund vote. The dependent variable in Panel A (Panel B) is a dummy that equals 1 if the vote is cast in the same direction as ISS's (Glass Lewis's) recommendation. The independent variables are dummy variables that equal one if the fund family is an ISS customer or a GL customer in the current year. In Panel A (Panel B), Columns 1 and 2 include proposals where ISS (Glass Lewis) supports management and columns 3 and 4 include proposals where ISS (Glass Lewis) opposes management. All columns include proposal fixed effect and controls for fund-family characteristics appeared in Table 1C. Standard errors are clustered at the fund family-year level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Online Appendix IA.4 further divides proposals into four sub-samples: ISS supports management and Glass Lewis supports management; ISS supports management and Glass Lewis opposes management; ISS opposes management and Glass Lewis supports management; ISS opposes management and Glass Lewis opposes management.

(A) Vote Cast in the Same Direction as ISS Recommendations

| | Dependent Variable = 1 if the vote is aligned with ISS recommendation | | | |
| | ISS Supports Management | | ISS Opposes Management | |
	(1)	(2)	(3)	(4)
ISS Customer	0.02***	0.01***	0.21***	0.18***
	(0.00)	(0.00)	(0.02)	(0.02)
GL Customer		-0.01***		-0.10***
		(0.00)		(0.02)
Controls	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.07	0.07	0.13	0.13
Observations	13,487,169	13,487,169	1,404,348	1,404,348
# of Clusters	2,710	2,710	2,653	2,653

(B) Vote Cast in the Same Direction as Glass Lewis Recommendations

| | Dependent Variable = 1 if the vote is aligned with Glass Lewis recommendation | | | |
| | Glass Lewis Supports Management | | Glass Lewis Opposes Management | |
	(1)	(2)	(3)	(4)
GL Customer	0.02***	0.02***	0.21***	0.21***
	(0.00)	(0.00)	(0.03)	(0.03)
ISS Customer		-0.00		-0.00
		(0.00)		(0.01)
Controls	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.23	0.23	0.35	0.35
Observations	7,172,887	7,172,887	804,659	804,659
# of Clusters	2,375	2,375	2,348	2,348

Table 5: Investors' Votes in Director Elections, Say-on-pay Proposals, and Shareholder Proposals

This table reports OLS regressions for whether a fund vote is aligned with a proxy advisor's recommendation as a function of whether the fund is a customer of this proxy advisor. Columns 1 to 3 (4 to 6) include the sample of proposals where the proxy advisor supports (opposes) the management. The sample is further divided into director elections, say-on-pay proposals, or shareholder-sponsored proposals. Each observation represents a fund vote. All columns include proposal fixed effect and controls for fund-family characteristics appeared in Table 1C. Standard errors are clustered at the fund family-year level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

(A) Vote Cast in the Same Direction as ISS Recommendations

	Dependent Variable = 1 if the vote is aligned with ISS recommendation					
	ISS Supports Management			ISS Opposes Management		
	(1)	(2)	(3)	(4)	(5)	(6)
	Director Elections	Say-on-Pay Proposals	Shareholder Proposals	Director Elections	Say-on-Pay Proposals	Shareholder Proposals
ISS Customer	0.01***	0.04***	0.03***	0.21***	0.20***	0.23***
	(0.00)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.06	0.09	0.13	0.09	0.13	0.18
Observations	9,735,040	870,268	178,026	747,247	108,352	358,082
# of Clusters	2,677	1,921	2,517	2,582	1,851	2,571

(B) Vote Cast in the Same Direction as Glass Lewis Recommendations

	Dependent Variable = 1 if the vote is aligned with Glass Lewis recommendation					
	Glass Lewis Supports Management			Glass Lewis Opposes Management		
	(1)	(2)	(3)	(4)	(5)	(6)
	Director Elections	Say-on-Pay Proposals	Shareholder Proposals	Director Elections	Say-on-Pay Proposals	Shareholder Proposals
GL Customer	0.01***	0.03***	0.18***	0.29***	0.25***	-0.01
	(0.00)	(0.01)	(0.02)	(0.04)	(0.04)	(0.02)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.20	0.23	0.23	0.30	0.29	0.20
Observations	5,277,605	461,789	201,566	450,157	80,668	191,257
# of Clusters	2,375	1,891	2,271	2,332	1,807	2,290

Table 6: Fund Votes After Switching Proxy Advisors

This table reports OLS regressions for the change in a fund's vote agreement with a PA's recommendations as a function of whether it switches its proxy advisors.

$$\text{Agree with PA}_{i,t+1} - \text{Agree with PA}_{i,t} = \beta_0 + \beta_1 \cdot \text{Switch}_{it} + \boldsymbol{\gamma}' \cdot \boldsymbol{Z} + \varepsilon_{it} \tag{3}$$

Each observation represents a fund family-year. The dependent variable "ΔAgree with PA" is the difference between "Agree with PA_{t+1}" and "Agree with PA_t", where "Agree with PA_t" is the percentage of the fund's votes in year t that are in the same direction as the proxy advisor's recommendations. Columns 1 and 2 calculate "Agree with PA" using proposals where PA supports management and columns 3 and 4 uses proposals where PA opposes management. Panel A's (Panel B's) samples include the funds that are ISS's (GL's) customers in year t. The independent variable "ISS → GL" is a dummy variable that equals one if the fund is an ISS customer in year t and a GL customer in year $t+1$. "GL → ISS" is defined analogously. All columns include year fixed effect and controls for fund-family characteristics appeared in Table 1C. Standard errors are clustered at the fund-family level. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

(A) Votes of Funds that Switch Proxy Advisor from ISS to Glass Lewis

	Sample: All ISS Customers in year t			
	Proposals where PA Supports Management		Proposals where PA Opposes Management	
	(1)	(2)	(3)	(4)
	ΔAgree with ISS	ΔAgree with GL	ΔAgree with ISS	ΔAgree with GL
ISS → GL	-0.04***	0.04***	-0.23***	0.38***
	(0.01)	(0.01)	(0.07)	(0.09)
Controls	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.01	0.08	0.03	0.23
Observations	993	827	980	820

(B) Votes of Funds that Switch Proxy Advisor from Glass Lewis to ISS

	Sample: All Glass Lewis Customers in year t			
	Proposals where PA Supports Management		Proposals where PA Opposes Management	
	(1)	(2)	(3)	(4)
	ΔAgree with ISS	ΔAgree with GL	ΔAgree with ISS	ΔAgree with GL
GL → ISS	0.01	-0.03**	0.24**	-0.21**
	(0.01)	(0.01)	(0.09)	(0.09)
Controls	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.01	0.03	0.14	0.07
Observations	131	128	131	128

Table 7: Matching on Investor Ideologies

This table repeats the analyses of Table 4 after matching on investors' voting ideologies. It reports OLS regressions for whether a fund vote is aligned with a proxy advisor's recommendation as a function of whether the fund is a customer of this proxy advisor. Each observation represents a fund vote. The matching procedure in columns 1 and 2 is a one-to-one matching for each vote by ISS customers with another vote on the same proposal by an investor who is not an ISS customer. I match the two votes using the nearest neighbor search (Euclidean distance) on their two-dimensional W-NOMINATE scores in Bolton et al. (2020). I restricted the sample of matched votes with Euclidean distances less than 0.1. The matching procedure in columns 3 and 4 for Glass Lewis customers' votes is analogous. All columns include proposal fixed effect and controls for fund-family characteristics appeared in Table 1C. Standard errors are clustered at the fund family-year level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable = 1 if the vote is aligned with ISS recommendation		Dependent Variable = 1 if the vote is aligned with Glass Lewis recommendation	
	ISS Supports Management	ISS Opposes Management	GL Supports Management	GL Opposes Management
	(1)	(2)	(3)	(4)
ISS Customer	0.02***	0.11***		
	(0.00)	(0.03)		
GL Customer			0.02**	0.23***
			(0.01)	(0.06)
Controls	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.11	0.18	0.15	0.26
Observations	3,791,657	347,134	420,714	44,252
# of Clusters	984	971	264	255

Table 8: Change of Recommendations By Proxy Advisors

This table illustrates the frequency of issues on which ISS or Glass Lewis changes its recommendations. It displays (i) the total number of proposals, (ii) the number of proposals that re-appear in the same firm, and (iii) the fraction of the re-appeared proposals that ISS or Glass Lewis changes its recommendations. I define a proposal on which ISS (or GL) changes its recommendations if the proxy advisor supports (opposes) the proposal in a year and opposed (supported) the same company's same proposal when it was last appeared. I use director names to link director elections within the same company and agenda general descriptions to link non-election proposals within the same company.

	Total Number of Proposals	Number of Proposals that Re-appear	% of the Re-appeared that ISS Changes Recommendations	% of the Re-appeared that GL Changes Recommendations
Director Elections	283,532	199,377	9%	8%
Say-on-Pay (before 2011)	630	270	14%	13%
Say-on-Pay (after 2011)	22,550	18,218	15%	15%
Compensation: Other	14,777	6,568	17%	21%
Financial Policy	5,931	1,450	9%	11%
Golden Parachutes	945	20	40%	0%
Adopt Poison Pill	122	29	14%	20%
Board Declassification	1,366	458	0%	0%
Proxy Access	337	56	23%	12%
Independent Chairman	657	387	27%	8%
Political Contributions	725	437	12%	15%
Animal Rights	91	29	14%	6%
Environmental	399	158	13%	13%
Social Proposal	122	36	14%	50%
Others	64,242	42,359	2%	3%

Table 9: Proxy Advisor Influenced by Investors

This table reports OLS regressions of whether ISS or Glass Lewis changes its recommendation as a function of investors' disagreement with the proxy advisor's past recommendations. Each observation represents a proposal. The dependent variables are dummy variables that equal 1 if the proxy advisor supports (opposes) the proposal in the current year and opposed (supported) the same company's same proposal when it was last appeared. The independent variables are the percentage of investors' votes that disagreed with the proxy advisor when the proposal was last appeared. Panel A includes the sample of all proposals; Panel B divides the sample into different proposal types; Panel C and Panel D separate investors' votes depending on their proxy advisors. I use director names to link director elections within the same company and agenda general descriptions to link non-election proposals within the same company. Standard errors are clustered at the company level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

