

# The Proxy Advisory Industry: Influencing and Being Influenced\*

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## Abstract

This paper develops two new methods to infer a mutual fund's proxy advisors from SEC filings. It then applies these methods to characterize features of the proxy advice industry from 2007 to 2021: (i) As of 2021, ISS and Glass Lewis collectively control approximately 90 percent of the market. During this period, the market share of ISS remains stable, while that of Glass Lewis has increased. (ii) When a proxy advisor issues a recommendation opposing management, its customers are approximately 20 percentage points more likely to also oppose management compared to other investors. (iii) Funds that subscribe to both proxy advisors tend to vote more similarly to the recommendations of the advisor whose voting platform they use. (iv) Proxy advisors often change their advisory stance when investors disagree with their previous advice. I offer suggestive evidence that this adaptation reflects both learning from informed investors and a desire by proxy advisors to align with the preferences of their customers.

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## Introduction

A problem with corporate governance is that many shareholders are rationally apathetic, unwilling to invest in information that would allow 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. Moreover, recommendations by proxy advisors are often criticized for imposing one-size-fits-all governance structures ([Levit and Tsoy, 2021](#); [Becher et al., 2023](#)).

A challenge in studying the proxy advice industry is that the identity of a fund's advisor is generally not known to researchers. Without being able to identify each fund's proxy advisor, it is challenging to draw definitive conclusions on many questions about the industry, ranging from basic issues such as the industry's concentration to more textured inquiries concerning the objectives of proxy advisors.

The primary innovation of this paper is to develop two methods to infer each mutual fund's proxy advisors from its regulatory filings. Since 2003, mutual funds have been required to disclose their votes to the U.S. Securities and Exchange Commission (SEC) by submitting Form N-PX. Filers have discretion in how they format the form and describe their votes. Mutual funds rarely carry out this potentially time-consuming task themselves, as it may involve reporting on tens of thousands of votes each year. Instead, they outsource the task to their proxy advisors. I demonstrate that, based on the way the form is formatted and how issues are described, one can determine which proxy advisor files the form. The inference of proxy advisors from N-PX forms can be further corroborated by mutual funds' statutory prospectuses, which occasionally detail funds' contractual relationships with proxy advisors. I then apply these two methods to characterize several features of the proxy advice market.

The first application is to characterize the concentration of the market. Critics of the industry argue that its concentration enables ISS and Glass Lewis to wield significant control over corporate elections ([Copland et al., 2018](#)). I find that as of 2021, ISS controls 48 percent of the proxy advice market for U.S. mutual funds, with assets totaling \$26.8 trillion from 144 fund families. Glass Lewis holds 42 percent, with \$23.6 trillion in assets across 94 fund families. These figures involve double-counting of assets from mutual funds that subscribe to multiple proxy advisors. Notably, the trend towards subscriptions to multiple advisors

has been increasing. By apportioning the assets of funds with multiple advisors equally among the advisors, ISS's market share adjusts to 47 percent, and Glass Lewis's to 37 percent. I also find that from 2007 to 2021, the market share of ISS remains stable, while that of Glass Lewis has increased.

The second set of findings concerns the voting behavior of proxy advisor customers. It is difficult to study the influence of proxy advisors on investor votes, as researchers cannot easily differentiate whether investors and proxy advisors reach similar conclusions simply because they perceive the same information about each proposal's merit. A notable exception is [Malenko and Shen \(2016\)](#), who control proposal fundamentals by utilizing a cutoff in ISS's voting guidelines. By leveraging information that links investors to their proxy advisors, I extend the literature by providing another perspective to control proposal fundamentals. Specifically, I analyze the votes cast by subscribers of a specific proxy advisor, and then control for proposal-specific factors by comparing those votes to the votes of other investors on those same proposals.

I find that when a proxy advisor issues negative recommendations, there is a sizable decrease in support for the proposal among its customers compared to non-customers. For instance, when ISS recommends voting against a director's election, its customers are 25 percentage points more likely to vote against that director than investors who are not ISS subscribers. Similarly, when Glass Lewis recommends voting against a director, its customers are 17 percentage points more likely to oppose that director compared to other investors. I observe a similar pattern for say-on-pay proposals: negative recommendations from ISS or Glass Lewis are associated with decreases of 32 and 25 percentage points, respectively, in support from their customers. These findings are in line with those of [Malenko and Shen \(2016\)](#), who show that a negative recommendation on a say-on-pay proposal can lead to a 25 percentage point reduction in voting support during 2010-2011.

I then explore the relationship between the voting behavior of mutual funds and the voting platforms they use. Both ISS and Glass Lewis not only offer voting advice but also provide voting platforms. By examining the interaction between investors' voting platforms and their proxy advisors, I can glean additional insights into why subscribers of different proxy advisors vote differently. In theory, the choice of voting platforms should not affect how investors vote, given their source of proxy advice. However, my analysis indicates that among investors who subscribe to both proxy advisors for voting advice, those using ISS's voting system exhibit a 13 percentage point higher agreement with ISS's recommendations. Similarly, investors using Glass Lewis's voting platform tend to vote 19 percentage points more consistently with Glass Lewis's advice. This finding raises the possibility that the

pre-population of recommendations on proxy advisors' voting platforms could play a role in how their customers vote. For example, such pre-population of votes could potentially encourage investors to vote mechanically in line with proxy advisor recommendations ([Rose, 2021](#)).

Many industry participants have indeed expressed concerns about investors potentially voting in lockstep with their proxy advisors' recommendations, a practice known as "robo-voting" ([Doyle, 2018](#)). My findings indicate that the proportion of ISS's customers who vote almost exclusively in line with its recommendations has increased from 7 percent in 2007 to 23 percent in 2021. During the same period, the proportion of Glass Lewis customers engaging in robo-voting has risen from 0 percent to 9 percent. Additionally, I find that a proxy advice customer is more likely to engage in robo-voting if it also uses the voting system of the proxy advisor. Moreover, smaller investors and those offering index fund products are more likely to be robo-voters.

Considering the concentration in the proxy advisory market and the prevalence of robo-voting, it is crucial to understand the extent to which proxy advice aligns with investor preferences. Anecdotally, ISS conducts annual surveys to assess evolving investor preferences. My findings indicate that both proxy advisors are more likely to change their recommendations on specific proposals when more investors disagree with their prior recommendations. Moreover, the likelihood of the proxy advisors supporting a particular broad issue also changes more significantly when there is greater previous investor disagreement with their recommendations. These findings suggest that there may exist a channel from investor preferences to proxy advisor recommendations.

Two non-mutually exclusive explanations could account for these findings. On the one hand, shareholders often possess specialized information, and proxy advisors may consider investors' votes as part of their information-gathering process. On the other hand, profit-driven proxy advisors might align their voting policies with the preferences of investors. I find suggestive evidence supporting both explanations. Specifically, I observe a higher frequency of proxy advisors changing recommendations when there is greater disagreement among more informed investors compared to less informed ones. This observation suggests that the information-gathering explanation is plausible. Moreover, the frequency of changes is also higher when there is significant disagreement from investors with strong voting preferences. This finding, coupled with the observation that proxy advisors regularly update their voting policies on broad issues, particularly in cases of high investor disagreement, suggests that the preference-alignment channel is also plausible.

**Related Literature** This paper contributes to the literature on the impacts of proxy advisor recommendations. [Dasgupta, Fos, and Sautner \(2020\)](#) provide a survey of this literature. Prior studies, such as [Cai et al. \(2009\)](#), [Alexander et al. \(2010\)](#), [Ertimur et al. \(2013\)](#), and [Larcker et al. \(2015\)](#), document a positive correlation between proxy advisor recommendations and shareholder support, showing that negative recommendations from ISS are associated with approximately a 20 percentage point increase in opposing votes. [Iliev and Lowry \(2015\)](#) show that such correlation is stronger for smaller funds and those with higher turnover, implying that these funds have less incentive to independently assess the issues being voted on. [Malenko and Shen \(2016\)](#) offer causal interpretations of ISS's influence on say-on-pay proposals in 2010-2011 by employing a cutoff in ISS's voting guidelines. [Brav et al. \(2020\)](#) indicate that proxy advisors exert less influence in contested elections. My paper contributes to this literature by offering a new perspective for controlling proposal merits: the method compares votes on identical proposals among investors who are either customers of a proxy advisor or not. Moreover, by examining the interplay between voting platforms and contractual agreements, I further demonstrate that the usage of proxy advisors' platforms is also related to how investors vote, in addition to proxy advice.

This paper also explores a likely channel from investor preferences to proxy advisor recommendations, showing that the frequency of proxy advisors changing their advisory stance is associated with investors' prior disagreements. This finding contributes to the study of proxy advisors' incentives. [Levit and Tsoy \(2021\)](#) show that proxy advisors can conceal their conflicts of interest by offering one-size-fits-all recommendations. Studies by [Ma and Xiong \(2021\)](#), [Malenko, Malenko, and Spatt \(2021\)](#), and [Matsusaka and Shu \(2021\)](#) explore the potential distorted incentives of proxy advisors in offering advice. Moreover, [Buechel et al. \(2022\)](#) investigate the conditions under which proxy advisors can improve corporate decisions. My results indicate that, despite the possibility of distorted incentives, the recommendations of proxy advisors are evolving and increasingly aligning with investors' prior votes. Thus, it remains an open question to what extent these recommendations are informative. [Matsusaka and Shu \(2022\)](#) employ the same method as in my study and find that subscribing to proxy advisors does not seem to significantly enhance the informativeness of votes.

Finally, this paper relates to the role of information intermediaries as coordination mechanisms. [Boot et al. \(2006\)](#) demonstrate that credit rating agencies coordinate investors' beliefs and function as information-processing entities that expedite information dissemination. The evidence in my paper of a correlation between recommendations and investors' prior votes can be interpreted as indicating that proxy advisors' recommendations may reflect in-

vestors' voices and preferences. Consistent with this finding, Iliev and Vitanova (2023) argue that controlling for proxy advisor recommendations when analyzing investors' preferences may be problematic, as these recommendations partially mirror investor preferences. The literature on feedback effects in financial markets (Bond et al., 2010; Edmans et al., 2015) is also relevant to my paper, which shows that future recommendations from proxy advisors are associated with investors' prior votes.

## 1 Method to Link Mutual Funds to Proxy Advisors

### 1.1 Data Sources

The initial sample consists of the complete mutual fund voting records spanning from 2007 to 2021. Since 2003, mutual funds have been required to disclose their full voting records annually on Form N-PX to the SEC every August. I collect these forms directly from the SEC's EDGAR website. Each N-PX form is subsequently linked to the ISS Voting Analytics database using its accession number, a unique identifier for EDGAR submissions. ISS Voting Analytics compiles a dataset of mutual fund votes from these N-PX forms, providing details on each proposal's final voting outcome and ISS's recommendations. Because accession numbers only appear in the Voting Analytics dataset starting from 2007, my sample is confined to the period between 2007 and 2021. Votes pertaining to procedural matters, such as meeting adjournments or auditor ratifications, and say-on-pay proposal frequencies are omitted. The final sample comprises 140 million votes from 23,264 mutual funds.

While the Voting Analytics database provides recommendations from ISS, those from Glass Lewis are not publicly available. I obtain Glass Lewis's recommendations for the period between 2008 and 2021 through a Public Records Law request directed to a large public pension fund. I request the name of the pension fund's proxy advisor, as well as the recommendations received from this advisor. I then match these recommendations with the main voting dataset using company names, meeting dates, and item numbers. The Public Records Law request enables me to locate Glass Lewis's recommendations for 3,255 companies, covering approximately 80% of the total assets for companies included in my main dataset. A screenshot of the response and a detailed description of the matching process are in Online Appendix.

I obtain mutual fund characteristics from the CRSP Mutual Fund Database. These characteristics are merged with the ISS voting dataset using CIK numbers, which are unique ten-digit identifiers assigned to filers by the SEC. I gather each mutual fund's CIK number from the header files of its N-PX forms. In line with previous studies, I conduct my

analyses at the fund-family level ([Bolton et al., 2020](#); [Iliev et al., 2021](#)). Votes that are not unanimous across funds within a family are omitted.<sup>1</sup> A fund family is defined as a unique fund management entity in the CRSP dataset, as ISS's definition of fund management has inconsistent fund identifiers across years and occasionally misrepresents a fund family ([Boone et al., 2020](#)). After this procedure, the aggregated dataset contains 17.5 million votes from 809 fund families, covering 455,433 proposals from 8,842 companies spanning 2007 to 2021. To reduce verbosity, I sometimes refer to a fund family simply as a fund in the remainder of the paper.

Each fund's statutory prospectus is collected from EDGAR to determine if it references contractual relationships with proxy advisors (see Section 1.3 for more details). Information about the mutual funds' portfolio holdings is obtained from the Thomson Reuters s12 database. I use the MFLINKS table from WRDS to connect the portfolio holding data with the main dataset. Finally, information on mutual funds' ideology preferences is provided by [Bolton et al. \(2020\)](#). More details about these ideology scores are in Section 3.3.

Online Appendix III provides summary statistics at both the fund-family and proposal levels. To categorize proposal types, I manually examine each proposal's general and issue descriptions. This step is necessary because ISS Voting Analytics contains inconsistencies in its classifications. Since ISS Voting Analytics does not include most information on proxy contests ([Brav et al., 2020](#)), the director elections in my analyses primarily focus on uncontested elections.