(A) Full Sample

	Dependent Variable = 1 if ISS Changes Recommendation				Dependent Variable = 1 if Glass Lewis Changes Recommendation			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
% Votes Disagreed with ISS	0.61***	0.61***	0.57***	0.60***				
	(0.01)	(0.01)	(0.01)	(0.01)				
% Votes Disagreed with GL					0.48***	0.47***	0.45***	0.48***
					(0.01)	(0.01)	(0.01)	(0.01)
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect		Yes				Yes		
Firm×Proposal Effect			Yes				Yes	
Proposal×Age Effect				Yes				Yes
Adjusted R^2	0.13	0.20	0.25	0.14	0.17	0.21	0.25	0.19
Observations	269,852	269,549	266,265	269,837	74,303	74,165	72,623	74,284
# of Clusters	6,417	6,114	6,041	6,417	2,109	1,971	1,901	2,109

(B) Proposal Types

	Dependent Variable = 1 if ISS Changes Recommendation			Dependent Variable = 1 if Glass Lewis Changes Recommendation		
	(1)	(2)	(3)	(4)	(5)	(6)
	Director Elections	Say-on-Pay Proposals	Shareholder Proposals	Director Elections	Say-on-Pay Proposals	Shareholder Proposals
% Votes Disagreed with ISS	0.60***	0.79***	-0.08			
	(0.02)	(0.03)	(0.05)			
% Votes Disagreed with GL				0.45***	0.39***	0.21***
				(0.01)	(0.03)	(0.06)
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm×Proposal Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.24	0.27	0.14	0.25	0.21	0.06
Observations	199,201	17,580	2,602	55,366	5,422	1,540
# of Clusters	5,624	3,398	326	1,730	1,142	214

Table 9: Proxy Advisor Influenced by Investors (Continued)

(C) ISS's Response to Investors that Subscribe to Different Proxy Advisors

	Dependent Variable = 1 if ISS Changes Recommendation			
	(1)	(2)	(3)	(4)
% Votes Disagreed with ISS	0.57***			0.40***
by ISS Customers	(0.01)			(0.02)
% Votes Disagreed with ISS		0.27***		0.07***
by Glass Lewis Customers		(0.01)		(0.01)
% Votes Disagreed with ISS			0.38***	0.25***
by Other Investors			(0.01)	(0.01)
Year Effect	Yes	Yes	Yes	Yes
Firm×Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.23	0.25	0.24	0.29
Observations	263,756	194,583	242,159	191,257
# of Clusters	5,942	4,845	5,569	4,663

(D) Glass Lewis's Response to Investors that Subscribe to Different Proxy Advisors

	Dependent Variable = 1 if Glass Lewis Changes Recommendation			
	(1)	(2)	(3)	(4)
% Votes Disagreed with GL	0.40***			0.10***
by ISS Customers	(0.01)			(0.02)
% Votes Disagreed with GL		0.45***		0.07***
by Glass Lewis Customers		(0.02)		(0.02)
% Votes Disagreed with GL			0.46***	0.32***
by Other Investors			(0.01)	(0.03)
Year Effect	Yes	Yes	Yes	Yes
Firm×Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.25	0.21	0.26	0.25
Observations	72,593	69,423	72,568	69,401
# of Clusters	1,901	1,788	1,898	1,786

Table 10: Proxy Advisors' Response to Different Investors

This table reports OLS regressions of whether ISS or Glass Lewis changes its recommendation as a function of investors' disagreement with the proxy advisor's past recommendations. Each observation represents a proposal. The dependent variables are dummy variables that equal 1 if the proxy advisor supports (opposes) the proposal in the current year and opposed (supported) the same company's same proposal when it was last appeared. The independent variables are the percentage of investors' votes that disagreed with the proxy advisor when the proposal was last appeared. In Panel A, fund votes are separated by whether the fund family's total net assets are above or below median among votes in the same proposal. In Panel B, fund votes are separated by whether the fund family visited the proposal's proxy statement on the SEC Edgar website. To control for fund family size, a vote that visits Edgar is matched with a vote that does not visit Edgar from fund families with the closest TNA. In Panel C, fund votes are separated by whether the fund family has a strong or weak voting preference. To control for fund family size, a vote from a fund with a strong voting preference is matched with a vote from a fund with a weak voting preference that has the closest TNA. I denote a fund to have a strong voting preference if its W-NOMINATE score is either below the 25% quantile or above the 75% quantile among fund families in my sample. Online Appendix IA.7 displays fund families' average TNA before and after matching. Standard errors are clustered at the company level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

(A) Fund Family Sizes

	Dependent Variable = 1 if ISS Changes Recommendation			Dependent Variable = 1 if Glass Lewis Changes Recommendation		
	(1)	(2)	(3)	(4)	(5)	(6)
% Disagree with PA by Investors	0.54***		0.44***	0.44***		0.37***
with Above Median TNA	(0.01)		(0.01)	(0.01)		(0.04)
% Disagree with PA by Investors		0.46***	0.12***		0.44***	0.07*
with Below Median TNA		(0.01)	(0.01)		(0.01)	(0.04)
$\hat{\beta}_1 - \hat{\beta}_2$			0.32***			0.29***
F-statistics			214.6			15.7
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm×Proposal Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.25	0.22	0.25	0.25	0.25	0.25
Observations	266,265	266,265	266,265	72,623	72,623	72,623
# of Clusters	6,041	6,041	6,041	1,901	1,901	1,901

Table 10: Proxy Advisors' Response to Different Investors (Continued)

(B) Information (controlling for fund family sizes)

	Dependent Variable = 1 if ISS Changes Recommendation			Dependent Variable = 1 if Glass Lewis Changes Recommendation		
	(1)	(2)	(3)	(4)	(5)	(6)
% Disagree with PA by Investors that Visits Edgar	0.29***		0.24***	0.29***		0.21***
	(0.02)		(0.02)	(0.02)		(0.02)
% Disagree with PA by Investors that does not Visit Edgar		0.22***	0.14***		0.27***	0.12***
		(0.02)	(0.02)		(0.02)	(0.02)
$\hat{\beta}_1 - \hat{\beta}_2$			0.11***			0.09**
F-statistics			14.3			6.0
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm×Proposal Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.29	0.27	0.30	0.20	0.19	0.20
Observations	37,977	37,977	37,977	23,115	23,115	23,115
# of Clusters	1,498	1,498	1,498	816	816	816

(C) Voting Preferences (controlling for fund family sizes)

	Dependent Variable = 1 if ISS Changes Recommendation			Dependent Variable = 1 if Glass Lewis Changes Recommendation		
	(1)	(2)	(3)	(4)	(5)	(6)
% Disagree with PA by Investors with Strong Voting Preferences	0.53***		0.40***	0.35***		0.21***
	(0.02)		(0.01)	(0.01)		(0.02)
% Disagree with PA by Investors with Weak Voting Preferences		0.43***	0.26***		0.39***	0.17***
		(0.01)	(0.01)		(0.01)	(0.03)
$\hat{\beta}_1 - \hat{\beta}_2$			0.14***			0.03
F-statistics			46.8			0.5
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm×Proposal Effect	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.24	0.23	0.26	0.21	0.21	0.21
Observations	216,048	216,048	216,048	72,411	72,411	72,411
# of Clusters	4,618	4,618	4,618	1,889	1,889	1,889

Table 11: Why Do Proxy Advisors Cater?

This table reports OLS regressions of whether a fund family switches its proxy advisor as a function of its past agreement with ISS and Glass Lewis recommendations. Each observation represents a fund family-year. The dependent variable "GL → ISS" is a dummy that equals one if the fund subscribes to Glass Lewis in the current year but changes to ISS in the next year; "Other → ISS" is a dummy that equals one if the fund does not subscribe to either ISS or Glass Lewis but changes to ISS in the next year. "Other → GL" and "ISS → GL" are defined analogously for fund families that switch to Glass Lewis. In columns 1 to 4, the independent variable "% Agree with ISS" or "% Agree with GL" is the percentage of the fund's votes in the current year that are cast in the same direction as ISS or Glass Lewis's recommendations. In columns 5 to 8, the vote agreements are averaged across the past three years. All columns include year fixed effects and controls for fund-family characteristics appeared in Table 1C. *,**, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	One-year Agreement				Three-year Agreement			
	Switching to ISS		Switching to GL		Switching to ISS		Switching to GL	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Other ↓ ISS	GL ↓ ISS	Other ↓ GL	ISS ↓ GL	Other ↓ ISS	GL ↓ ISS	Other ↓ GL	ISS ↓ GL
% Agree with ISS	0.19**	1.06**	-0.09**	-0.05				
	(0.09)	(0.43)	(0.05)	(0.10)				
% Agree with GL	-0.15*	-0.73**	0.10**	0.05				
	(0.09)	(0.34)	(0.05)	(0.10)				
$\frac{1}{3}\sum_{s=0}^{2}$ % Agree with ISS$_{t-s}$					0.24***	0.82**	-0.10**	-0.00
					(0.09)	(0.37)	(0.05)	(0.08)
$\frac{1}{3}\sum_{s=0}^{2}$ % Agree with GL$_{t-s}$					-0.19**	-0.50*	0.10**	0.01
					(0.09)	(0.27)	(0.05)	(0.10)
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.04	0.09	0.03	0.03	0.04	0.08	0.03	0.03
Observations	1013	182	1013	1169	1025	182	1025	1174

Table 12: Change of Recommendation and Cumulative Abnormal Return

This table reports OLS regressions of firms' cumulative abnormal returns as a function of whether the vote outcome is in the same direction as proxy advisors' recommendations. The samples are separated by whether the proxy advisor has changed its recommendation on the same firm's same proposal across two adjacent occurrences. The sample includes proposals that receive close votes, defined as within 20% of passing requirement. Each observation represents a proposal. The dependent variables are the firm's cumulative abnormal returns by different Fama-French factors and for different event windows. The independent variables are dummy variables that equal 1 if the voting outcome is in the same direction as the proxy advisor's current recommendation. All columns include the proposal-type effect and the year fixed effect. Standard errors are clustered at the annual meeting level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

(A) Effect of ISS's Changed Recommendations on Firms' Return

	Sample: close-call proposals where ISS changes its recommendation from last year				Sample: close-call proposals where ISS does not change its recommendation from last year			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	1 factor	1 factor	3 factors	3 factors	1 factor	1 factor	3 factors	3 factors
	$[-5,5]$	$[-10,10]$	$[-5,5]$	$[-10,10]$	$[-5,5]$	$[-10,10]$	$[-5,5]$	$[-10,10]$
= 1 if the vote outcome is the	-0.01**	-0.03***	-0.02***	-0.03**	0.00	0.00	0.00	0.01
same as ISS recommendations	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.01	0.01	0.00	0.00	0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Type Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.03	0.04	0.04	0.03	0.02	0.02	0.02	0.02
Observations	1,438	1,438	1,438	1,438	2,247	2,247	2,247	2,247
# of Clusters	1,233	1,233	1,233	1,233	1,890	1,890	1,890	1,890