## 1.2 Inferring Voting Platforms From N-PX Forms

For each vote recorded on an N-PX form, a mutual fund must disclose the following information: (a) details about the annual meeting, such as the company name and meeting date; (b) a brief description of the proposal; and (c) the fund's voting decision. Until a 2022 SEC rule aimed at enhancing proxy voting disclosure, there were no requirements for mutual funds to use a common, machine-readable N-PX format or to provide standardized descriptions for each proposal (see [SEC Proposed Rule 33-11131](#)). Historically, filers have had discretion over how to tabulate, format, and characterize their votes. For example, Figure 1 illustrates that BlackRock characterized the fifth proposal of Apple Inc's 2019 annual meeting as "Disclose Board Diversity and Qualification," whereas John Hancock Financial described the same proposal as "A shareholder proposal entitled True Diversity Board Policy."

Mutual funds seldom prepare or file N-PX forms themselves. Instead, they typically

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<sup>1</sup>The findings of the paper remain qualitatively similar whether I use the majority vote of the family (as in [Bolton et al. \(2020\)](#)) or the fraction of the family's votes as independent variables.

delegate these tasks to their voting platform providers due to the vast number of votes they need to cast, manage, and report each year, often reaching into the thousands (see [SEC Proposed Rule 33-11131](#), pp. 80-81). Using data from state-level public records law requests sent to eleven public pension funds regarding the fees they pay to proxy advisors, I estimate that the average annual fee for proxy advice is \$69,080, with an additional charge of \$161,290 for using the proxy voting system.

There are three dominant voting platforms: ProxyExchange, Viewpoint, and ProxyEdge. All three provide vote reporting services that tabulate their customers' votes and prepare the required N-PX forms. Additionally, they offer optional services for vote disclosure, which interactively display their customers' votes on their respective websites. Two of these voting platforms are owned by proxy advisors: ISS owns ProxyExchange, while Glass Lewis owns Viewpoint. The third platform, ProxyEdge, is owned by Broadridge, a fintech firm that does not offer proxy advice.

Identifying the voting platform used by each mutual fund involves three steps. The first step is to identify common formats among all N-PX filings. I have discovered four frequently used format types, labeled A.1, A.2, B, and C. Figure 1 presents an example of each format. The second step is to compare the proposal descriptions in these four N-PX forms with those on the websites of the three voting platforms' Vote Disclosure Services (VDS). I observe that proposal descriptions in types A.1 and A.2 N-PX forms precisely match those on ISS's website. Proposal descriptions in type B forms match those on Glass Lewis's website, and type C forms match Broadridge's website. Online Appendix II provides the detailed procedure of how I link the four N-PX forms to their corresponding voting platforms. The final step involves using the column names of each N-PX form to determine its format type (A.1, A.2, B, C, or none of these) and thereby identify the voting platform used by each fund.

### 1.3 Inferring Contractual Relationships With Proxy Advisors From Prospectuses

The formats of N-PX forms enable me to identify the voting platforms used by mutual funds, thus establishing a link between the funds and their advisors. However, this approach has limitations in detecting cases where a fund subscribes to two proxy advisors but only uses one voting platform. To supplement this N-PX method, I rely on the statutory prospectuses of each mutual fund to determine whether it has contractual relationships with one or more proxy advisors. In 2004, the SEC issued two no-action letters which, according to certain interpretations, enable mutual funds to effectively fulfill their fiduciary duties by relying on independent proxy advisors ([Copland et al., 2018](#)). This incentivized mutual funds to disclose their contractual relationships with ISS and Glass Lewis.

Mutual funds are required to update their investors about important matters at least once a year through statutory prospectuses. I download these prospectuses (Form 485BPOS for annual updates and Form 485APOS for unscheduled updates) from the SEC Edgar website. By conducting keyword searches on these prospectuses with different variations of ISS, Glass Lewis, and Egan-Jones, I investigate whether each fund maintains a contractual relationship with various proxy advisors. Figure 2 provides four examples of statutory prospectuses. It can be observed that in 2021, T. Rowe Price maintained a contractual relationship with ISS, TIAA-CREF with Glass Lewis, and BNY Mellon with both proxy advisors.

#### 1.4 Comparing the Two Methods And Potential Measurement Errors

Panel A in Table 1 presents the number of mutual fund families using each of the three voting platforms (indicated in parentheses), along with their aggregated total net assets (shown outside the parentheses). Panel B displays similar information for mutual funds' contractual relationships with various proxy advisors, as inferred from their prospectuses. This panel categorizes funds based on whether they subscribe to a single proxy advisor or to multiple advisors. The two methods of connecting mutual funds to their proxy advisors are highly correlated. For instance, if a fund mentions a contractual relationship with ISS, there is a 68 percent likelihood of the fund using ISS's voting platform, compared to 26 percent if ISS is not mentioned in its prospectus. Similarly, if a fund mentions a contractual relationship with Glass Lewis, there is a 19 percent likelihood of the fund using Glass Lewis's voting platform, compared to 1 percent if Glass Lewis is not mentioned in its prospectus.

Both the N-PX and prospectus methods of identifying funds' proxy advisors are subject to (different) measurement errors. The N-PX method effectively reveals each mutual fund's voting platform, but it cannot discern funds that subscribe to both ISS and Glass Lewis for proxy advice and use only one platform for vote execution. This measurement error might be mitigated using the prospectus method. However, identifying proxy advisors from prospectuses depends on investor self-reporting. A fund might not always specify its proxy advisors, and these funds may have different characteristics than others.

Another potential source of measurement error arises from the lack of information regarding the level at which voting decisions are made. While votes are reported at the individual fund level according to the SEC rule, there is no consensus in the literature regarding the appropriate level of analysis. For example, [Bolton et al. \(2020\)](#) argue that "in practice votes are nearly always decided at the fund family level." Consequently, many studies, including the present one, conduct analyses at the fund family level ([Bolton et al., 2020; Iliev et al., 2021](#)). By contrast, other studies conduct analyses at the individual fund level ([Matvos](#)

and Ostrovsky, 2010; Iliev and Lowry, 2015). Further complicating matters is the occasional delegation of voting decisions to sub-advisors (Bubb and Catan, 2022). However, this delegation is not always the case. For example, Brav et al. (2020) observe that Vanguard Group retained voting authority for all of its equity funds prior to 2019.

## 1.5 Concentration in the Proxy Advisory Industry

Some practitioners and lawmakers express concern regarding the concentration within the proxy advisory industry. Li (2018) demonstrates that, in 2011, Glass Lewis had control over more than 40 percent of the market. Numerous studies cite a statistic indicating that ISS and Glass Lewis together dominate approximately 97 percent of the proxy advice market (Copland et al., 2018). However, ISS challenges this 97 percent figure, stating that they have not verified it and cannot confirm its accuracy.<sup>2</sup>

To estimate the market share of each proxy advisor, I aggregate the total net assets (TNAs) of each proxy advisor's mutual fund customers, as inferred from the funds' prospectuses. As of 2021, there are 144 mutual fund families in contractual relationships with ISS, collectively managing \$26.8 trillion in assets. Glass Lewis, in comparison, has 94 mutual fund customers, overseeing \$23.6 trillion in assets. The remaining 73 funds, managing \$5.1 trillion in assets, do not disclose a contractual relationship with a proxy advisor. These figures indicate that ISS holds roughly 48 percent of the U.S. mutual fund proxy advice market, whereas Glass Lewis accounts for about 42 percent.

These measures, however, involve double-counting of assets from funds that subscribe to multiple proxy advisors. Figure 3 shows that it has become increasingly common for funds to subscribe to multiple proxy advisors, rising from commanding less than 20 percent of all assets in 2007 to over 60 percent in 2021. To avoid this double counting, I apportion the assets of funds with multiple advisors equally among the advisors. The figures to the right in Figure 3 display the aggregated TNAs and the market shares of each proxy advisor using this method. We observe that, during the period from 2007 to 2021, Glass Lewis's market share increased from 11 percent to 37 percent, while ISS's market share dropped slightly from 52 percent to 49 percent.

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<sup>2</sup>See ISS's letter to the Senate Banking Committee, <https://www.issgovernance.com/file/duediligence/20180530-iss-letter-to-senate-banking-committee-members.pdf>.

## 2 Do Customers of Proxy Advisors Vote Differently?

### 2.1 Connection Between Proxy Advice Subscription and Vote Choice

Figure 4 illustrates the basic statistics of investors' voting patterns based on different proxy advisor recommendations. Panel A includes votes pooled across all mutual funds in my sample. The first bar indicates that when neither ISS nor Glass Lewis opposes management, the investors' support for management is very high, at approximately 98%. However, when ISS opposes management, as shown in the second bar, support for management drops to 52%, a decrease of 46 percentage points. By contrast, opposition from Glass Lewis is associated with a smaller decline – a 12 percentage point decrease in support for management, as depicted in the third bar.

The smaller decline in support when Glass Lewis opposes management might be due to two reasons. First, Glass Lewis has fewer subscribers, leading to a smaller audience for its recommendations. Second, it is plausible that Glass Lewis's recommendations have a less significant impact on its customers. To provide some insight into these two possibilities, I classify investor votes based on their proxy advisors, as inferred from their prospectuses. Panel B shows that customers of both ISS and Glass Lewis exhibit comparable degrees of support withholding when their respective proxy advisors issue negative recommendations. Therefore, the difference in reduction observed in Panel A likely stems from ISS's larger subscriber base. Moreover, when excluding fund families subscribing to multiple proxy advisors, the reduction in support becomes more pronounced, as demonstrated in Panel C.

Determining the actual impact of proxy advisors is challenging, as it is difficult for researchers to distinguish the advisors' impact from the possibility that both investors and proxy advisors arrive at similar conclusions due to their interpretation of the same information about the merits of proposals. Utilizing a regression discontinuity design (RDD) in an ISS voting policy, [Malenko and Shen \(2016\)](#) demonstrate that ISS swayed total votes by 25 percentage points on say-on-pay proposals during 2010-2011. This RDD method effectively controls for the underlying fundamentals of each proposal.

To introduce an alternative method of controlling the merits of each proposal, I compare the voting behavior of a specific proxy advisor's customers with that of non-customers on identical proposals. This approach effectively controls for any proposal-specific factors as it involves comparing votes on the same proposals; the only difference is that one group of investors has access to the proxy advisor's recommendations, while the other does not. To

carry out the analysis, I employ the following equation:

$$\text{Agree with PA}_{ip} = \beta_1 \cdot \text{PA Customer}_{it} + \gamma' \cdot \mathbf{Z} + a_p + \varepsilon_{ipt} \quad (1)$$

Each observation represents a fund's vote on a proposal, where  $i$  denotes the fund family and  $p$  denotes the proposal. The dependent variable, "Agree with PA<sub>ip</sub>", is a dummy variable that equals one if the vote is in the same direction as the recommendation of a proxy advisor (ISS or Glass Lewis). As mentioned earlier, votes are aggregated at the fund family level, and those not unanimous within a family are excluded. In the regression, I control for fund characteristics. Importantly, the regression also includes proposal fixed effects to control for unobserved proposal-specific factors.

Panel A in Table 2 presents the results of the OLS regressions using the full sample, while Panel B excludes investors who subscribe to multiple proxy advisors. When ISS or Glass Lewis endorses management, their customers exhibit a two to three percentage point higher likelihood of supporting management compared to other investors. Considering these proposals are mostly non-controversial – the baseline agreement between votes and recommendations already exceeds 95 percent – a two-percentage-point increase in support represents a meaningful difference in the voting patterns of proxy advisors' customers compared to those of other investors.

For contentious proposals where the proxy advisor opposes management, ISS's opposition is associated with a 26 or 19 percentage point decrease in support for management among its customers, depending on whether the customer subscribes exclusively to ISS or to multiple advisors. Similarly, Glass Lewis's opposition to management is associated with a 22 or 11 percentage point reduction in support for the management by its customers. It is interesting to observe that the coefficients in Panel B are larger than those in Panel A, especially for contentious proposals. A possible explanation is that investors subscribing to multiple proxy advisors consider the recommendations of both advisors when making their voting decisions.

I next analyze investors' votes separately for different proposal types. The results in Table 3 show that when ISS or Glass Lewis opposes the election of a director, their customers are 25 and 17 percentage points more likely, respectively, to withhold their votes for that director, compared to other investors. In columns 2-5, we notice similar patterns for both management-sponsored proposals (such as say-on-pay and governance proposals) and shareholder-sponsored proposals. In Online Appendix IV, I further categorize these proposal types, illustrating the differences in voting patterns between proxy advisor customers and non-customers across the top 20 most common proposal types.

It should be noted that using Equation 1 to estimate the influence of proxy advisors, while controlling for each proposal’s fundamentals, may be subject to selection bias. This is because funds choosing different proxy advisors could have different characteristics. The analysis of funds that change advisors, to be discussed in Section 2.3, can address funds’ time-invariant attributes. Nevertheless, this approach does not fully account for a fund’s contemporaneous preferences that may prompt an advisor switch. Despite these limitations, a comparison of my estimates with those in [Malenko and Shen \(2016\)](#) suggests that my findings are not likely to be primarily driven by selection bias.

## 2.2 Connection Between The Usage of Voting Platforms and Vote Choice

By examining the interplay between mutual funds’ voting platforms and their contractual relationships with proxy advisors, I can further scrutinize the potential reasons why customers of proxy advisors vote differently from other investors. In this section, I will explore whether using a proxy advisor’s voting platform is associated with how each fund votes, in addition to the source of proxy advice itself. This inquiry is important because many observers have raised concerns about investors’ dependence on their voting platforms’ automatic voting execution feature. Such a feature could potentially lead investors to vote mechanically, in line with the pre-populated recommendations. In 2021, the SEC contemplated banning the practice of automatic voting execution in instances of contested proxy matters ([Rose, 2021](#)).

The results in Table 4 show that among investors subscribing to both ISS and Glass Lewis for proxy advice, those using ISS’s voting system are 13 or 12 percentage points more likely to vote in line with ISS’s recommendations when the two advisors disagree, depending on whether the proposal is sponsored by management or a shareholder. By contrast, investors using Glass Lewis’s voting platform are 19 or 12 percentage points more likely to vote in line with Glass Lewis’s recommendations. These observations are noteworthy because, in theory, the choice of voting platform should not relate to how investors vote. A possible explanation is that the pre-population of recommendations on the proxy advisors’ voting platforms could play a role in investors’ reliance on their recommendations.

## 2.3 Voting Behavior of Funds That Change Voting Platforms

It is interesting to examine the voting patterns of investors that have changed their voting platforms. In my sample, 25 fund families have switched from ISS’s voting platform to Glass Lewis’s, and 17 have switched from Glass Lewis’s to ISS’s. Consider the following

regression, where each observation represents a fund-year:

$$\% \text{Agree with PA}_{i,t} = \beta_0 + \beta_1 \cdot \text{Switch}_i \cdot \text{Post}_{i,t} + \gamma' \cdot \mathbf{Z} + a_i + a_t + \varepsilon_{it} \quad (2)$$

In this equation, the dependent variable “% Agree with PA<sub>i,t</sub>” represents the proportion of votes cast by fund *i* in year *t* that are in the same direction as the proxy advisor’s recommendations. The independent variable “Switch<sub>i</sub>” is a dummy variable indicating whether the fund has changed its voting platform, and “Post<sub>i,t</sub>” is a dummy variable denoting whether the year is after the switch. Fund families that have changed voting platforms multiple times are excluded. Similar to Equation 1, we can categorize proposals based on whether the proxy advisor supports or opposes management. Since the baseline support by investors for the proposals where the proxy advisor supports management is already over 95 percent, the analysis in this section focuses on proposals where the proxy advisor recommends voting against management.

The results in Panel A of Table 5 indicate that when a fund family switches from using ISS’s voting system to that of Glass Lewis, there is a 20 percentage point reduction in the proportion of its votes that coincide with the recommendations of ISS (the former advisor) for management proposals, and a 14 percentage point decrease for shareholder proposals. Conversely, the likelihood of voting in agreement with Glass Lewis’s (the new advisor) recommendations increases by 26 percentage points for management proposals and by 12 percentage points for shareholder proposals. The results in Panel B reveal a comparable pattern for investors transitioning their voting platforms from Glass Lewis to ISS.

Figure 5 illustrates the evolution of voting patterns for funds that have switched voting platforms, specifically from ISS to Glass Lewis (shown on the left) and from Glass Lewis to ISS (shown on the right). Panel A displays the coefficients using an event study methodology, including all fund families in the sample. This panel indicates that before the switch, there is no significant difference in vote agreement with the new advisor between those who switched and those who did not. The increase in agreement only becomes apparent post-switch. Panel B displays the proportion of the switchers’ votes that coincide with the new proxy advisor for each year before and after the switch. The results in both panels suggest that the change in voting patterns occurs only after the switch.

It is worth noting that changing contemporaneous preferences can potentially cause both the switch and the ensuing change in voting behavior. Since the decision to switch is endogenous, these tests do not aim to establish causality.

## 2.4 Prevalence of Robo-Voting

The issue of investors indiscriminately following proxy advisors, potentially through automatic vote execution, has raised concerns among many industry participants and regulators. A survey of 100 issuers reveals that approximately 20 percent of votes are executed within three business days following the release of ISS recommendations ([Placenti, 2018](#)). Accurately measuring the extent to which investors automatically execute votes is vital to the regulatory discussion surrounding the proxy advisory industry. This debate culminated in a now-rescinded SEC rule that would have permitted issuers to respond to proxy advice before recommendations were sent to investors. However, the effectiveness of this rule could possibly be undermined if investors adhered strictly to their proxy advisors' recommendations, ignoring companies' responses. When soliciting comments on its preliminary proposed rule, the SEC raised the following question: "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?" ([SEC Proposed Rule 34-87457](#)).

I characterize an investor as an ISS robo-voter if it meets two criteria: (i) over 99.9% of its votes are consistent with ISS recommendations, and (ii) over 99.9% of its votes on proposals where ISS opposes management are also consistent with ISS recommendations. Given that most proposals are non-contentious, applying the 99.9% threshold to all proposals (the first criterion) might be too lenient for defining a robo-voter. Instead, the second criterion ensures that a robo-voter concurs with management in fewer than 0.1% of contentious votes, making it unlikely that the robo-voting indicator simply reflects a coincidental agreement between the investors and ISS. I define Glass Lewis and management robo-voters in a similar manner. Additionally, I require that the fund must have voted on more than 100 proposals, which reduces the likelihood of mischaracterization due to a small number of votes.

Table 6 presents the proportion of mutual funds engaging in robo-voting. We observe that the prevalence of robo-voting among ISS and Glass Lewis subscribers has increased between 2007 and 2021. During this period, the proportion of robo-voters among investors who subscribe to ISS has risen from 7 percent to 23 percent. During the same period, the proportion of Glass Lewis subscribers engaging in robo-voting has increased from 0 percent to 9 percent. In the same table, we also observe that investors subscribing to both proxy advisors are considerably less likely to engage in robo-voting.

Investors can also vote in lockstep with management's recommendations, particularly among those who do not subscribe to any proxy advice. Table 6 shows that robo-voting in

line with management is also common: in 2021, 11 percent of investors who do not subscribe to proxy advice engaged in robo-voting with management.

Figure 6 illustrates the trend in robo-voting practices. Panel A depicts the proportion of ISS and Glass Lewis customers engaging in robo-voting from 2007 to 2021, revealing an increase in this trend. This rising popularity may be attributed to two factors. First, the mutual fund industry has seen many new entrants, and these newer, smaller funds tend to be more inclined to robo-vote. Second, the prevalence of robo-voting may be extensive, encompassing both new and established funds. To investigate these possibilities, I limit the sample to fund families present in the dataset before 2010. In Panel B, we again observe a consistent increase in the popularity of robo-voting among these established funds.

Panel C of Figure 6 illustrates the proportion of assets managed by ISS and Glass Lewis customers that engage in robo-voting. Again, we observe a rising trend towards robo-voting. This figure also reveals that the fraction of assets controlled by robo-voters is considerably smaller than the fraction of investors who robo-vote. This is because robo-voters typically manage fewer assets. Nevertheless, within my sample years, I can identify over 100 director elections in which ISS robo-voters collectively hold over 5 percent of the company's outstanding shares. In 66 elections, ISS robo-voters are actually pivotal, as the election outcomes would be reversed if the votes of the robo-voters were excluded.

So who are these robo-voters? In Panel A of Table 7, I compare the characteristics of robo-voters with those of other investors that do not engage in robo-voting. The results indicate that robo-voters are typically smaller in size, hold a larger proportion of assets in index products, and are less likely to offer ESG funds. Panel B presents the results of OLS regressions. It shows that for fund families that are ISS customers, a ten percentage point increase in assets held in index funds is associated with a 0.6 percentage point higher likelihood of the family engaging in robo-voting. A similar pattern is observed among investors without proxy advisors who tend to robo-vote with management. These findings are in line with the arguments presented by [Lund \(2017\)](#) and [Heath et al. \(2021\)](#). They argue that index funds lack incentives to ensure companies are well-run, as they do not aim to outperform the index. The regression results are also consistent with the argument by [Appel et al. \(2016\)](#), who argue that passive investors, like BlackRock, can still shape corporate governance through their sizable voting blocs. My results indicate that doubling a fund family's asset size is associated with a three percentage point decrease in the likelihood of being an ISS robo-voter and a one percentage point decrease in being a management robo-voter.

Another interesting observation is that among investors who subscribe to ISS's advice,

there is an 11 percentage point increase in the likelihood of robo-voting if they also utilize ISS's voting system. Similarly, among Glass Lewis's subscribers, there is a three percentage point increase in the likelihood of robo-voting if they employ its voting system. This observation is consistent with the findings in Section 2.2, further suggesting that the use of a specific voting system is related to how investors vote.

### 3 How Do Proxy Advisors Develop Recommendations?

[Malenko and Shen \(2016\)](#) show that ISS recommendations have significant causal impacts on investors' votes regarding say-on-pay proposals. My findings on these proposals corroborate theirs. However, the process by which proxy advisors formulate their recommendations remains unclear. This issue is compounded by the observation that investors exhibit heterogeneous preferences ([Hart and Zingales, 2017](#)), making it unclear which of these preferences proxy advisors prioritize.

Every year, before the proxy season, ISS conducts surveys among investors as part of its voting policy development process. In the 2022 survey, for example, ISS received responses from 205 institutional investors. Based on this feedback, ISS concluded that a majority of investors view inadequate disclosure on climate-related oversight by a major contributor to climate change as a significant governance failure.<sup>3</sup> By contrast, Glass Lewis does not conduct formal surveys. However, they claim that their policies are "formulated via a bottoms-up approach that involves discussions with a wide range of market participants, including investor clients, corporate issuers, academics, corporate directors and other subject matter experts, among others" ([Larcker et al., 2013](#)).

It is plausible, based on these anecdotes, that proxy advisor recommendations are associated with investors' preferences. I will explore this hypothesis in this section.

#### 3.1 When Do Proxy Advisors Change Recommendations?

I employ the following equation to test if there is a greater likelihood of proxy advisors changing their recommendations when investors have previously shown significant disagreement with these recommendations.:

$$|\text{Advice}_{p,t} - \text{Advice}_{p,t-s}| = \beta_1 \cdot \text{Investor Disagreement}_{p,t-s} + \varepsilon_{p,t} \quad (3)$$

The dependent variable is a dummy variable that equals one if the proxy advisor supports/opposes the proposal in the current year (year  $t$ ) but opposed/supported the same

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<sup>3</sup>See the 2022 ISS Global Benchmark Policy Survey. <https://www.issgovernance.com/file/policy/2022/2022-ISS-Benchmark-Survey-Summary.pdf>.

company's same proposal when it last appeared (year  $t - s$ ).<sup>4</sup> The independent variable represents the proportion of mutual funds' votes cast in a direction that is different from the proxy advisor's recommendation in year  $t - s$ . To connect proposals (denoted  $p$ ) within the same company, I use directors' names for director elections and manually categorize proposal types for other issues by examining their general and issue-specific descriptions.

Columns 1-4 in Table 8 present the OLS coefficients for Equation 3, categorizing proposals by director elections, say-on-pay proposals, other management proposals, and shareholder proposals. The regressions include firm  $\times$  issue fixed effects to control for firm and issue characteristics. The results indicate that a ten percentage point increase in disagreement between mutual fund votes and the ISS recommendations regarding a director (with an unconditional mean of 8.5 percent) is associated with a 4.8 percentage point increased likelihood of the proxy advisor changing its recommendation when the same director reappears on the company's ballot (with an unconditional mean of 8.7 percent). Similarly, for Glass Lewis, a ten percentage point increase in disagreement between mutual fund votes and its recommendations (with an unconditional mean of 10.4 percent) corresponds to a 4.6 percentage point increased likelihood of a change in recommendations (with an unconditional mean of 7.5 percent). This pattern is also evident for say-on-pay proposals.

### 3.2 When Do Proxy Advisors Change Guidelines?

There are two non-mutually exclusive explanations for why proxy advisors exhibit a greater tendency to change specific recommendations when there is higher investor disagreement. First, investors might possess unique information that proxy advisors learn upon observing this disagreement. For instance, if many investors deviate from a proxy advisor's recommendation in a specific director's election, the advisors may realize an error in their initial assessment. Second, proxy advisors may aim to align their voting policies with investor preferences, as evidenced by ISS's annual surveys. Typically, this alignment occurs at the guideline or broad issue level, such as with the increased acceptance of climate proposals, rather than at the individual firm level.

To provide further insight into the second explanation, consider the following regression, where each observation represents a particular issue (denoted  $j$ ) in a given year:

$$|\% \text{ PA For}_{j,t} - \% \text{ PA For}_{j,t-1}| = \beta_1 \cdot \text{Investor Disagreement}_{j,t-1} + \varepsilon_{j,t} \quad (4)$$

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<sup>4</sup>Both proxy advisors have frequently changed their positions on numerous issues, except for board declassification and the majority vote requirement for board elections, which both proxy advisors almost always support. Online Appendix V presents the frequency at which ISS or Glass Lewis changes its recommendations on various issues.