(B) Effect of Glass Lewis's Changed Recommendations on Firms' Return

	Sample: close-call proposals where GL changes its recommendation from last year				Sample: close-call proposals where GL does not change its recommendation from last year			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	1 factor	1 factor	3 factors	3 factors	1 factor	1 factor	3 factors	3 factors
	$[-5,5]$	$[-10,10]$	$[-5,5]$	$[-10,10]$	$[-5,5]$	$[-10,10]$	$[-5,5]$	$[-10,10]$
= 1 if the vote outcome is the	0.00	0.00	0.00	0.01	-0.00	-0.01	0.00	-0.00
same as GL recommendations	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Type Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.06	0.11	0.05	0.03	0.05	0.04	0.03	0.02
Observations	333	333	333	333	910	910	910	910
# of Clusters	286	286	286	286	769	769	769	769

Figure 1: N-PX Types

This figure shows one example for each of the four most-used N-PX table formats (denoted A.1, A.2, B, C). All tables display Apple Inc's Annual meeting in 2019. They are filed by BlackRock, Fidelity, Putnam Investments, and John Hancock Financial, respectively. Types A.1 and A.2 correspond to the reporting style of ISS's ProxyExchange, type B corresponds to Glass Lewis's Viewpoint, and type C corresponds to Broadridge's ProxyEdge. The online Appendix explains the link between the four N-PX styles to their respective voting platforms through the comparison between the four N-PXs' proposal descriptions with those of platforms' vote disclosure service (VDS) websites.

Type A.1: ISS ProxyExchange®

```
--------------------------------------------------------------

APPLE, INC.

Ticker:      AAPL           Security ID:  037833100
Meeting Date: MAR 01, 2019   Meeting Type: Annual
Record Date:  JAN 02, 2019

#    Proposal                     Mgt Rec   Vote Cast   Sponsor
1a   Elect Director James Bell        For       For     Management
1b   Elect Director Tim Cook          For       For     Management
1c   Elect Director Al Gore           For       For     Management
1d   Elect Director Bob Iger          For       For     Management
1e   Elect Director Andrea Jung       For       For     Management
1f   Elect Director Art Levinson      For       For     Management
1g   Elect Director Ron Sugar         For       For     Management
1h   Elect Director Sue Wagner        For       For     Management
2    Ratify Ernst &amp; Young LLP as Auditors   For      For         Management
3    Advisory Vote to Ratify Named     For       For     Management
     Executive Officers' Compensation
4    Proxy Access Amendments        Against   Against   Shareholder
5    Disclose Board Diversity and   Against   Against   Shareholder
     Qualifications

--------------------------------------------------------------
```

Type A.2: ISS ProxyExchange®

APPLE, INC.				
MEETING DATE: MAR 01, 2019				
TICKER: AAPL SECURITY ID: 037833100				
Proposal No	Proposal	Proposed By	Management Recommendation	Vote Cast
1a	Elect Director James Bell	Management	For	For
1b	Elect Director Tim Cook	Management	For	For
1c	Elect Director Al Gore	Management	For	For
1d	Elect Director Bob Iger	Management	For	For
1e	Elect Director Andrea Jung	Management	For	For
1f	Elect Director Art Levinson	Management	For	For
1g	Elect Director Ron Sugar	Management	For	For
1h	Elect Director Sue Wagner	Management	For	For
2	Ratify Ernst & Young LLP as Auditors	Management	For	For
3	Advisory Vote to Ratify Named Executive Officers' Compensation	Management	For	For
4	Proxy Access Amendments	Shareholder	Against	Against
5	Disclose Board Diversity and Qualifications	Shareholder	Against	Against

Type B: Glass Lewis Viewpoint®

Ticker	Security ID:	Meeting Date	Meeting Status	
AAPL	CUSIP 037833100	03/01/2019	Voted	
Meeting Type	Country of Trade			
Annual	United States			
Issue No.	Description	Proponent	Mgmt Rec	Vote Cast	For/Agnst Mgmt

Issue No.	Description	Proponent	Mgmt Rec	Vote Cast	For/Agnst Mgmt
1	Elect James A. Bell	Mgmt	For	For	For
2	Elect Timothy D. Cook	Mgmt	For	For	For
3	Elect Albert A. Gore	Mgmt	For	For	For
4	Elect Robert A. Iger	Mgmt	For	For	For
5	Elect Andrea Jung	Mgmt	For	For	For
6	Elect Arthur D. Levinson	Mgmt	For	For	For
7	Elect Ronald D. Sugar	Mgmt	For	For	For
8	Elect Susan L. Wagner	Mgmt	For	For	For
9	Ratification of Auditor	Mgmt	For	For	For
10	Advisory Vote on Executive Compensation	Mgmt	For	For	For
11	Shareholder Proposal Regarding Proxy Access Bylaw Amendment	ShrHoldr	Against	Against	For
12	Shareholder Proposal Regarding Disclosure of Board Qualifications	ShrHoldr	Against	Against	For

Type C: Broadridge ProxyEdge®

```
APPLE INC.                                                          Agenda Number:  934919359
--------------------------------------------------------------
        Security:  037833100
    Meeting Type:  Annual
    Meeting Date:  01-Mar-2019
         Ticker:  AAPL
           ISIN:  US0378331005
--------------------------------------------------------------
```

| Prop.#	Proposal	Proposal Type	Proposal Vote	For/Against Management
1a.	Election of director: James Bell	Mgmt	For	For
1b.	Election of director: Tim Cook	Mgmt	For	For
1c.	Election of director: Al Gore	Mgmt	For	For
1d.	Election of director: Bob Iger	Mgmt	For	For
1e.	Election of director: Andrea Jung	Mgmt	Against	Against
1f.	Election of director: Art Levinson	Mgmt	For	For
1g.	Election of director: Ron Sugar	Mgmt	For	For
1h.	Election of director: Sue Wagner	Mgmt	For	For
2.	Ratification of the appointment of Ernst & Young LLP as Apple's independent registered public accounting firm for 2019	Mgmt	For	For
3.	Advisory vote to approve executive compensation	Mgmt	For	For
4.	A shareholder proposal entitled "Shareholder Proxy Access Amendments"	Shr	Against	For
5.	A shareholder proposal entitled "True Diversity Board Policy"	Shr	Against	For

Figure 2: Competitive Landscape of the Proxy Advisory Industry

The figures on the left display the aggregate total net assets for ISS and Glass Lewis's customers and other mutual funds. The figures on the right display the relative market shares of ISS and Glass Lewis. Panel A includes the full sample, Panel B excludes the Big Four (i.e., BlackRock, Vanguard, Fidelity, and State Street), and Panel C excludes the top 10% largest funds each year.
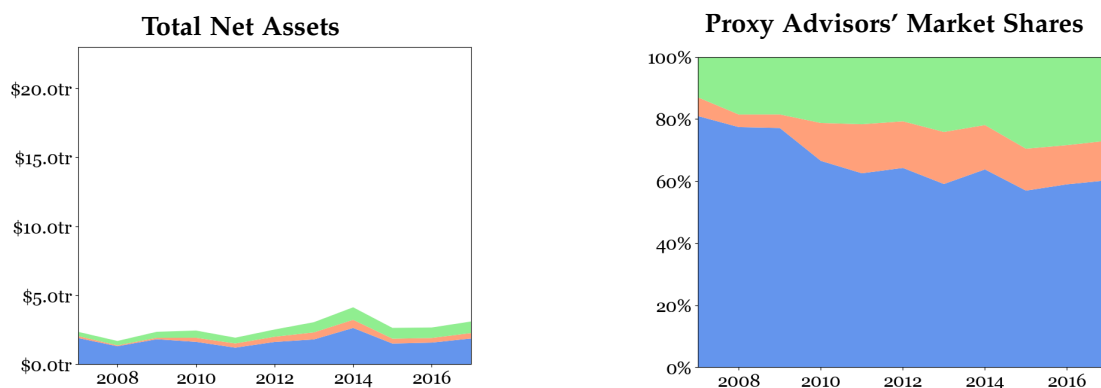
(A) Full Sample
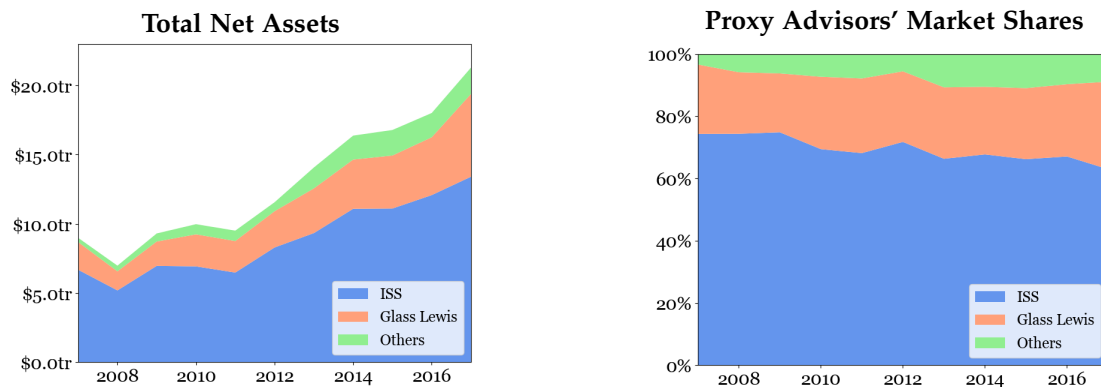
(B) Sample Excluding BlackRock, Vanguard, Fidelity, and State Street
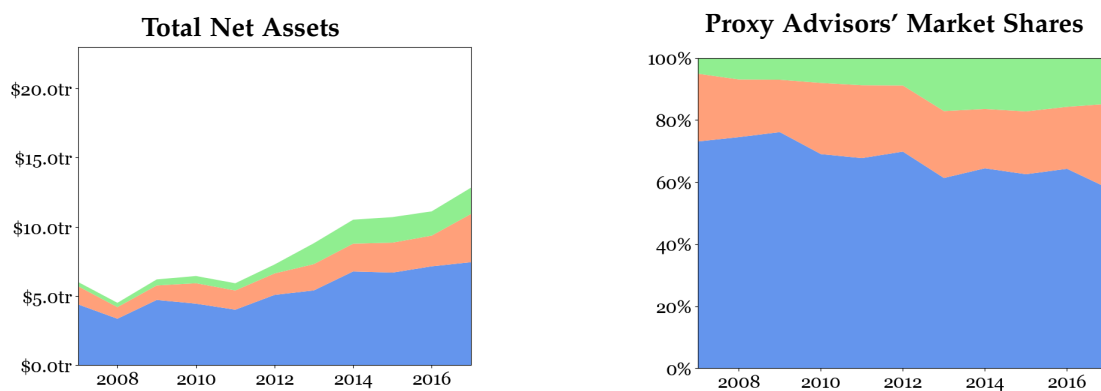
(C) Sample Excluding the Top 10% Largest Funds

Figure 3: The Trend Towards Robo-Voting

This figure displays the number (left figures), the fraction of investors (middle figures), and the fraction of votes (right figures) that robo-vote with ISS's recommendations (Panel A), Glass Lewis's recommendations (Panel B), or managements' recommendations (Panel C). The definitions of ISS robo-voters, Glass Lewis robo-voters, and management robo-voters are explained in Table 3. I exclude fund-years that have less than 100 votes.