The dependent variable denotes the absolute value of the change in the fraction of proposals related to issue  $j$  that the proxy advisor recommends voting for. A larger value indicates a significant shift in the proxy advisor's stance on this issue. The independent variable denotes the proportion of mutual funds' votes cast contrary to the proxy advisor's previous recommendation, aggregated at the issue level in this case. Aggregating votes at the issue level is not meaningful for director elections and say-on-pay proposals, so they are excluded from the analysis. The sample includes 16 governance issues and 9 environmental and social (E&S) issues, spanning from 2007 to 2021.

The results of the regressions are presented in Columns 5 and 6 of Table 8. We observe that a ten percentage point increase in disagreement on a governance issue corresponds to a 1.8 percentage point change in the proportion of proposals supported by both proxy advisors. Regarding environmental and social issues, a ten percentage point increase in disagreement is associated with a 2.2 percentage point shift in Glass Lewis's support.

Another interesting finding, as shown in Table 9, is the higher sensitivity of the frequency of recommendation changes to disagreements from each proxy advisor's own customers. This pattern is evident at both the specific proposal level (Column 1) and the broader issue level (Column 2). A possible explanation is that proxy advisors' annual surveys may be more readily accessible to their customers.

### 3.3 Two Possible Explanations: Information Acquisition & Preference Alignment

In the preceding section, we discussed two non-mutually exclusive hypotheses that could potentially explain the results in Table 8: information acquisition and preference alignment. To further investigate these hypotheses, this section examines the types of investors whose dissent is more closely associated with changes in proxy advisor recommendations. Specifically, if the change in recommendations is part of the proxy advisors' information-acquisition process, we would expect this change to correlate more with dissent from better-informed investors. Conversely, if proxy advisors aim to align their voting policies with investors' preferences, the change in recommendations would likely be more sensitive to dissent from investors with stronger voting preferences ([Matsusaka and Shu, 2021](#)). In both cases, proxy advisors would likely give more consideration to larger investors. Therefore, when examining the two hypotheses, it is important to control for the size of the investors.

The results in Column 1 of Table 10 indicate that changes in recommendations by ISS and Glass Lewis indeed correlate more strongly with dissent from larger investors. Specifically, a ten percentage point increase in disagreement from larger investors – defined as those whose total net assets exceed the median for all fund families voting on the same

proposal – corresponds to a 3.8 or 4.1 percentage point increased likelihood of ISS or Glass Lewis changing their recommendations, respectively. By contrast, a similar ten percentage point increase in disagreement from smaller investors is associated with only a 1.0 and 0.5 percentage point greater probability of these proxy advisors changing recommendations.

To examine the information channel hypothesis, I categorize investors into two groups: blockholders and non-blockholders. [Edmans \(2009\)](#) shows that blockholders are highly motivated to acquire information about firm fundamentals. I define a fund family as a blockholder if it owns more than 5 percent of a company's outstanding stock. On average, blockholders manage assets worth \$3.0 billion, significantly exceeding the \$0.2 billion managed by non-blockholders. To control for fund size, I match each vote from a blockholder with another vote on the same proposal by a non-blockholder, selecting the one with the closest total net assets. Additionally, I limit the difference in size between the two matched votes to be smaller than \$0.05 billion.

The results in Column 2 of Table 10 indicate that the changes in recommendations by both proxy advisors are approximately three times more correlated with disagreement from blockholders than from non-blockholders, even after accounting for the difference in their asset sizes. For instance, a ten percentage point increase in disagreement from blockholders is associated with a 3.2 percentage point increase in the likelihood of ISS changing its recommendation. Conversely, an equivalent level of disagreement from non-blockholders is correlated with only a 1.0 percentage point increase in probability.

The evidence from blockholders suggests that it is plausible proxy advisors learn from investors' past dissents, particularly from those who are better informed. Regarding the alternative explanation that proxy advisors aim to align their voting policies with investor preferences, analyses at the guideline level (Section 3.2) support this hypothesis. This is because investors' dissent at the broad issue level mainly reflects differing stances on the topics, rather than possessing superior information about specific companies. To further explore this explanation, I categorize investors based on whether they exhibit strong or weak voting preferences. [Matsusaka and Shu \(2021\)](#) argue that proxy advisors have strong incentives to cater to investors with polarized preferences because these investors place a higher emphasis on the ideologies of proxy advisors.

I employ a measure of investor ideology developed by [Bolton et al. \(2020\)](#) to assess whether each investor possesses a polarizing preference. This measure, W-NOMINATE, was originally conceived by [Poole and Rosenthal \(1985\)](#) to map legislators in a spatial diagram based on their congressional roll call votes. The method requires that each Congress member has a single-peaked preference, with the ideal point at its peak. Adapting this ap-

proach, [Bolton et al. \(2020\)](#) use investors' votes to map institutional investors on a left-right spectrum. On this spectrum, far-left investors, like Domini Social Investments, are identified as socially responsible, whereas far-right investors, such as Needham Investment, are identified as primarily money-conscious.

I categorize investors into two groups: those with W-NOMINATE scores below the 25th percentile or above the 75th percentile among fund families in the sample, and those whose scores fall within the middle 50 percent. To account for fund size, I match a vote from an investor with a strong voting preference to a vote from a centrist investor with the nearest total net assets. The results in Column 3 of Table 10 indicate that changes in recommendations by both proxy advisors are more closely related to disagreement from investors with strong voting preferences. These results provide suggestive evidence that the preference-catering hypothesis is also possible.

## 4 Conclusion

The value of the proxy advisory industry is a subject of ongoing debate, with many important questions unanswered due to the limited information connecting investors to their proxy advisors. The primary innovation of this paper is to use regulatory filings to identify the voting system of each mutual fund and its subscription to proxy advisors. I then utilize this information to characterize features of the proxy advisory industry.

While previous papers have examined the impact of proxy advice, the source of this impact is largely unexplored. By examining the interplay between each investor's voting platform and its contractual agreements with proxy advisors, this paper provides additional insights into how investors vote their shares. For instance, I present evidence indicating that the use of proxy advisors' voting platforms is associated with investors' agreement with their proxy advisors, suggesting that the convenience provided by these platforms may contribute to such alignment. In extreme cases, investors may vote in lockstep with their proxy advisors' recommendations. I find that this practice of robo-voting is increasingly prevalent, particularly among investors with smaller assets and those offering index funds.

The paper also explores a potential channel from investor votes to proxy advisor recommendations. Anecdotally, ISS conducts annual surveys to gauge evolving investor preferences. My analysis indicates that proxy advisors are more likely to change their advisory stance when investors have shown greater disagreement with their prior recommendations. This observation underscores the importance of examining the interplay between proxy advisor recommendations and shareholder voting. For instance, [Iliev and Vitanova \(2023\)](#)

argue that controlling for proxy advisor recommendations in vote regressions may result in biased estimates of investor preferences, as these recommendations may have already incorporated such preferences.

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**Table 1: Customers of Proxy Advisors**

This table presents the number of mutual fund customers associated with different proxy advisors and their aggregated total net assets. Panel A uses each fund's N-PX filings to infer its voting platforms among ISS ProxyExchange, Glass Lewis Viewpoint, and Broadridge ProxyEdge. The table displays the number of mutual fund families using each of the three voting platforms (indicated in parentheses), along with their aggregated total net assets (shown outside the parentheses). Panel B classifies mutual fund families based on their contractual relationships with ISS, Glass Lewis, or Egan-Jones, as detailed in their statutory prospectuses. It categorizes funds according to whether they subscribe to a single proxy advisor or to multiple advisors.

**(A) Voting Platforms Inferred From N-PX Formats**

	ISS platform	Glass Lewis platform	Broadridge platform	Others
2007	6,467 (114)	1,313 (3)	369 (39)	1,400 (12)
2008	5,111 (116)	838 (3)	263 (36)	1,213 (11)
2009	6,730 (124)	1,048 (5)	361 (36)	1,652 (22)
2010	6,577 (117)	1,478 (15)	440 (37)	1,983 (16)
2011	6,062 (104)	1,390 (18)	458 (54)	2,088 (18)
2012	7,252 (99)	1,561 (18)	548 (57)	2,227 (17)
2013	7,977 (92)	1,911 (21)	1,177 (58)	3,017 (15)
2014	9,466 (110)	2,027 (21)	1,367 (70)	3,556 (12)
2015	9,396 (128)	2,217 (30)	1,157 (74)	4,041 (134)
2016	10,041 (129)	2,221 (27)	1,212 (74)	4,492 (114)
2017	10,823 (133)	3,484 (25)	1,326 (75)	5,619 (85)
2018	10,838 (127)	2,558 (20)	1,281 (71)	5,585 (88)
2019	15,856 (128)	1,190 (18)	1,563 (77)	6,606 (87)
2020	24,914 (124)	1,747 (16)	1,818 (78)	678 (68)
2021	29,147 (119)	1,100 (15)	1,999 (73)	597 (40)

**(B) Contractual Relationships With Proxy Advisors Inferred From Prospectuses**

	ISS only	Glass Lewis only	Egan-Jones only	Multiple advisors	None
2007	4,021 (78)	181 (4)	0 (0)	1,788 (27)	3,477 (55)
2008	3,117 (80)	369 (6)	1 (1)	1,464 (26)	2,467 (51)
2009	4,411 (71)	495 (11)	0 (0)	1,589 (34)	3,295 (69)
2010	4,057 (58)	845 (15)	0 (0)	3,227 (46)	2,131 (65)
2011	2,242 (51)	218 (11)	0 (0)	3,719 (62)	3,587 (68)
2012	4,515 (58)	416 (12)	4 (1)	4,519 (56)	2,115 (60)
2013	5,605 (55)	877 (17)	44 (5)	5,123 (43)	2,398 (63)
2014	6,835 (67)	833 (21)	40 (4)	6,049 (57)	2,437 (58)
2015	6,557 (80)	989 (38)	39 (4)	7,975 (88)	1,197 (152)
2016	6,806 (88)	1,046 (38)	41 (4)	8,812 (78)	1,164 (131)
2017	7,761 (81)	2,047 (36)	47 (2)	10,115 (77)	1,243 (114)
2018	8,947 (76)	732 (29)	44 (5)	9,441 (83)	991 (105)
2019	3,767 (84)	580 (26)	56 (6)	17,120 (71)	3,567 (118)
2020	3,495 (83)	583 (22)	56 (5)	19,950 (79)	4,367 (89)
2021	4,028 (74)	843 (24)	64 (5)	22,790 (71)	5,017 (68)

**Table 2: Relationship Between Proxy Advice Subscription and Vote Choice**

Each column presents the OLS regression results for Equation 1, with each observation representing a fund vote. Panel A includes votes from all fund families, while Panel B includes votes from fund families with at most one proxy advisor. Proposals are categorized based on whether ISS or Glass Lewis supports the management recommendation. In both panels, the dependent variables in Columns 1 and 2 (Columns 3 and 4) are dummy variables that equal one if the fund vote aligns with the recommendation of ISS (Glass Lewis). The independent variables are dummy variables that equal one if the fund family is a customer of ISS or Glass Lewis, as inferred from its prospectuses. All regressions include proposal fixed effects and controls for fund family characteristics, as detailed in Online Appendix III.A. Standard errors are clustered at the fund family-year level. Significance levels are indicated by asterisks: \*, \*\*, and \*\*\* correspond to significance levels of 10%, 5%, and 1%, respectively.

**(A) All Fund Families**

	Dependent Variable = 1 if the Vote Is Aligned With ISS Recommendation		Dependent Variable = 1 if the Vote Is Aligned With GL Recommendation	
	ISS Supports Management (1)	ISS Opposes Management (2)	GL Supports Management (3)	GL Opposes Management (4)
=1 if prospectus mentions ISS	0.02*** (0.00)	0.19*** (0.02)		
=1 if prospectus mentions GL			0.02*** (0.00)	0.11*** (0.01)
Fund Characteristics Controls	Yes	Yes	Yes	Yes
Proposal FE	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.09	0.14	0.28	0.37
Observations	15,586,761	1,808,824	8,975,022	977,273

**(B) Fund Families With At Most One Proxy Advisor**

	Dependent Variable = 1 if the Vote Is Aligned With ISS Recommendation		Dependent Variable = 1 if the Vote Is Aligned With GL Recommendation	
	ISS Supports Management (1)	ISS Opposes Management (2)	GL Supports Management (3)	GL Opposes Management (4)
=1 if prospectus mentions ISS	0.02*** (0.00)	0.26*** (0.02)		
=1 if prospectus mentions GL			0.03*** (0.00)	0.22*** (0.03)
Fund Characteristics Controls	Yes	Yes	Yes	Yes
Proposal FE	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.09	0.18	0.29	0.40
Observations	9,108,247	1,093,970	5,238,634	616,831

**Table 3:** Director Elections, Say-on-pay, and Shareholder Proposals

Each column presents the OLS regression results for Equation 1, with each observation representing a fund vote. Proposals are first categorized based on their sponsors (either management or shareholders) and then classified by their types: uncontested director elections, say-on-pay, governance, and environmental and social (E&S) proposals. In Panel A (Panel B), the dependent variables are dummy variables that equal one if the fund vote aligns with the recommendation of ISS (Glass Lewis). The independent variables are dummy variables that equal one if the fund family is a customer of ISS or Glass Lewis, as inferred from its prospectuses. Panel A includes proposals that ISS opposes while Glass Lewis supports, and Panel B includes proposals that Glass Lewis opposes while ISS supports. All regressions include proposal fixed effects and controls for characteristics of fund families, as detailed in Online Appendix III.A. Standard errors are clustered at the fund family-year level. Significance levels are indicated by asterisks: \*, \*\*, and \*\*\* correspond to significance levels of 10%, 5%, and 1%, respectively.

### (A) Vote Alignment with ISS Recommendations

	Sample: proposals that ISS opposes but Glass Lewis supports				
	Dependent variable = 1 if the vote is aligned with ISS recommendation				
	Management Proposals			Shareholder Proposals	
	Director Elections	Say-on-Pay	Governance	Governance	E&S
	(1)	(2)	(3)	(4)	(5)
=1 if prospectus mentions ISS	0.25*** (0.02)	0.32*** (0.02)	0.33*** (0.03)	0.13*** (0.02)	0.09*** (0.02)
Fund Characteristics Controls	Yes	Yes	Yes	Yes	Yes
Proposal FE	Yes	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.09	0.10	0.09	0.05	0.14
Observations	279,567	38,107	2,293	18,873	7,680

### (A) Vote Alignment with Glass Lewis Recommendations

	Sample: proposals that Glass Lewis opposes but ISS supports				
	Dependent variable = 1 if the vote is aligned with Glass Lewis recommendation				
	Management Proposals			Shareholder Proposals	
	Director Elections	Say-on-Pay	Governance	Governance	E&S
	(1)	(2)	(3)	(4)	(5)
=1 if prospectus mentions GL	0.17*** (0.02)	0.25*** (0.02)	0.21*** (0.02)	0.27*** (0.02)	0.25*** (0.02)
Fund Characteristics Controls	Yes	Yes	Yes	Yes	Yes
Proposal FE	Yes	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.09	0.11	0.12	0.10	0.10
Observations	422,426	75,960	2,865	28,612	33,555

**Table 4:** Relationship Between Voting Platforms and Vote Choice

Each column represents an OLS regression, with each observation corresponding to a fund vote. The sample consists of votes from fund families that mention both ISS and Glass Lewis in their prospectuses. Proposals are categorized based on their sponsors (either management or shareholders), and only those for which ISS and Glass Lewis provide differing recommendations are included. The dependent variable is a dummy variable that equals one if the vote is cast in the same direction as ISS's recommendation. The independent variables are dummy variables that equal one if the fund family utilizes either ISS's or Glass Lewis's voting system, as identified through the format of its N-PX filings. All columns include proposal fixed effects and controls for fund-family characteristics, as detailed in Online Appendix III.A. Standard errors are clustered at the fund family-year level. Statistical significance is denoted by \*, \*\*, and \*\*\* at the 10%, 5%, and 1% levels, respectively.

	Dependent variable = 1 if the vote is in the same direction as ISS recommendation	
	Management Proposals	Shareholder Proposals
	(1)	(2)
=1 if use ISS's voting system	0.13*** (0.02)	0.12*** (0.03)
=1 if use GL's voting system	-0.19*** (0.04)	-0.12*** (0.03)
Fund Characteristics Controls	Yes	Yes
Proposal FE	Yes	Yes
Adjusted $R^2$	0.22	0.17
Observations	328,453	51,318

**Table 5: Funds' Voting Patterns After Switching Voting Platforms**

This table presents OLS regression results for Equation 2, with each observation representing a fund family-year. In each column, the dependent variable is the proportion of votes by the fund family in the year that align with the recommendations of a proxy advisor when the advisor opposes management. In Panel A, the independent variable "Switch" is a dummy variable indicating whether the fund has changed its voting platform from ISS to Glass Lewis, while "Post" is a dummy variable indicating whether the year is after the switch. Panel B is constructed similarly, for funds switching from Glass Lewis to ISS. Proposals are categorized based on their sponsors (either management or shareholders). All columns include year and fund-family fixed effects, and control for fund-family characteristics as detailed in Online Appendix III.A. Standard errors are clustered at the fund-family level. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**(A) Switch = 1 If The Fund Has Switched Voting System From ISS's to Glass Lewis's**

	Management Proposals		Shareholder Proposals	
	(1)	(2)	(3)	(4)
	%Agree with ISS	%Agree with GL	%Agree with ISS	%Agree with GL
Switch × Post	-0.20** (0.09)	0.26*** (0.06)	-0.14** (0.07)	0.12** (0.06)
Fund Characteristics Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Observations	3,171	2,891	3,048	2,852

**(B) Switch = 1 If The Fund Has Switched Voting System From Glass Lewis's to ISS's**

	Management Proposals		Shareholder Proposals	
	(1)	(2)	(3)	(4)
	%Agree with ISS	%Agree with GL	%Agree with ISS	%Agree with GL
Switch × Post	0.18** (0.08)	-0.15** (0.07)	0.16** (0.08)	-0.07* (0.04)
Fund Characteristics Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Fund Family FE	Yes	Yes	Yes	Yes
Observations	3,171	2,891	3,048	2,852

**Table 6: Prevalence of Robo-voting**

This table displays the prevalence of fund families that engage in robo-voting with the recommendations of ISS, Glass Lewis, and management in 2007 and 2021. I characterize an investor as an ISS robo-voter if it meets two criteria: (i) over 99.9% of its votes align with ISS recommendations, and (ii) over 99.9% of its votes on proposals where ISS opposes management also align with ISS recommendations. Glass Lewis and management robo-voters are defined similarly. Fund families are categorized in each row based on their proxy advisors. A fund is considered a proxy advice customer if its N-PX format or prospectus identifies it as such. The first three columns display the proportion of proxy advisor customers that are identified as ISS, Glass Lewis, or management robo-voters. The last column displays the combined total net assets of the robo-voters.

	% of investors that robo-vote with ISS	% of investors that robo-vote with Glass Lewis	% of investors that robo-vote with management	Total net assets of robo-voters (billion dollars)
<b><u>Year: 2007</u></b>				
Full sample	4%	0%	1%	18.6
Subscribing to ISS only	7%	0%	0%	16.1
Subscribing to Glass Lewis only	0%	0%	0%	0
Subscribing to both	0%	0%	0%	0
Subscribing to neither	0%	0%	7%	2.5
<b><u>Year: 2021</u></b>				
Full sample	11%	1%	3%	427.6
Subscribing to ISS only	23%	0%	2%	262.6
Subscribing to Glass Lewis only	0%	9%	0%	114.8
Subscribing to both	6%	1%	0%	37.3
Subscribing to neither	0%	0%	11%	12.9

**Table 7: Characteristics of Robo-voters**

Panel A compares the characteristics of robo-voters with those of other investors who do not engage in robo-voting. The definitions of these characteristics are detailed in Online Appendix III.A. The table's last three columns display the fractions of robo-voters using three different voting systems. Each row categorizes investors as either ISS robo-voters, Glass Lewis robo-voters, management robo-voters, or non-robo-voters. Panel B presents OLS regression results, with each observation representing a fund family-year. The sample in Column 1 (Column 2) includes funds that mention a contractual relationship with ISS (Glass Lewis) in their prospectuses, while Column 3 includes the entire sample of funds. All columns include year fixed effects. Statistical significance is denoted by \*, \*\*, and \*\*\* at the 10%, 5%, and 1% levels, respectively.

**(A) Characteristics of robo-voters and non-robo-voters**

	Assets (trillions)	Fund family characteristics				Voting platforms		
		% Assets in index funds	% Assets in ESG funds	% Assets in instl. funds	Mgmt. fee	Turnover ratio	Using ISS's	Using GL's
ISS robo-voters	5.9	17%	0.0%	45%	0.7	0.8	81%	0%
Glass Lewis robo-voters	20.6	10%	0.0%	57%	0.7	0.8	0%	50%
Management robo-voters	1.7	13%	0.0%	35%	0.7	0.9	4%	0%
Non-robo-voters	84.9	13%	1.1%	49%	0.6	0.7	52%	8%
								25%

**(B) Relationship Between Probability of Robo-voting and Fund Family Characteristics**

	Dependent variable = 1 if robo-vote with ISS	(1)	Dependent variable = 1 if robo-vote with GL	(2)	Dependent variable = 1 if robo-vote with Mgmt	(3)
Total net assets (log)	-0.03*** (0.00)		-0.00 (0.00)		-0.01*** (0.00)	
% Assets in index funds	0.06** (0.03)		-0.00 (0.01)		0.03** (0.01)	
% Assets in ESG funds	-0.23*** (0.02)		-0.03*** (0.01)		-0.04*** (0.01)	
=1 if use ISS's voting system	0.11*** (0.01)		-0.00 (0.00)		-0.06*** (0.01)	
=1 if use Glass Lewis's voting system	-0.02 (0.01)		0.03** (0.01)		-0.06*** (0.01)	
Year FE	Yes		Yes		Yes	
Adjusted $R^2$	0.13		0.03		0.10	
Observations	1,912		1,145		3,344	

**Table 8: Change of Recommendations by Proxy Advisors**

In both panels, Columns 1-4 present the OLS regression results for Equation 3. Each observation corresponds to a proposal at a specific company in a given year. Proposals are categorized based on their types: director elections, say-on-pay, other management proposals, and shareholder proposals. In these four columns, the dependent variables are dummy variables that equal one if the proxy advisor (ISS in Panel A and Glass Lewis in Panel B) supports/opposes the proposal in the current year and opposed-supported the same proposal in its last occurrence. The independent variable represents the proportion of mutual funds' votes that differed from the proxy advisor's recommendation in the previous appearance of the proposal. Standard errors are clustered at the company level. Columns 5-6 display the OLS regression results for Equation 4, with each observation representing a broad issue in a specific year (e.g., declassify board in 2021). Issues are categorized based on whether they pertain to governance or E&S. In these columns, the dependent variable is the absolute value of the change in support for the issue by the proxy advisor (ISS in Panel A and Glass Lewis in Panel B), comparing the current and previous years. The independent variable represents the proportion of mutual funds' past votes that differed from recommendations on this specific issue in the preceding year. In both panels, statistical significance is indicated by \*, \*\*, and \*\*\* at the 10%, 5%, and 1% levels, respectively.

**(A) Change of Recommendations by ISS**

	Analysis at the specific proposal level				Analysis at the issue level	
	Director	Say-on-Pay	Other Mgmt	Shareholder	Governance	E&S
	Elections	Proposals	Proposals	Proposals	Proposals	Proposals
	(1)	(2)	(3)	(4)	(5)	(6)
% investors' past votes disagreed with ISS	0.48*** (0.01)	0.88*** (0.02)	0.24*** (0.03)	0.14*** (0.05)	0.18*** (0.06)	-0.08 (0.10)
Firm×Issue FE	Yes	Yes	Yes	Yes		
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.27	0.27	0.20	0.04	0.03	-0.00
Observations	228,878	25,991	10,596	1,628	242	139

**(B) Change of Recommendations by Glass Lewis**

	Analysis at the specific proposal level				Analysis at the issue level	
	Director	Say-on-Pay	Other Mgmt	Shareholder	Governance	E&S
	Elections	Proposals	Proposals	Proposals	Proposals	Proposals
	(1)	(2)	(3)	(4)	(5)	(6)
% investors' past votes disagreed with GL	0.46*** (0.01)	0.42*** (0.03)	0.57*** (0.04)	-0.01 (0.05)	0.18*** (0.04)	0.22** (0.10)
Firm×Issue FE	Yes	Yes	Yes	Yes		
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted $R^2$	0.31	0.22	0.39	0.01	0.10	0.04
Observations	70,217	8,485	2,018	1,085	144	104

**Table 9: Change of Recommendations and Disagreement From Customers**

In both panels, Column 1 presents the OLS regression results for Equation 3, with each observation corresponding to a proposal at a specific company in a given year. The dependent variable is a dummy variable that equals one if the proxy advisor (ISS in Panel A and Glass Lewis in Panel B) changes its recommendation between the current proposal and its last occurrence. The independent variables represent the percentage of votes from ISS customers or Glass customers that differed from the proxy advisor's previous recommendation for the proposal. A fund is considered an ISS or Glass Lewis customer if its prospectus discloses a contractual relationship with the proxy advisor. All columns include firm  $\times$  issue and year fixed effects. Standard errors are clustered at the company level. Column 2 in both panels displays the OLS regression results for Equation 4, with each observation corresponding to a broad issue in a given year. The dependent variable is the absolute value of the change in the proxy advisor's (ISS in Panel A and Glass Lewis in Panel B) support for the issue, comparing the current and previous years. The independent variables are the percentage of ISS customers' or Glass customers' past votes that differed from recommendations on this specific issue in the preceding year. In all columns, statistical significance is indicated by \*, \*\*, and \*\*\* at the 10%, 5%, and 1% levels, respectively.