(A) Robo-voting with ISS
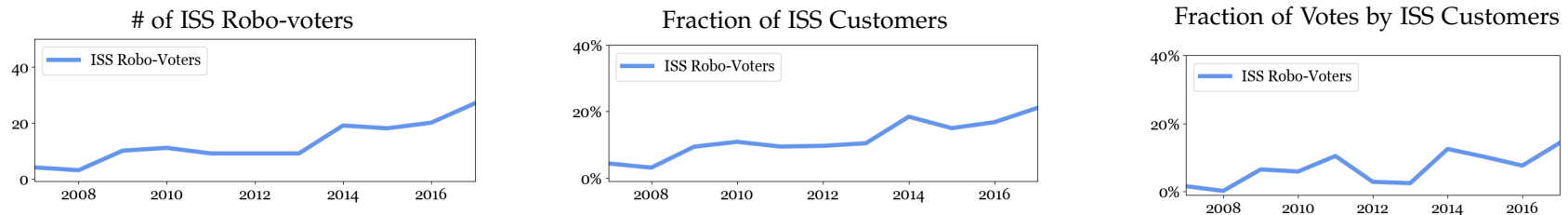
(B) Robo-voting with Glass Lewis
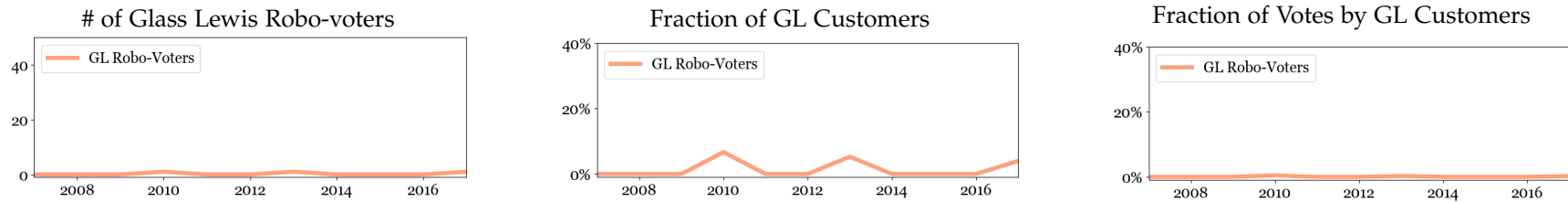
(C) Robo-voting with Management
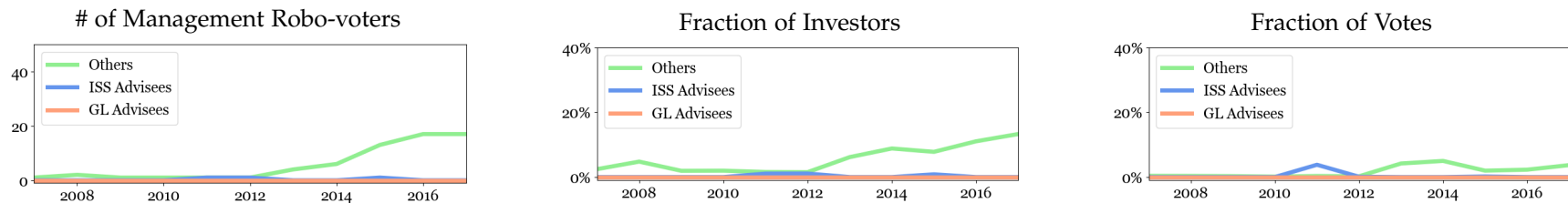
Figure 4: Robo-voting: Size and Indexer

Figure 4.A shows the percentage of ISS customers that robo-vote with ISS, separately for different quantiles of total net assets and for whether the fund family is an indexer. I define a fund family as an indexer if it provides any index funds. Figure 4.B displays the trend of robo-voting popularity among ISS customers with small (first 1/3 quantile), middle (second 1/3 quantile), and large (third 1/3 quantile) total net assets.

(A) Robo-voting Popularity by Quantiles in Total Net Assets
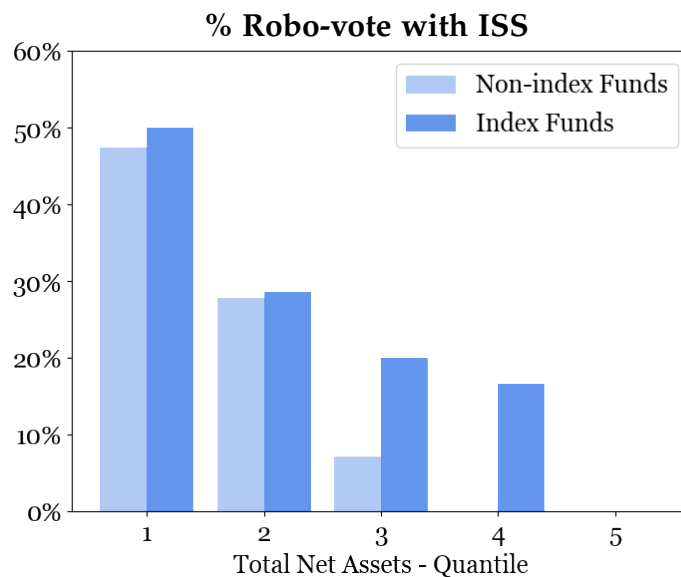
(B) Trend of Robo-voting Popularity by Small, Middle, and Large Fund Families
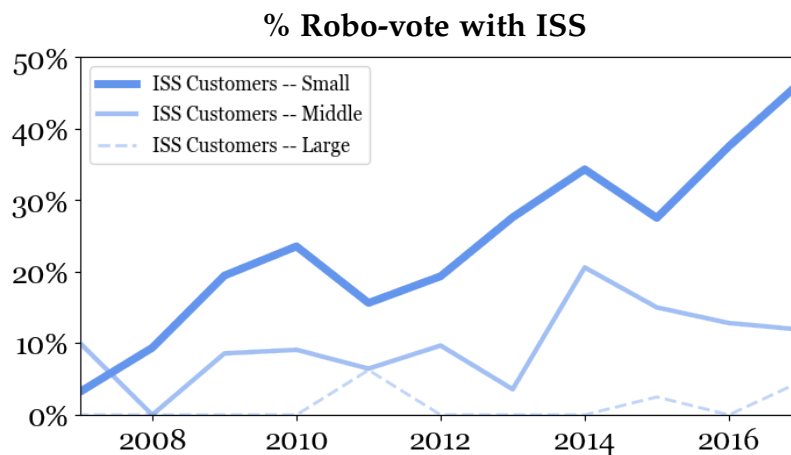
Figure 5: Fund Votes Under Different Proxy Advisor Recommendations

This figure shows the percentage of investors' votes that support management for proposals with different proxy advisors' recommendations. Panel A's sample includes all mutual funds, and Panel B separates the sample by funds' proxy voting platforms. In both panels, the x-axis denotes the identity of the proxy advisor(s) that recommend against the management, and the y-axis denotes the average of investors' votes (=1 if support the management and =0 if oppose the management). The vertical bar denotes the 95% confidence interval with standard errors clustered at the fund-family level.

(A) All Mutual Funds
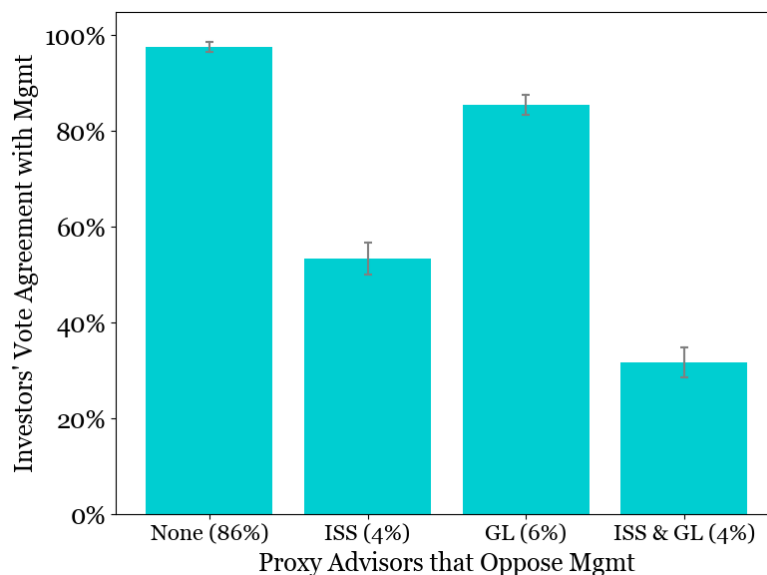
(B) Separate by Proxy Voting Platforms
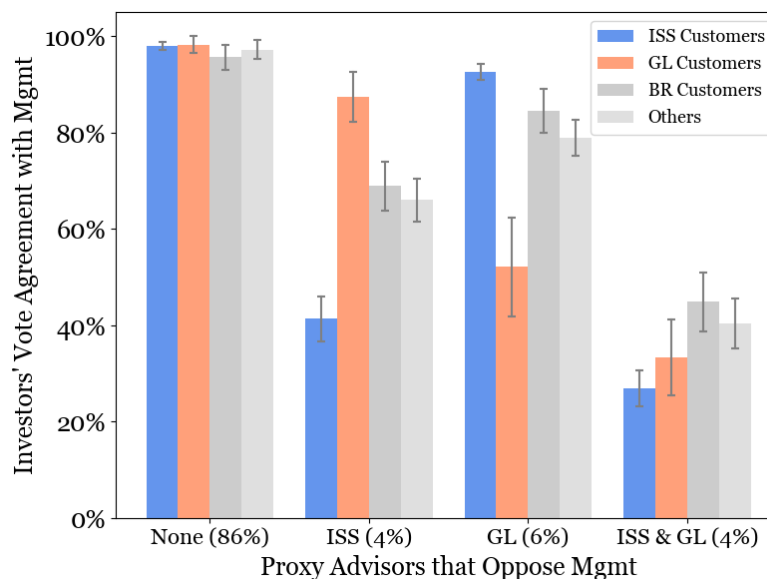
Figure 6: Investors' Votes on Different Proposals

This figure shows the percentage of investors' votes that support different proposals when ISS recommends against the proposal (Panel A) and Glass Lewis recommends against the proposal (Panel B).

(A) When ISS Recommends to Vote "Aganist" the Proposal
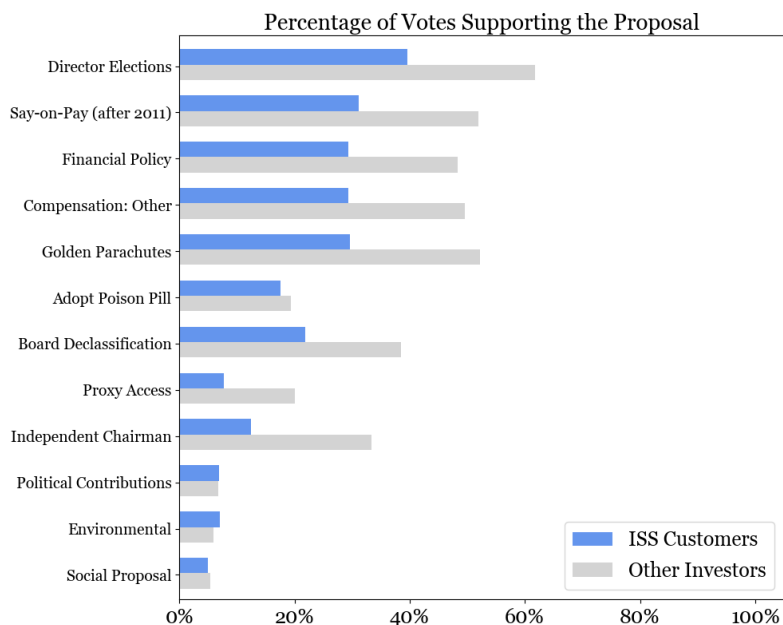
(B) When Glass Lewis Recommends to Vote "Aganist"the Proposal

43
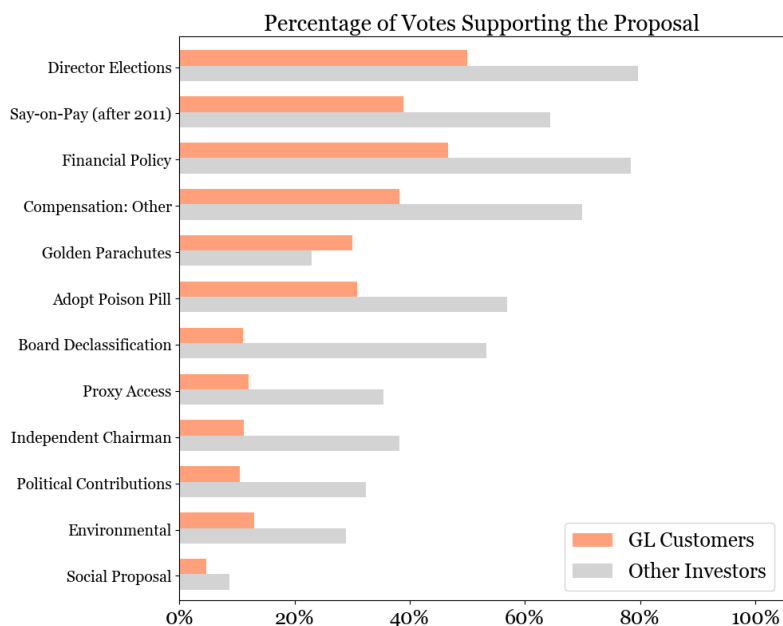
Figure 7: Voting Patterns For Funds that Switch Proxy Advisors

This figure shows the time-series patterns of fund votes if the fund has changed its voting platforms from ISS to Glass Lewis (Panel A) or from Glass Lewis to ISS (Panel B). In both panels, the first two figures plot the funds' "excess" agreement with ISS, and the last two figures plot the funds' "excess" agreement with Glass Lewis. The "excess" agreement with a proxy advisor is the percentage of the fund votes that agree with the proxy advisors' recommendation minus that of the benchmark on proposals where the proxy advisor opposes management. For the benchmark, the first and third figures use the switching fund's "Agree with PA" right before the switching year: a time-series comparison. The benchmark of the second and the fourth figure is the average "Agree with PA" investors who subscribe to the switching fund's former proxy advisor: a cross-sectional comparison. "Agree with PA" is the percentage of the fund's votes that are in the same direction as the proxy advisor's recommendations. The shaded areas are 95 percent confidence intervals.

(A) Being an ISS Customer → Being a Glass Lewis Customer
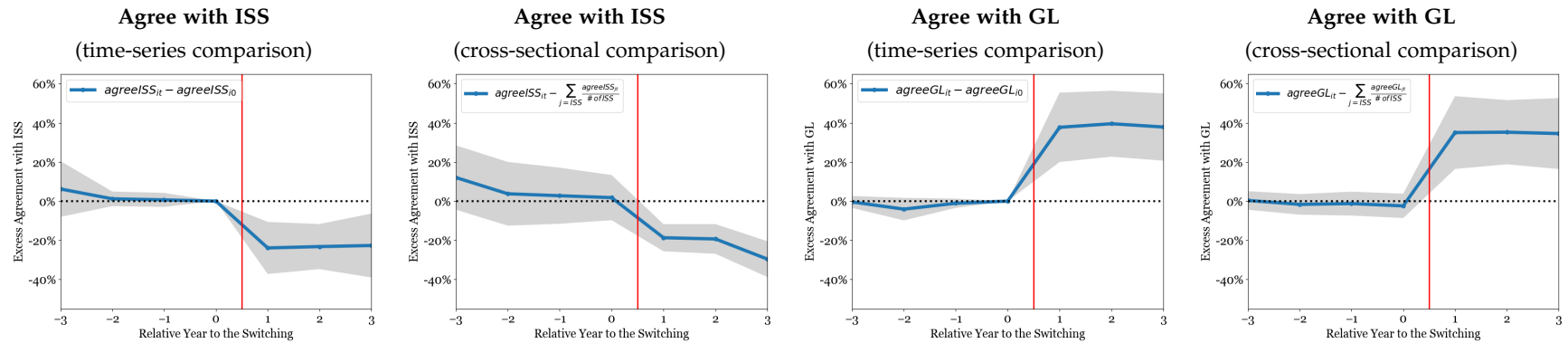
(B) Being a Glass Lewis Customer → Being an ISS Customer
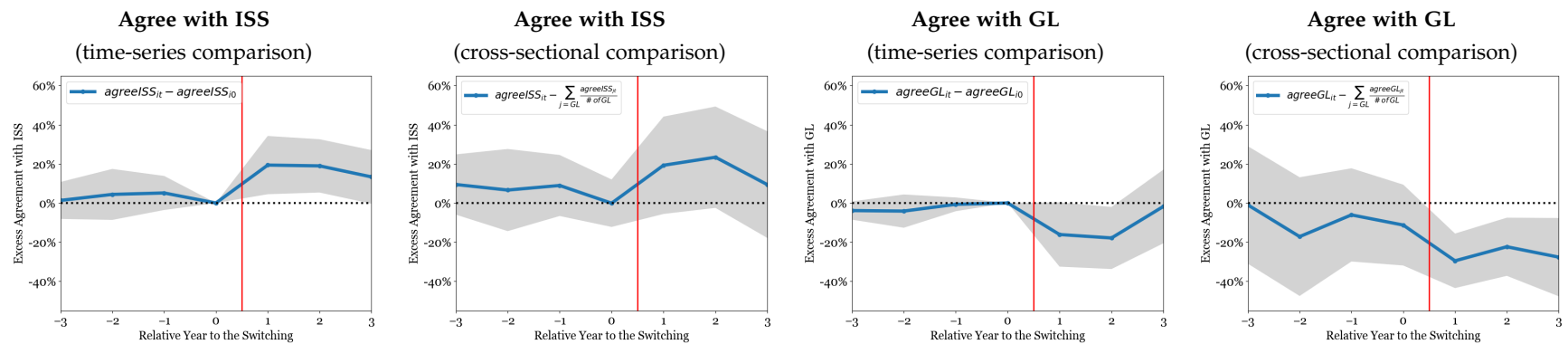
Figure 8: Matching Investor Ideologies

Panel A plots the ideology scores of each mutual fund family. Each dot's location represents the investor's voting ideology, which is calculated by the two-dimensional W-NOMINATE scores from its votes in 2012 (Bolton et al., 2020). Socially oriented investors have a lower score in the first dimension (i.e., appear to the left). Governance-oriented investors have a greater score in the second dimension (i.e., appear to the top). The size of each dot is weighted by the number of votes by the mutual fund. Panel B plots the sample of investors after matching on W-NOMINATE scores. The figure on the left shows the matching of ISS customers. The matching procedure is a one-to-one matching for each vote by ISS customers with another vote on the same proposal by an investor who is not an ISS customer. I match the two votes using the nearest neighbor search (Euclidean distance) on their two-dimensional W-NOMINATE scores. I restricted the sample of matched votes with Euclidean distances less than 0.1. The figure on the right shows the matching of Glass Lewis customers, constructed analogously.