### (A) Change of Recommendations by ISS

	Analysis at the specific proposal level (1)	Analysis at the issue level (2)
% ISS customers' past votes	0.43***	0.80***
disagreed with ISS recommendations	(0.26)	(0.25)
% GL customers' past votes	0.20***	-0.49***
disagreed with ISS recommendations	(0.19)	(0.18)
$\hat{\beta}_1 - \hat{\beta}_2$	0.23***	1.29***
F-statistics	38.44	8.47
Adjusted $R^2$	0.28	0.01
Observations	286,975	668

### (B) Change of Recommendations by Glass Lewis

	Analysis at the specific proposal level (1)	Analysis at the issue level (2)
% ISS customers' past votes	-0.11***	-0.00
disagreed with GL recommendations	(0.04)	(0.10)
% GL customers' past votes	0.63***	0.33**
disagreed with GL recommendations	(0.05)	(0.13)
$\hat{\beta}_1 - \hat{\beta}_2$	-0.74***	-0.33*
F-statistics	71.93	3.29
Adjusted $R^2$	0.30	0.09
Observations	93,091	515

**Table 10: Family Sizes, Blockholders, and Voting Preferences**

Each column presents the OLS regression results for Equation 3, with each observation corresponding to a proposal at a specific company in a given year. The dependent variables are dummy variables that equal one if the proxy advisor (ISS in Panel A and Glass Lewis in Panel B) changes its recommendation between the current proposal and its last occurrence. The independent variables represent the proportion of votes from different investors that differed from the proxy advisor's prior recommendation for the proposal. Column 1 divides investors based on whether the total net assets of their fund family exceed the median for all fund families voting on the same proposal. Column 2 categorizes investors by whether the fund family is a blockholder, defined as holding more than 5 percent of the company's outstanding shares. To control for fund sizes, each vote from a blockholder is matched with a vote from a non-blockholder with the closest total net assets voting on the same proposal. Column 3 classifies investors based on their voting preferences, defined as strong if their W-NOMINATE score is either below the 25th percentile or above the 75th percentile among fund families in the dataset. A vote from an investor with a strong preference is matched with a vote from another investor with the closest total net assets voting on the same proposal. All columns include firm $\times$ issue and year fixed effects, and standard errors are clustered at the company level. Statistical significance is indicated by \*, \*\*, and \*\*\* at the 10%, 5%, and 1% levels, respectively.

**(A) Change of Recommendations by ISS**

	Group A: larger funds Group B: smaller funds (1)	Group A: blockholders Group B: non-blockholders (2)	Group A: strong preferences Group B: weak preferences (3)
% Group A investors' past votes disagreed with ISS	0.38*** (0.01)	0.32*** (0.03)	0.40*** (0.01)
% Group B investors' past votes disagreed with ISS	0.10*** (0.01)	0.10*** (0.02)	0.19*** (0.01)
$\hat{\beta}_1 - \hat{\beta}_2$	0.27***	0.23***	0.21***
F-statistics	147.9	46.3	107.3
Adjusted $R^2$	0.23	0.33	0.24
Observations	287,601	17,638	235,883

**(B) Change of Recommendations by Glass Lewis**

	Group A: larger funds Group B: smaller funds (1)	Group A: blockholders Group B: non-blockholders (2)	Group A: strong preferences Group B: weak preferences (3)
% Group A investors' past votes disagreed with GL	0.41*** (0.03)	0.36*** (0.04)	0.44*** (0.02)
% Group B investors' past votes disagreed with GL	0.05 (0.03)	0.10*** (0.03)	0.01 (0.02)
$\hat{\beta}_1 - \hat{\beta}_2$	0.36***	0.26***	0.43***
F-statistics	28.6	19.6	111.8
Adjusted $R^2$	0.26	0.33	0.26
Observations	89,638	5,207	89,473

## Figure 1: The Four Most Commonly Used N-PX Table Formats

This figure presents one example for each of the four most commonly used N-PX format types (labeled A.1, A.2, B, and C), all featuring Apple Inc.'s 2019 annual meeting. These N-PX forms are filed by BlackRock, Fidelity, Putnam Investments, and John Hancock Financial, respectively. Formats A.1 and A.2 align with ISS's ProxyExchange reporting style, format B corresponds to Glass Lewis's Viewpoint, and format C is consistent with Broadridge's ProxyEdge. Online Appendix II provides the detailed procedure for linking the four N-PX forms to their corresponding voting platforms.

### 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 & Young LLP as Auditors	For	For	Management	
3	Advisory Vote to Ratify Named Executive Officers' Compensation	For	For	Management	
4	Proxy Access Amendments	Against	Against	Shareholder	
5	Disclose Board Diversity and Qualifications	Against	Against	Shareholder	

### 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		
Meeting Type	Country of Trade				
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 Date: 03-Mar-2019					
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: Mutual Funds' Statutory Prospectuses and Proxy Advisors

This figure shows four examples of mutual funds' statutory prospectuses (Form 485APOS or Form 485BPOS). To determine each fund's contractual relationship with various proxy advisors, I conduct keyword searches on its prospectuses with different variations of ISS, Glass Lewis, and Egan-Jones. Panel A displays the prospectus filed by T. Rowe Price in 2021, which identifies the fund as having a contractual relationship with ISS. Panel B shows the prospectus filed by TIAA-CREF, which identifies the fund as having contractual relationships with Glass Lewis. Panel C displays the prospectus filed by BNY Mellon, which identifies the fund as having contractual relationships with both ISS and Glass Lewis. A fund might not always specify its proxy advisors in its prospectus, as shown in Panel D.

### (A) T. Rowe Price's 2021 Prospectus

**HOW PROXIES ARE REVIEWED, PROCESSED AND VOTED**

In order to facilitate the proxy voting process, the Price Advisers have retained **Institutional Shareholder Services (ISS)** as an expert in the proxy voting and corporate governance area. ISS specializes in providing a variety of fiduciary-level proxy advisory and voting services. These services include custom vote recommendations, research, vote execution, and reporting. In order to reflect T. Rowe Price's issue-by-issue voting guidelines as approved each year by the ESG Committee, ISS maintains and implements a custom voting policy for the Price Funds and other advisory client accounts.

**Meeting Notification**

Each Price Adviser utilizes ISS' voting agent services to notify us of upcoming shareholder meetings for portfolio companies held in client accounts and to transmit votes to the various custodian banks of our clients. ISS tracks and reconciles T. Rowe Price holdings against incoming proxy ballots. If ballots do not arrive on time, ISS procures them from the appropriate custodian or proxy distribution agent. Meeting and record date information is updated daily and transmitted to T. Rowe Price through ProxyExchange, an ISS application.

### (B) TIAA-CREF's 2021 Prospectus

Currently, the Funds have ongoing arrangements to disclose, in accordance with the time restrictions and other provisions of the Funds' portfolio holdings disclosure policy, their portfolio holdings to the following recipients: Lipper, Inc., a Reuters Company; Morningstar, Inc.; Mellon Analytical Solutions; S&P; The Thomson Corporation; Command Financial Press; the Investment Company Institute; Donnelley Financial Solutions; Bloomberg Finance, L.P.; Data Explorers Limited; eA Data Automation Services LLC; Markit on Demand; Objectiva Software (d/b/a Nu:Pitch); CoreOne Technologies; Cabot Research, LLC; **Glass, Lewis & Co., LLC**; Brown Brothers Harriman & Co.; Fidelity Information Services, LLC; EquiLend Holdings LLC; FactSet Research Systems Inc. and the lenders under the Funds' credit facility (Deutsche Bank AG, New York Branch; JPMorgan Chase Bank, N.A.; Citibank, N.A.; State Street Bank and Trust Company; Bank of America, N.A.; Barclays Bank PLC; Credit Suisse AG, New York Branch; Goldman Sachs Bank USA; Morgan Stanley Bank, N.A.; HSBC Bank USA, N.A.; The Bank of New York Mellon; U.S. Bank National Association; Bank of Montreal, Chicago Branch; and Wells Fargo Bank, N.A.). The Funds' portfolio holdings are also disclosed on TIAA's corporate website at [www.tiaa.org](http://www.tiaa.org) and on Nuveen's website at [www.nuveen.com](http://www.nuveen.com). Certain of these entities receive portfolio holdings information prior to 20 days after the end of the most recent calendar month. No compensation was received by the Funds, Advisors or their affiliates as part of these arrangements to disclose portfolio holdings of the Funds.

### (C) BNY Mellon's 2021 Prospectus

**Material Conflicts of Interest.** BNY Mellon Wealth Management seeks to avoid material conflicts of interest between the funds and fund shareholders, on the one hand, and BNY Mellon Adviser, BNY Mellon Wealth Management, the fund's principal underwriter (the "Distributor"), or any affiliated person of the fund, BNY Mellon Adviser, BNY Mellon Wealth Management or the Distributor, on the other, through its participation in the Proxy Voting Committee. The Proxy Voting Policy of the Proxy Voting Committee (the "Voting Policy") states that the Proxy Voting Committee seeks to avoid material conflicts of interest through the establishment of the committee structure, which applies detailed, predetermined proxy voting guidelines (the applicable Voting Guidelines) in an objective and consistent manner across client accounts, based on, an applicable, internal and external research and recommendations provided by third party proxy advisory services (including **ISS** and **Glass Lewis** (together with ISS, the "Proxy Advisors")) and without consideration of any client relationship factors. When proxies are voted in accordance with these pre-determined Voting Guidelines, it is BNY Mellon Wealth Management's view that these votes do not present the potential for a material conflict of interest and no additional safeguards are needed. In addition, BNY Mellon Wealth Management will engage a third party as an independent fiduciary to vote all proxies for securities of BNY Mellon, and may engage an independent fiduciary to vote proxies as a further safeguard to avoid potential conflicts of interest or as otherwise required by applicable law. These instances typically arise due to relationships between proxy issuers or companies and BNY Mellon, a BNY Mellon affiliate, a BNY Mellon executive, or a member of BNY Mellon's Board of Directors, but material conflicts of interests may also arise due to relationships involving BNY Mellon Wealth Management and/or BNY Mellon Wealth Management employees, officers and directors. When an independent fiduciary is engaged, the fiduciary either will vote the involved proxy, or provide BNY Mellon Wealth Management with instructions as to how to vote such proxy. In the latter case, BNY Mellon Wealth Management will vote the proxy in accordance with the independent fiduciary's determination. Other possible conflict resolutions may include: (1) voting in proportion to other shareholders ("mirror voting"); (2) erecting informational barriers around, or recusal from the vote decision making process by, the person or persons making voting decisions; and (3) voting in other ways that are consistent with our obligation to vote in our clients' best interest.

### (D) Variant's 2021 Prospectus

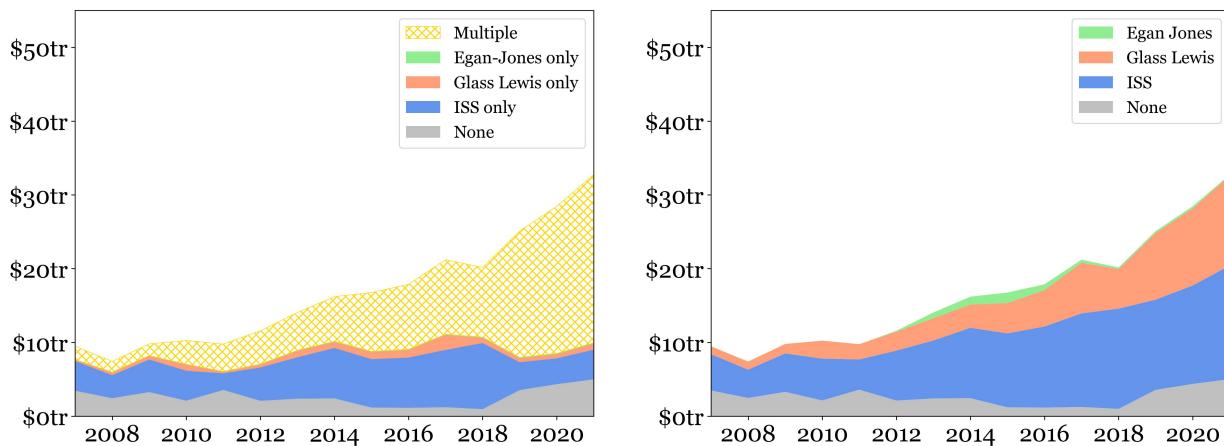
The Investment Manager may delegate our responsibilities under the Proxy Policy to a **third party proxy voting service**, however, no such delegation will relieve the Investment Manager of its responsibilities. The Investment Manager will retain final authority and fiduciary responsibility for such proxy voting.

The Portfolio Managers are responsible for monitoring proxy voting actions and ensuring that (i) proxies are received and forwarded to the appropriate decision makers; and (ii) proxies are voted in a timely manner upon receipt of voting instructions. The Investment Manager is not responsible for voting proxies that are not received but will make reasonable efforts to obtain missing proxies. The Chief Compliance Officer shall identify and monitor potential conflicts of interest that could affect the proxy voting process, including (i) significant client relationships; (ii) other potential material business relationships; and (iii) material personal and family relationships. The Investment Manager may determine not to vote a particular proxy if the costs and burdens exceed the benefits of voting.

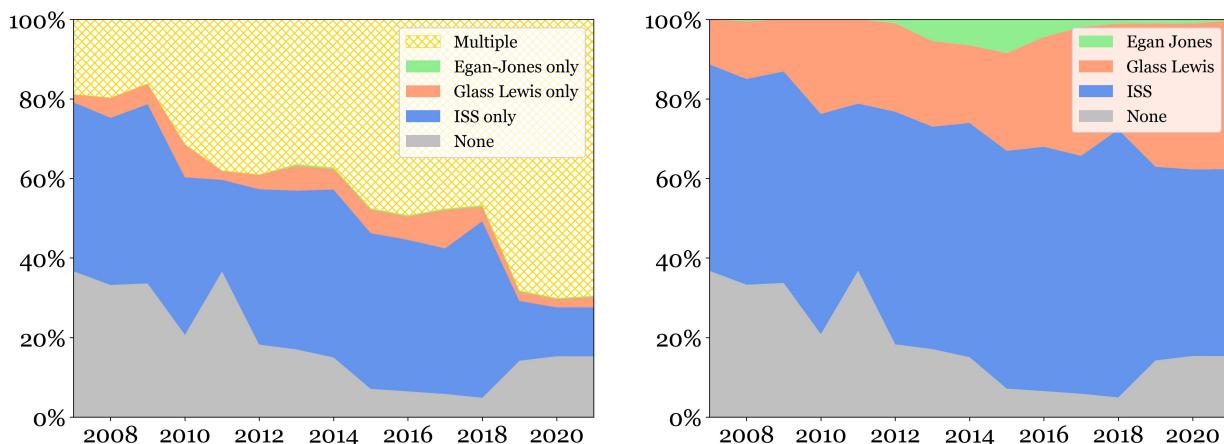
**Figure 3: Concentration in the Proxy Advisory Industry**

This figure presents the evolving concentration in the proxy advisory industry. Panel A displays the aggregated total net assets (TNAs) of mutual fund families, categorizing them based on whether they are customers of different proxy advisors as inferred from their statutory prospectuses. The left figure separates mutual funds by whether they subscribe to a single proxy advisor or multiple advisors. The right figure apportions the TNA of funds with multiple advisors, distributing it equally among the advisors. Panel B displays the relative market share of each proxy advisor, calculated from the aggregate TNA of its mutual fund customers, as shown in Panel A.

**(A) Aggregated Total Net Assets**



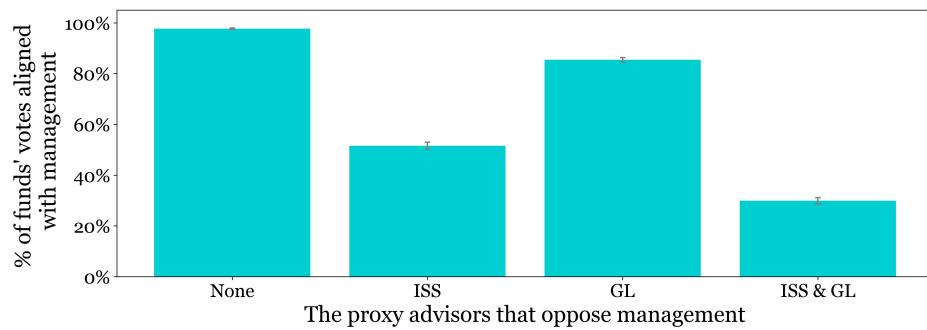
**(B) Market Shares**



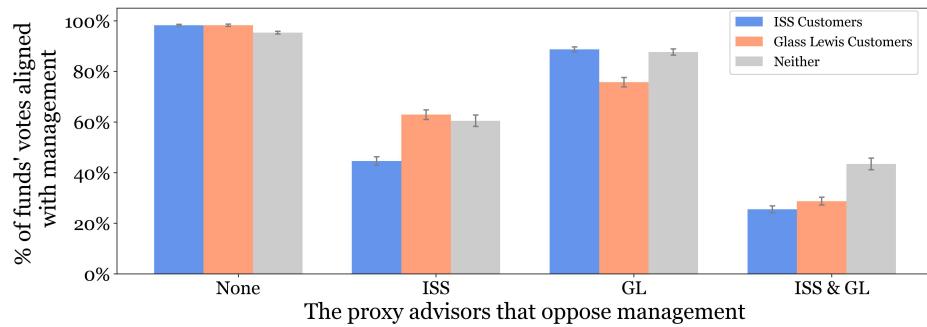
**Figure 4: Fund Votes Under Different Proxy Advisor Recommendations**

This figure displays the percentage of mutual fund votes supporting management when various proxy advisors recommend voting against management. The sample in Panel A includes votes pooled across all mutual funds, with each bar indicating whether ISS or Glass Lewis recommends voting against management. Panel B categorizes funds based on their contractual relationships with ISS or Glass Lewis, as inferred from their prospectuses. Panel C conducts the same analysis as Panel B, excluding funds that subscribe to multiple proxy advisors. The horizontal axes in all panels show the names of proxy advisors that recommend voting against management. The height of each bar displays the percentage of mutual fund votes in support of management. The vertical ticks represent the 95% confidence interval, with standard errors clustered at the fund family-year level.

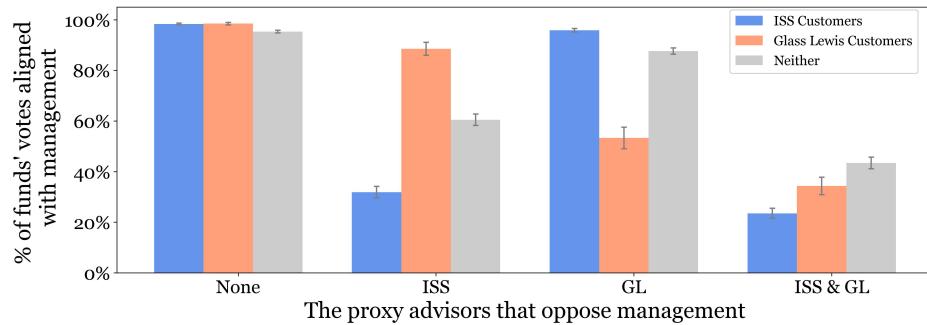
**(A) All votes pooled**



**(B) Votes of proxy advisor customers**



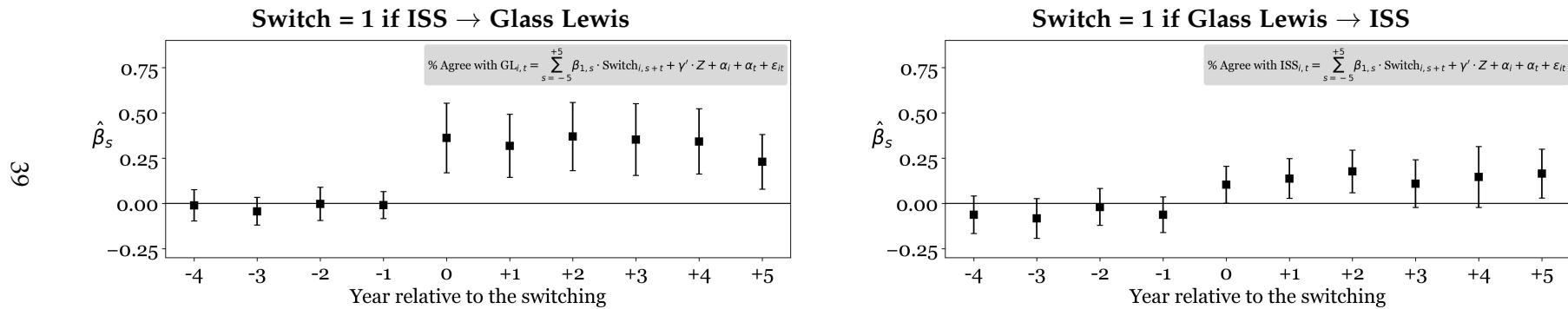
**(C) Votes of proxy advisor customers, excluding funds with multiple advisors**



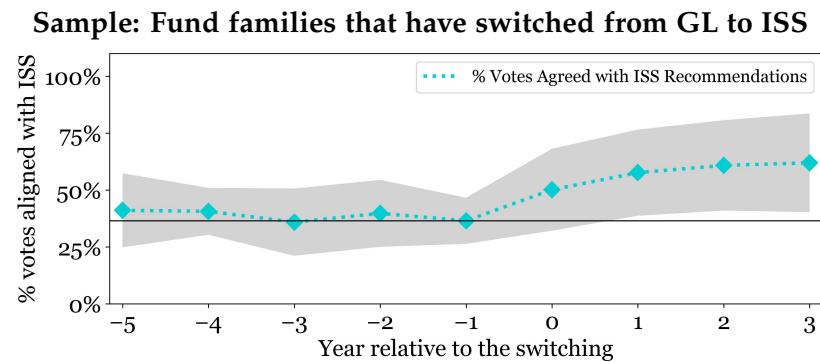
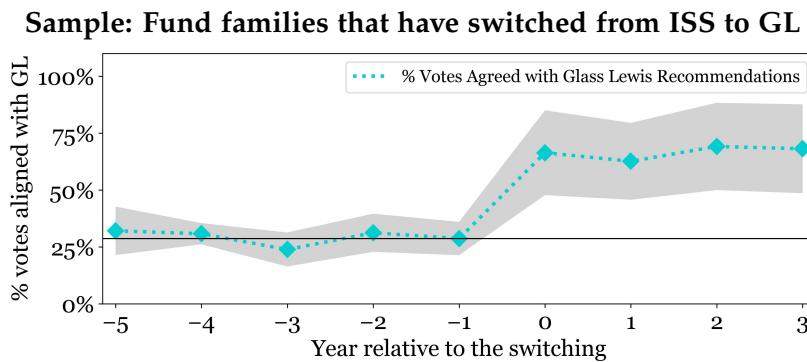
**Figure 5: Evolution of Voting Patterns When Switching Voting Platforms**

Panel A displays coefficients from event study analyses. The regression specifications are depicted in the figure. In the left (right) figure, “ $\text{Switch}_{i,t+s}$ ” is a dummy variable that equals one if the current year is  $s$  years from when fund  $i$  switched from using ISS’s voting system to Glass Lewis’s (or vice versa). Each dot represents the OLS coefficient for  $\hat{\beta}_{1,s}$ , and the vertical bars denote 95% confidence intervals with standard errors clustered at the fund family level. The regressions include fund family fixed effects and controls for fund-family characteristics, as shown in Online Appendix III.A. Panel B displays the voting patterns of funds that switched from ISS’s voting system to Glass Lewis’s (left figure) and from Glass Lewis’s to ISS’s (right figure). Each dot represents the average percentage of the funds’ votes that align with the newly adopted advisor’s recommendations. The shaded area indicates the 95% confidence interval. The solid horizontal line marks the baseline agreement in the year just before the switch. In both panels, the sample includes votes on proposals where the proxy advisor opposes management.

### (A) Event Study Regressions



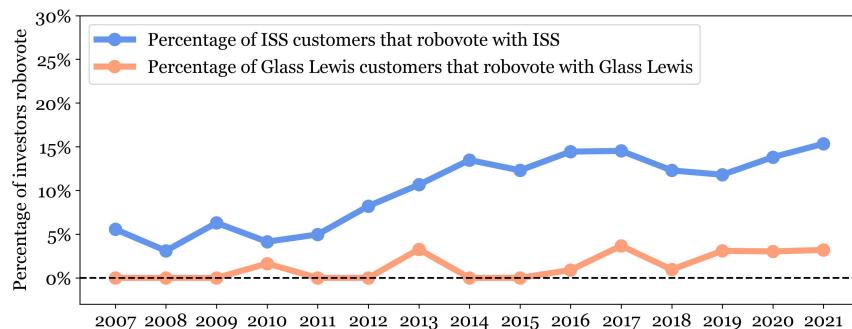
### (B) Evolution of Voting Patterns



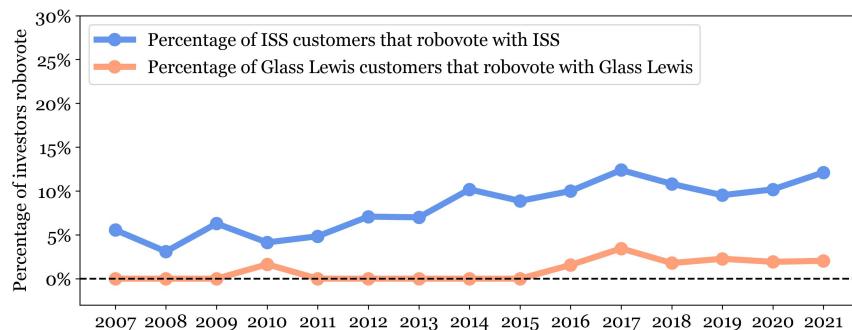
## Figure 6: Prevalence of Robo-Voting

This figure illustrates the trend in robo-voting popularity among ISS and Glass Lewis customers. A fund is considered a proxy advisor's customer if its N-PX format or prospectus identifies it as such. Panels A and B display the percentage of ISS's and Glass Lewis's customers that engage in robo-voting; Panel A includes the complete sample of funds, while Panel B limits the sample to those present in ISS Voting Analytics before 2010. Panel C shows the percentage of assets managed by ISS and Glass Lewis customers that engage in robo-voting.