(A) Full Sample
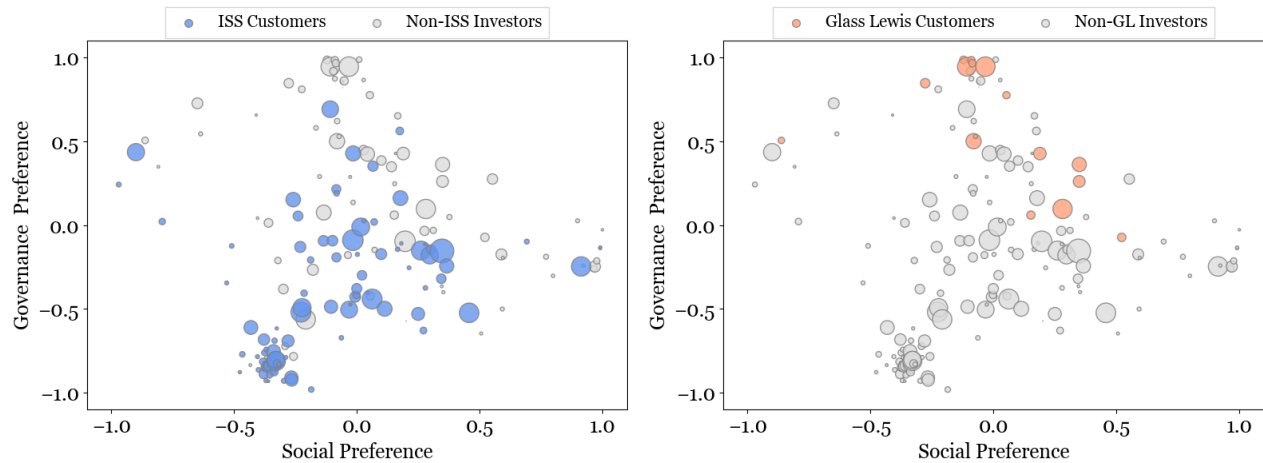
(B) After Matching
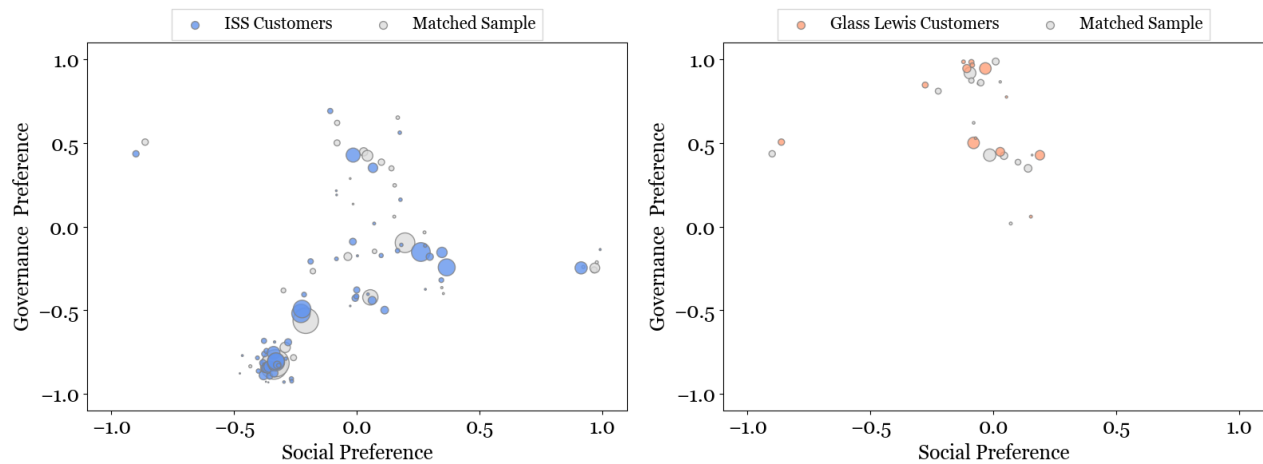
Internet Appendix for

"The Proxy Advisory Industry:
Influencing and Being Influenced"

Chong Shu

IA.1 Public Request on Glass Lewis's Recommendations

I obtained Glass Lewis (GL)'s recommendations to a large public pension fund for 2008-2017 through a Freedom of Information Act (FOIA) request. Part (A) provides a screenshot of the response, which contains the name of issuers, meeting dates, item numbers, proposal descriptions, GL's general recommendations, GL's customized recommendations to this particular investor, and the vote cast. Part (B) shows the details of the matching process between this data and ISS Voting Analytics. Part (C) shows the coverage of companies (measured by total assets) in the main sample (i.e., ISS Voting Analytics) that can be found with Glass Lewis's recommendations from the FOIA sample.

(A) Sample of the FOIA Response

(B) Matching Steps

Step one: match companies

The GL recommendations provided by the FOIA request do not contain company identifiers but only company names. ISS and GL may use different company names for the same company. For example, the ISS Voting Analytics dataset uses "Apple Inc." throughout sample years, but GL uses "Apple Computer Inc." in the early years. To match companies between GL's recommendations and ISS Voting Analytics, I first match each company name in GL's recommendations exactly with names that appeared in Type

B N-PX forms to get the company's ticker. The assumption of this step is that company names in Glass Lewis's voting system do not differ for different customers. I then use tickers to match companies between the FOIA data and ISS Voting Analytics.

Step two: match annual meetings

Matching annual meetings between GL's recommendations and ISS Voting Analytics is a straightforward one-to-one match of (ticker, meeting date) between the two datasets.

Step three: match proposals

One difficulty comes from the fact that ISS and Glass Lewis sometimes use different styles of sub-item numbers for director elections. For example, Glass Lewis uses item number "1" to denote the election of Howard Schultz in Starbucks's 2013 annual meeting, but ISS uses item number "1a" for the same election. As a result, using item number alone will result in a large number of missing matches. To ensure better matches, I perform the following steps.

- When both ISS and Glass Lewis use the same style (either digit or letter) for annual meetings, I use the item number to match.

- When ISS and Glass use different styles, I use the sequence number to match each proposal if the annual meeting's total number of proposals is the same between the two datasets.

- When ISS and Glass use different styles and if the annual meeting's total number of proposals is not the same between the two datasets, I treat those cases as errors and drop them.[23]

(C) Coverage of Glass Lewis Recommendations

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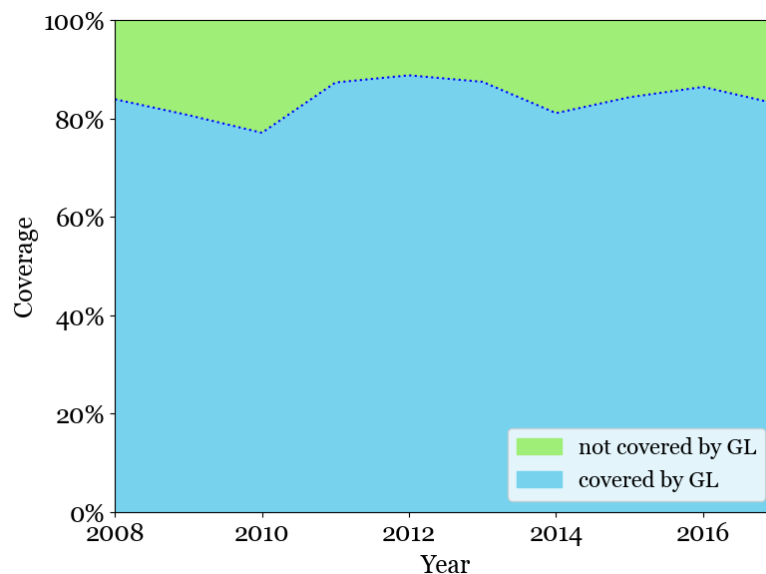
[23]There are 89 (out of 13,246) annual meetings where the total number of proposals is different between the two datasets. It mainly arises from the fact that the FOIA response is in the pdf format and non-English characters cannot be converted and hence become lost (e.g., Elect Øivind Lorentzen).

IA.2. Linking N-PX Forms to Proxy Voting Platforms

Identifying each mutual fund's use of a voting platform consists of three steps.

1. I identify common formats among all N-PX filings. I find that there are four most commonly used N-PX formats, denoted A.1, A.2, B, and C. The figures on the left display N-PX forms filed by BlackRock (Type A.1), Fidelity (Type A.2), John Hancock (Type B), and TIAA (Type C).[24]

2. I compare proposal descriptions on those four N-PX forms with those on the three voting platforms' vote disclosure services websites (VDS). The figures on the right display the VDS interfaces from BlackRock (hosted on ISS' website), Dimensional Fund Advisors (hosted on ISS' website), Nuveen funds (hosted on Glass Lewis' website), and JP Morgan funds (hosted on Broadridge's website). For comparison, all of them display Apple Inc's 2019 annual meeting.[25] I then link each N-PX form with the voting platform by comparing the proposal descriptions and item-number styles. For example, the Type A.1 and Type A.2 N-PX describes the fifth proposal as "5. Disclose Board Diversity and Qualifications", identical to ISS VDS; Type B N-PX describes it as "12. Shareholder Proposal Regarding Disclosure of Board Qualifications", identical to Glass Lewis VDS; Type C N-PX describes it as "5. A shareholder proposal entitled True Diversity Board Policay", identical to Broadridge VDS.

3. I use each N-PX form's column names to detect its format type (A.1, A,2, B, C, or none of them) and then use the type to identify each fund's use of a voting platform.

N-PX Type A.1 ↔ ISS VDS Version 1

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[24]BlackRock: https://www.sec.gov/Archives/edgar/data/1100663/000119312513350187/d583359dnpx.txt

Fidelity: https://www.sec.gov/Archives/edgar/data/35315/000087846713000520/npx811-02105_84.htm

John Hancock: https://www.sec.gov/Archives/edgar/data/1331971/000143893413000446/brd0310001331971.txt

TIAA: https://www.sec.gov/Archives/edgar/data/1068204/000093041313004438/c74883_npx.txt

[25]ISS VDS 1: http://vds.issproxy.com/SearchPage.php?CustomerID=1615

ISS VDS 2: https://vds.issgovernance.com/vds/#/NDM3Mg==

GL VDS: https://viewpoint.glasslewis.net/webdisclosure/search.aspx?glpcustuserid=TIA129

Broadridge VDS: https://central-webd.proxydisclosure.com/WebDisclosure/wdFundSelection?token=JPMFunds

ISS has two VDS and two N-PX formats. See `https://www.sec.gov/litigation/admin/2013/ia-3611.pdf` at 2: "Throughout the period of 2007 to early 2012, ISS provided an application via a confidential website to its institutional shareholder advisory clients to assist them in voting their proxy ballots. The current version of this application is called 'ProxyExchange,' which ISS rolled out in early 2010, but prior versions of the application have existed throughout the relevant time period (2007 to early 2012)."

N-PX Type A.2 ↔ ISS VDS Version 2

APPLE, INC.
MEETING DATE: MAR 01, 2019
TICKER: AAPL   SECURITY ID: 037833100

Proposal No	Proposal	Proposed By	Management Recommendation	Vote Cast
1a	Elect Director James Bell	Management	For	For
1b	Elect Director Tim Cook	Management	For	For
1c	Elect Director Al Gore	Management	For	For
1d	Elect Director Bob Iger	Management	For	For
1e	Elect Director Andrea Jung	Management	For	For
1f	Elect Director Art Levinson	Management	For	For
1g	Elect Director Ron Sugar	Management	For	For
1h	Elect Director Sue Wagner	Management	For	For
2	Ratify Ernst & Young LLP as Auditors	Management	For	For
3	Advisory Vote to Ratify Named Executive Officers' Compensation	Management	For	For
4	Proxy Access Amendments	Shareholder	Against	Against
5	Disclose Board Diversity and Qualifications	Shareholder	Against	Against

Apple, Inc.

Ticker	Meeting Date	Record Date	Security ID	Meeting Type	Industry Sector	Country
AAPL	01-Mar-2019	02-Jan-2019	037833100	Annual	Technology Hardware, Storage & Peripherals	USA

Item #	Proposal	Proponent	Mgmt Rec	Vote
1a	Elect Director James Bell	Management	For	For
1b	Elect Director Tim Cook	Management	For	For
1c	Elect Director Al Gore	Management	For	For
1d	Elect Director Bob Iger	Management	For	For
1e	Elect Director Andrea Jung	Management	For	For
1f	Elect Director Art Levinson	Management	For	For
1g	Elect Director Ron Sugar	Management	For	For
1h	Elect Director Sue Wagner	Management	For	For
2	Ratify Ernst & Young LLP as Auditors	Management	For	For
3	Advisory Vote to Ratify Named Executive Officers' Compensation	Management	For	For
4	Proxy Access Amendments	Shareholder	Against	Against
5	Disclose Board Diversity and Qualifications	Shareholder	Against	Against

N-PX Type B ↔ Glass Lewis VDS

Apple Inc.

	Ticker	Security ID:	Meeting Date	Meeting Status
	AAPL	CUSIP 037833100	03/01/2019	Voted
	Meeting Type	Country of Trade		
	Annual	United States		

Issue No.	Description	Proponent	Mgmt Rec	Vote Cast	For/Agnst Mgmt
1	Elect James A. Bell	Mgmt	For	For	For
2	Elect Timothy D. Cook	Mgmt	For	For	For
3	Elect Albert A. Gore	Mgmt	For	For	For
4	Elect Robert A. Iger	Mgmt	For	For	For
5	Elect Andrea Jung	Mgmt	For	For	For
6	Elect Arthur D. Levinson	Mgmt	For	For	For
7	Elect Ronald D. Sugar	Mgmt	For	For	For
8	Elect Susan L. Wagner	Mgmt	For	For	For
9	Ratification of Auditor	Mgmt	For	For	For
10	Advisory Vote on Executive Compensation	Mgmt	For	For	For
11	Shareholder Proposal Regarding Proxy Access Bylaw Amendment	ShrHoldr	Against	Against	For
12	Shareholder Proposal Regarding Disclosure of Board Qualifications	ShrHoldr	Against	Against	For

Company:
Apple Inc

Ticker:	Country:	Meeting Date:	Meeting Type:	Contested:
AAPL	United States	03/01/2019	Annual	No

|	Proposal	Mgmt Rec	Our Vote	Proponent
1	Elect James A. Bell	For	For	Mgmt
2	Elect Timothy D. Cook	For	For	Mgmt
3	Elect Albert A. Gore	For	For	Mgmt
4	Elect Robert A. Iger	For	For	Mgmt
5	Elect Andrea Jung	For	For	Mgmt
6	Elect Arthur D. Levinson	For	For	Mgmt
7	Elect Ronald D. Sugar	For	For	Mgmt
8	Elect Susan L. Wagner	For	For	Mgmt
9	Ratification of Auditor	For	For	Mgmt
10	Advisory Vote on Executive Compensation	For	For	Mgmt
11	(SHP) Shareholder Proposal Regarding Proxy Access Bylaw Amendment	Against	For	ShrHoldr
12	(SHP) Shareholder Proposal Regarding Disclosure of Board Qualifications	Against	Against	ShrHoldr

N-PX Type C ↔ Broadrige VDS

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APPLE INC.                                          Agenda Number: 934919359
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      Security: 037833100
  Meeting Type: Annual
  Meeting Date: 01-Mar-2019
        Ticker: AAPL
          ISIN: US0378331005
------------------------------------------------------------------------
```

Prop.#	Proposal	Proposal Type	Proposal Vote	For/Against Management
1a.	Election of director: James Bell	Mgmt	For	For
1b.	Election of director: Tim Cook	Mgmt	For	For
1c.	Election of director: Al Gore	Mgmt	For	For
1d.	Election of director: Bob Iger	Mgmt	For	For
1e.	Election of director: Andrea Jung	Mgmt	Against	Against
1f.	Election of director: Art Levinson	Mgmt	For	For
1g.	Election of director: Ron Sugar	Mgmt	For	For
1h.	Election of director: Sue Wagner	Mgmt	For	For
2.	Ratification of the appointment of Ernst & Young LLP as Apple's independent registered public accounting firm for 2019	Mgmt	For	For
3.	Advisory vote to approve executive compensation	Mgmt	For	For
4.	A shareholder proposal entitled "Shareholder Proxy Access Amendments"	Shr	Against	For
5.	A shareholder proposal entitled "True Diversity Board Policy"	Shr	Against	For

APPLE INC.

Meeting Date: 01-MAR-2019	Meeting Type: Annual	Security/CINS: 037833100
Ticker: AAPL	Agenda Number: 934919359	ISIN: US0378331005

Item	Proposal Description	Type	Vote	For/Against Management's Recommendation
1a.	Election of director: James Bell	Mgmt	For	For
1b.	Election of director: Tim Cook	Mgmt	For	For
1c.	Election of director: Al Gore	Mgmt	For	For
1d.	Election of director: Bob Iger	Mgmt	For	For
1e.	Election of director: Andrea Jung	Mgmt	For	For
1f.	Election of director: Art Levinson	Mgmt	For	For
1g.	Election of director: Ron Sugar	Mgmt	For	For
1h.	Election of director: Sue Wagner	Mgmt	For	For
2.	Ratification of the appointment of Ernst & Young LLP as Apple's independent registered public accounting firm for 2019	Mgmt	For	For
3.	Advisory vote to approve executive compensation	Mgmt	For	For
4.	A shareholder proposal entitled "Shareholder Proxy Access Amendments"	Shr	Against	For
5.	A shareholder proposal entitled "True Diversity Board Policy"	Shr	Against	For

IA.3 Cost of Proxy Advice and Voting Platforms

The prices that proxy advisors charge their customers are generally confidential. To shed some light on the cost of proxy advice, I sent Freedom of Information Act (FOIA) requests to the 30 largest public pension funds. I asked about their subscription to proxy advice, the voting platform they use, and the price they pay. Eleven of them responded and provided me with the information. The rest either declined my request or did not subscribe to any proxy advice. The first figure below plots the total price each pension pays and its total assets (as of 2017). Among the eleven pension funds, seven of them subscribe to only one firm between ISS and Glass Lewis. Four of them subscribe to both ISS and Glass Lewis for proxy advice but use only one platform for vote execution. This fact enables me to estimate the difference between the cost of proxy advice and the cost of the bundled package of proxy advice and vote execution. The right figure plots the prices separately for proxy advice and bundled packages.
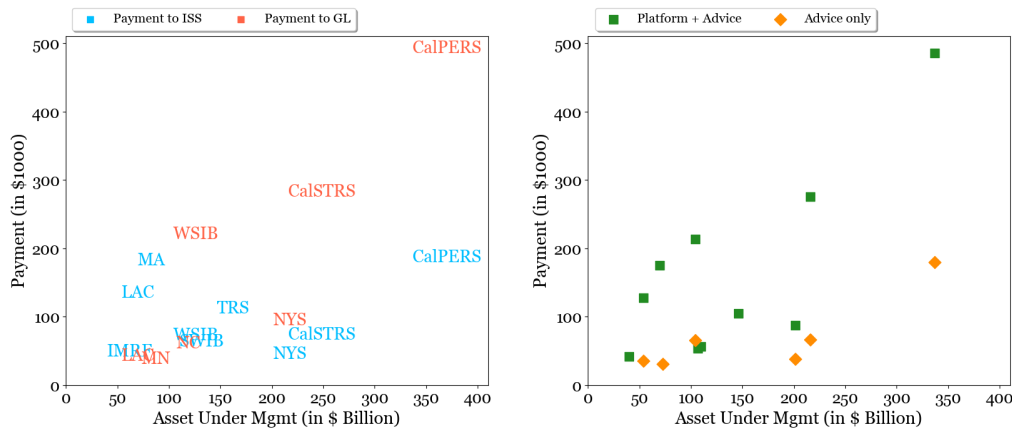
The following table displays the OLS regression of payment as a function of vendor identity, whether the payment is for the proxy advice only or vote execution service bundle, and the total asset assets. It shows that if a fund also uses the proxy advisor's voting platform, the fund has to pay $161,290 more than if it only subscribes to its advice (the unconditional mean for advice is $69,080).

	Payment (in $1000)	
Recipient = ISS	-45.61	
	(42.37)	
Bundled with platform	106.55**	161.29**
	(43.69)	(45.11)
Total Asset (in $ billion)	0.82***	
	(0.23)	
Fund Effect		Yes
Adjusted R^2	0.53	0.65
Observations	16	16

IA.4 Votes in Proposals When Different PA Opposes Management

This table repeats the analyses of Table 4 in the main text after dividing proposals into four sub-samples: (a) ISS supports management and Glass Lewis supports management; (b) ISS supports management and Glass Lewis opposes management; (c) ISS opposes management and Glass Lewis supports management; (d) ISS opposes management and Glass Lewis opposes management. The dependent variable in Panel A (Panel B) is a dummy that equals 1 if the vote is cast in the same direction as ISS's (Glass Lewis's) recommendation. All columns include proposal fixed effect and controls for fund-family characteristics appeared in Table 1C. Standard errors are clustered at the fund family-year level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

(A) Vote Cast in the Same Direction as ISS Recommendations

	Dependent Variable = 1 if the vote is aligned with ISS recommendation			
	ISS Supports & GL Supports Management	ISS Supports & GL Opposes Management	ISS Opposes & GL Supports Management	ISS Opposes & GL Opposes Management
	(1)	(2)	(3)	(4)
ISS Customer	0.01**	0.10***	0.27***	0.16***
	(0.00)	(0.02)	(0.02)	(0.02)
GL Customer	0.01**	-0.30***	-0.20***	0.08***
	(0.00)	(0.04)	(0.03)	(0.03)
Controls	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.03	0.15	0.15	0.09
Observations	6,833,914	490,218	338,973	314,441
# of Clusters	2,375	2,335	2,314	2,316

(B) Vote Cast in the Same Direction as Glass Lewis Recommendations

	Dependent Variable = 1 if the vote is aligned with Glass Lewis recommendation			
	GL Supports & ISS Supports Management	GL Supports & ISS Opposes Management	GL Opposes & ISS Supports Management	GL Opposes & ISS Opposes Management
	(1)	(2)	(3)	(4)
GL Customer	0.01**	0.20***	0.30***	0.08***
	(0.00)	(0.03)	(0.04)	(0.03)
ISS Customer	0.01**	-0.27***	-0.10***	0.16***
	(0.00)	(0.02)	(0.02)	(0.02)
Controls	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.03	0.15	0.15	0.09
Observations	6,833,914	338,973	490,218	314,441
# of Clusters	2,375	2,314	2,335	2,316

IA.5 Relating to Malenko and Shen (2016)

This table repeats the analyses in Table 5's Panel A by restricting the sample of say-on-pay proposals to the ones where Glass Lewis supports the management. Each observation represents a fund vote in say-on-pay proposals. Columns 1 and 2 restrict the sample of say-on-pay proposals to the ones where Glass Lewis supports the management; similarly, columns 3 and 4 restrict the sample of say-on-pay proposals to the ones where ISS supports the management. All columns include proposal fixed effect and controls for fund-family characteristics appeared in Table 1C. Standard errors are clustered at the fund family-year level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent Variable = 1 if the vote is in the same direction as ISS recommendation		Dependent Variable = 1 if the vote is in the same direction as GL recommendation	
	ISS Supports Management	ISS Opposes Management	GL Supports Management	GL Opposes Management
	(1)	(2)	(3)	(4)
ISS Customer	0.01	0.38***		
	(0.01)	(0.03)		
GL Customer			0.00	0.38***
			(0.01)	(0.04)
Controls	Yes	Yes	Yes	Yes
Proposal Effect	Yes	Yes	Yes	Yes
Adjusted R^2	0.02	0.15	0.02	0.11
Observations	434,419	27,370	434,419	54,157
# of Clusters	1,886	1,729	1,886	1,769

Back-of-the-envelope calculation:

ISS's influence on total mutual fund votes = $(0.01 + 0.38)$ * ISS market share = $(0.01 + 0.38) * 63\% = 24.6\%$

(that is, exogenously changing ISS's recommendations from "For" to "Against" while keeping Glass Lewis recommendations unchanged will reduce the total support of the proposal by 24.6%)

GL's influence on total mutual fund votes = $(0.00 + 0.38)$ * GL market share = $(0.00 + 0.38) * 28\% = 10.6\%$

(that is, exogenously changing Glass Lewis's recommendations from "For" to "Against" while keeping ISS recommendations unchanged will reduce the total support of the proposal by 10.6%.)

IA.6 Alternative Specifications for Proxy Advisors' Influence

Each observation is a fund-vote. For all columns, dependent variables are dummy variables that equal one if the fund voted "For" the proposal. Independent variables "ISS Recommends For"/"GL Recommends For"/"Mgmt Recommends For" are dummy variables that equal 1 if ISS/GL/management recommends voting "For" the proposal. Standard errors are clustered at the fund family-year level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Regressions are of the form

$$\text{Vote For}_{ip} = \text{ISS For}_p \cdot \left(\beta_1 + \beta_2 \cdot \text{ISS Customer}_{it} + \beta_3 \cdot \text{GL Customer}_{it} \right)$$
$$+ \text{GL For}_p \cdot \left(\beta_4 + \beta_5 \cdot \text{ISS Customer}_{it} + \beta_6 \cdot \text{GL Customer}_{it} \right)$$
$$+ \text{Mgmt For}_p \cdot \left(\beta_7 + \beta_8 \cdot \text{ISS Customer}_{it} + \beta_9 \cdot \text{GL Customer}_{it} \right) + \varepsilon_{ip}$$

	Dependent variable = 1 if the Fund Voted "For"			
	(1)	(2)	(3)	(4)
ISS Recommends For	0.47***	0.32***		
	(0.01)	(0.02)		
ISS Recommends For × ISS Customer		0.27***	0.27***	0.27***
		(0.02)	(0.02)	(0.02)
ISS Recommends for × GL Customer		-0.21***	-0.21***	-0.20***
		(0.02)	(0.02)	(0.02)
GL Recommends For	0.14***	0.17***		
	(0.01)	(0.01)		
GL Recommends For × ISS Customer		-0.10***	-0.10***	-0.10***
		(0.02)	(0.02)	(0.02)
GL Recommends For × GL Customer		0.31***	0.31***	0.31***
		(0.03)	(0.03)	(0.03)
Mgmt Recommends For	0.33***	0.43***		
	(0.01)	(0.02)		
Mgmt Recommends For × ISS Customer		-0.15***	-0.15***	-0.14***
		(0.02)	(0.02)	(0.02)
Mgmt Recommends For × GL Customer		-0.07**	-0.07**	-0.06**
		(0.03)	(0.03)	(0.03)
ISS Customer		-0.00	-0.01	
		(0.01)	(0.01)	
GL Customer		-0.02	-0.02	
		(0.02)	(0.02)	
Proposal Effect			Yes	Yes
Fund × Year Effect				Yes
Adjusted R^2	0.38	0.41	0.43	0.49
Observations	8,035,567	8,035,567	8,035,460	8,035,460
# of Clusters	2411	2411	2411	2411

IA.7 Votes with Different Characteristics & Matching on Fund Size

This table shows the average fund family size for votes with different characteristics. In Panel A, fund votes are separated by whether the fund family's total net assets are above or below median among votes in the same proposal. In Panel B, fund votes are separated by whether the fund family visited the proposal's proxy statement on the SEC Edgar website. To control for fund family size, a vote that visits Edgar is matched with a vote that does not visit Edgar from fund families with the closest TNA. In Panel C, fund votes are separated by whether the fund family has a strong or weak voting preference. To control for fund family size, a vote from a fund with a strong voting preference is matched with a vote from a fund with a weak voting preference that has the closest TNA. I denote a fund to have a strong voting preference if its W-NOMINATE score is either below the 25% quantile or above the 75% quantile.

(A) Fund Family Size

Total Net Asset	Number of Votes	Total Net Asset
Above Median	7,394,032	394,959.6 (265.4)
Below Median	7,394,032	12,512.1 (16.1)
Diff (t-statistics)	0	382,447.6*** (1,438.6)

(B) Information

Before Matching on Fund Family Size		
Visit Edgar?	**Number of Votes**	**Total Net Asset**
Yes	433,703	932,332.2 (1,602.1)
No	6,180,771	274,489.0 (236.4)
Diff (t-statistics)	-5,747,068	657,843.3*** (665.6)

After Matching on Fund Family Size		
Visit Edgar?	**Number of Votes**	**Total Net Asset**
Yes	148,316	122,798.3 (575.2)
No	148,316	122,764.2 (574.4)
Diff (t-statistics)	0	34.1 (0.0)

(C) Voting Preference

| Before Matching on Fund Family Size		
Preferences	**Number of Votes**	**Total Net Asset**
Strong Preference	5,831,000	260,818.3 (310.2)
Weak Preference	9,176,101	165,908.5 (116.4)
Diff (t-statistics)	-3,345,101	94,909.8*** (330.5)

After Matching on Fund Family Size		
Preferences	**Number of Votes**	**Total Net Asset**
Strong Preference	4,497,883	44,621.7 (53.1)
Weak Preference	4,497,883	44,552.8 (53.0)
Diff (t-statistics)	0	68.8 (0.9)

IA.8 Proposal Passing Margin

Panel A displays the distribution of vote margins. The figure on the left includes all proposals in my sample. The figure on the right includes proposals in which ISS has changed its recommendations from the time when the same proposal appeared in the same company. The highlighted areas include the proposals with a 20% margin from being passed as used in the main analyses. Panel B shows the result of Table 12 for different definitions of close-call margins. It plots the coefficient $\hat{\beta_1}$ of the OLS regression $CAR_p = \beta_0 + \beta_1 ISS\ Wins_p + \varepsilon_p$, where CAR_p is the company's cumulative abnormal return with $[-10, 10]$ window. The regression includes the proposal-type fixed effect. The sample in the left figure includes close-call proposals in which ISS changes its recommendations, and the right figure's sample includes close-call proposals in which ISS does not change its recommendations.

(A) Distribution of Proposals' Margins from Being Passed
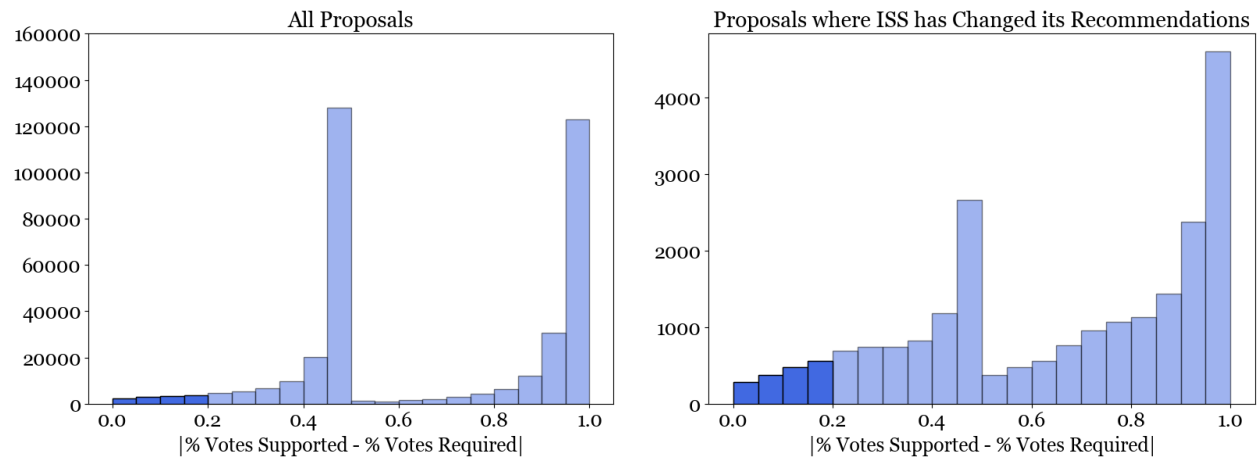
(B) Effect of ISS's Changed Recommendation in the Company's CAR for the Sample of Proposals with Different Margins from Being Passed