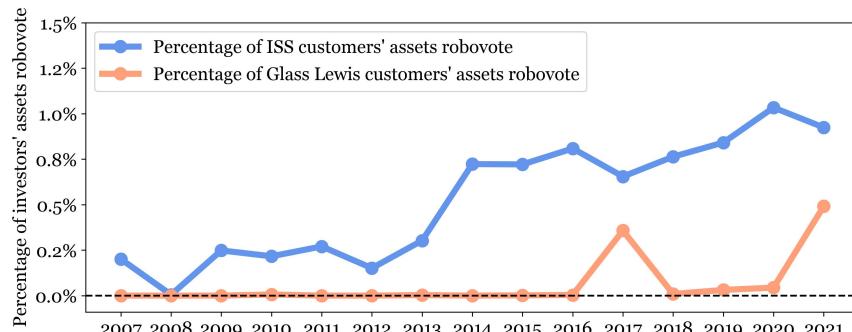
### (A) Percentage of proxy advisor customers that robo-vote



### (B) Percentage of proxy advisor customers that robo-vote (sample: investors existed pre-2010)



### (C) Percentage of proxy advisor customers' assets that robo-vote



# Internet Appendix

## I. Glass Lewis's Recommendations

I obtained recommendations from Glass Lewis for a large public pension fund covering the period from 2008 to 2021 through a Public Records Law request. Panel A displays a screenshot of the response, which includes issuer names, meeting dates, item numbers, descriptions of proposals, Glass Lewis's general and customized recommendations for this investor, and the actual votes cast. Part B provides a detailed explanation of the method used to merge these data with ISS Voting Analytics.

### (A) Screenshot of the response

General Motors Company		Voted	GL Rec	NCRS-DC Policy	Vote Cast
<b>Annual Meeting Agenda (06/06/2017)</b>					
1	Election of Directors		For	For	For
1.1	Elect Joseph J. Ashton		For	For	For
1.2	Elect Mary T. Barra		For	For	For
1.3	Elect Linda R. Gooden		For	For	For
1.4	Elect Joseph Jimenez		For	For	For
1.5	Elect Jane L. Mendillo		For	For	For
1.6	Elect Michael G. Mullen		For	For	For
1.7	Elect James J. Mulva		For	For	For
1.8	Elect Patricia F. Russo		For	For	For
1.9	Elect Thomas M. Schoewe		For	For	For
1.10	Elect Theodore M. Solso		For	For	For
1.11	Elect Carol M. Stephenson		For	For	For
2	Advisory Vote on Executive Compensation		For	For	For
3	Approval of the 2017 Short-Term Incentive Plan		For	For	For
4	Approval of the 2017 Long-Term incentive Plan		For	For	For
5	Ratification of Auditor		For	For	For
6	Shareholder Proposal Regarding Independent Board Chair		For	For	For
7	Shareholder Proposal Regarding Creation of Dual Class Equity Structure		Against	Against	Against

### (B) Matching procedures

#### Step one: matching companies

The Glass Lewis recommendations obtained through a Public Records Law request do not include company identifiers such as tickers or CUSIPs; they only contain company names. ISS and Glass Lewis sometimes use different names to refer to the same company. For example, in ISS Voting Analytics, “Apple Inc.” is used consistently throughout the sample years, whereas Glass Lewis referred to the company as “Apple Computer Inc.” in earlier years.

To match companies between Glass Lewis's recommendations and ISS Voting Analytics, the initial step involves precisely matching each company name in Glass Lewis's recommen-

dations to those appearing in Type B N-PX forms. This enables the determination of the company's ticker. The underlying assumption is that the company names in Glass Lewis's voting system are consistent across different customers. These tickers are then used to match companies between the Glass Lewis recommendation dataset and ISS Voting Analytics.

### **Step two: matching proposals**

Matching annual meetings between Glass Lewis's recommendations and ISS Voting Analytics requires a one-to-one correspondence between the ticker and meeting date across both datasets.

A challenge arises from the different styles employed by ISS and Glass Lewis for sub-item numbers in director elections. For instance, at the 2013 Starbucks annual meeting, Glass Lewis marks Howard Schultz's election with the item number "1", while ISS labels the same election as "1a". This discrepancy in labeling can lead to a significant number of mismatches if matching is based solely on item numbers. To improve matching accuracy, I implement the following steps.

- When both ISS and Glass Lewis use the same style (either numeric or alphanumeric) for annual meetings, I utilize the item number for matching purposes.
- If ISS and Glass Lewis employ different styles, the sequence number is used for matching each proposal. This method is effective as long as the total number of proposals for the annual meeting is the same in both datasets.
- In cases where ISS and Glass Lewis have different styles and the total number of proposals for the annual meeting varies between the datasets, I classify these as errors and exclude them. Of the 18,156 annual meetings in the sample, there are 179 instances where the total number of proposals differs between the two datasets.

## II. Linking N-PX Forms to Proxy Voting Platforms

The process of identifying each mutual fund's use of a voting platform involves three steps:

1. In the first step, I identify common formats across all N-PX filings. Four formats are most prevalent, labeled as A.1, A.2, B, and C. The figures on the left below display N-PX forms filed by four institutions: BlackRock filed format A.1, Fidelity filed format A.2, John Hancock filed format B, and TIAA-CREF filed format C.
2. Next, I compare proposal descriptions from the four identified N-PX forms with those from the three voting platforms' Vote Disclosure Services (VDS) websites. The figures on the right display the VDS interfaces of various institutions: BlackRock and Dimensional Fund Advisors, both hosted on ISS's website, Nuveen funds hosted on Glass Lewis's website, and JP Morgan funds on Broadridge's website. For comparison, all interfaces displayed pertain to Apple Inc's 2019 annual meeting. I then establish a connection between each N-PX form and its corresponding voting platform by contrasting the proposal descriptions and item-number styles. For example, Type A.1 and Type A.2 N-PX forms describe the fifth proposal as "5. Disclose Board Diversity and Qualifications," mirroring ISS VDS. By contrast, the Type B N-PX form describes the proposal as "12. Shareholder Proposal Regarding Disclosure of Board Qualifications," identical to Glass Lewis VDS. Meanwhile, the Type C N-PX form refers to it as "5. A shareholder proposal entitled True Diversity Board Policy," matching Broadridge VDS.
3. Finally, I utilize the column names of each N-PX form to determine its format type (A.1, A.2, B, C, or none of these) and subsequently use it to determine each fund's voting platform.

### N-PX Type A.1 ↔ ISS VDS Version 1

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 & Young LLP as Auditors	For	For	Management
3	Advisory Vote to Ratify Named Executive Officers' Compensation	For	For	Management
4	Proxy Access Amendments	Against	Against	Shareholder
5	Disclose Board Diversity and Qualifications	Against	Against	Shareholder

Apple, Inc.				
Ticker: AAPL Security ID: 037833100				
Meeting Date: 3/1/2019 Meeting Type: Annual				
Record Date: 1/2/2019				
#	Proposal	Mgt Rec	Vote	
<b>Management proposals</b>				
1a	Elect Director James Bell	For	For	
1b	Elect Director Tim Cook	For	For	
1c	Elect Director Al Gore	For	For	
1d	Elect Director Bob Iger	For	For	
1e	Elect Director Andrea Jung	For	For	
1f	Elect Director Art Levinson	For	For	
1g	Elect Director Ron Sugar	For	For	
1h	Elect Director Sue Wagner	For	For	
2	Ratify Ernst & Young LLP as Auditors	For	For	
3	Advisory Vote to Ratify Named Executive Officers' Compensation	For	For	
4	Proxy Access Amendments	Against	Against	Shareholder
5	Disclose Board Diversity and Qualifications	Against	Against	Shareholder
<b>Shareholder proposals</b>				
4	Proxy Access Amendments	Against	Against	
5	Disclose Board Diversity and Qualifications	Against	Against	

## 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		
			Voted		
AAPL	CUSIP 037833100	03/01/2019			
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	Country:	Meeting Date:	Meeting Type:	Contested:
Apple Inc	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 Shareholder Proposal Regarding Proxy Access Bylaw Amendment	Against	For	ShrHoldr	
12 Shareholder Proposal Regarding Disclosure of Board Qualifications	Against	Against	ShrHoldr	

## N-PX Type C ↔ Broadridge VDS

APPLE INC.					
Agenda Number: 934919359			-----		
-----			-----		
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	
Agenda Number: 934919359			Security/CINS: 037833100	
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

### III. Summary Statistics

#### (A) Mutual Funds

This table presents summary statistics at the fund-family level, defined as a unique fund management entity in the CRSP Mutual Fund Dataset. Each observation represents a fund family-year. The sample includes 809 unique fund families from 2007 to 2021. An individual fund is classified as an “ESG” fund if its name contains any of these keywords: ESG, Social, Climate, Environment, Impact, Responsible, Carbon, and Fossil. A fund is considered an institutional fund if flagged by CRSP as such. An index fund is identified either if CRSP flags it as such, or its name includes the keywords: 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. The management fee and expense ratio for each family are TNA-weighted averages of all funds in the family. The age of the management is the difference between the current year and the fund family’s first offer year. Each fund family’s voting platform is inferred from its N-PX format. I also search for variations of ISS, Glass Lewis, or Egan-Jones in each family’s prospectuses. “% Agree With ISS/GL/Management” indicates the proportion of each fund family’s votes that align with ISS/GL/management recommendations. A fund family is considered an ISS/Glass Lewis/management “robo-voter” if (i) over 99.9% of its votes align with ISS recommendations, and (ii) over 99.9% of its votes on proposals where ISS opposes management also align with ISS recommendations. Glass Lewis and management robo-voters are defined similarly.

	Obs	Mean	Std	5%	25%	Median	75%	95%
<b>Fund Characteristics</b>								
Total net assets (in million dollars)	3,600	69.66	345.38	0.03	0.55	3.84	25.07	247.83
% TNA in ESG funds	3,577	0.01	0.08	0.00	0.00	0.00	0.00	0.00
% TNA in institutional funds	3,577	0.48	0.38	0.00	0.06	0.48	0.85	1.00
% TNA in index funds	3,577	0.13	0.29	0.00	0.00	0.00	0.06	1.00
Age of the management	3,600	29.07	22.79	3.00	13.00	24.00	36.00	81.00
Number of votes (in thousands)	3,600	5.42	6.99	0.06	0.66	2.25	7.58	22.55
Management fee	3,577	0.63	0.41	0.09	0.43	0.63	0.86	1.16
Expense ratio	3,577	0.01	0.00	0.00	0.01	0.01	0.01	0.02
<b>Voting Platforms (N-PX Format)</b>								
Use ISS’s ProxyExchange	3,600	0.49	0.50	0.00	0.00	0.00	1.00	1.00
Use Glass Lewis’s Viewpoint	3,600	0.07	0.26	0.00	0.00	0.00	0.00	1.00
Use Broadridge’ ProxyEdge	3,600	0.25	0.43	0.00	0.00	0.00	1.00	1.00
Use other platforms	3,600	0.21	0.40	0.00	0.00	0.00	0.00	1.00
<b>Proxy Advisors in Prospectus</b>								
Mention ISS in prospectus	3,593	0.55	0.50	0.00	0.00	1.00	1.00	1.00
Mention Glass Lewis in prospectus	3,593	0.33	0.47	0.00	0.00	0.00	1.00	1.00
Mention Egan Jones in prospectus	3,593	0.05	0.22	0.00	0.00	0.00	0.00	1.00
<b>Votes</b>								
% votes agree with ISS	3,600	0.92	0.09	0.78	0.89	0.93	0.98	1.00
% votes agree with Glass Lewis	3,320	0.89	0.08	0.78	0.87	0.91	0.94	0.98
% votes agree with management	3,600	0.92	0.09	0.78	0.90	0.93	0.97	1.00
Robo vote with ISS	3,600	0.08	0.27	0.00	0.00	0.00	0.00	1.00
Robo vote with Glass Lewis	3,600	0.01	0.09	0.00	0.00	0.00	0.00	0.00
Robo vote with management	3,600	0.07	0.25	0.00	0.00	0.00	0.00	1.00

## (B) Proposals

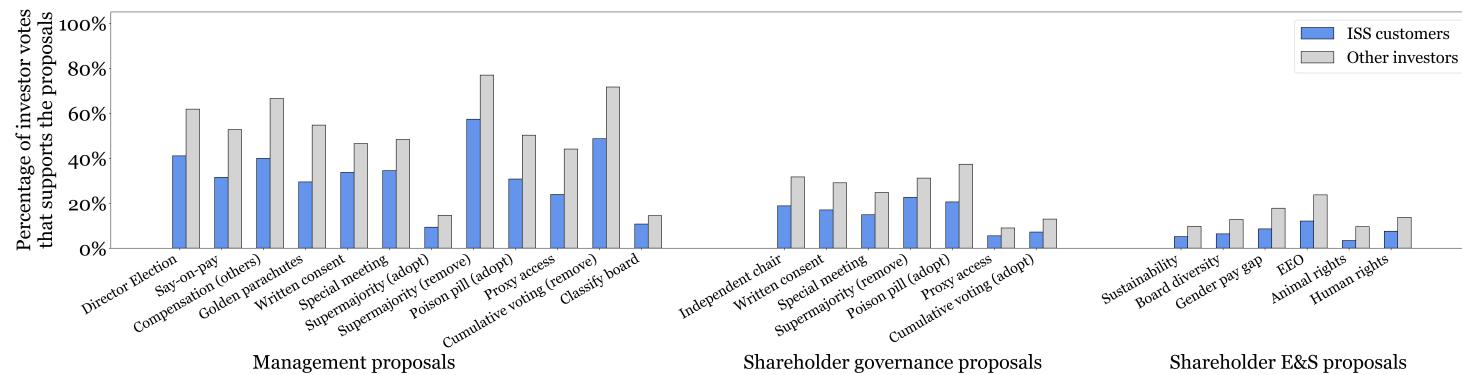
This table presents summary statistics for proposals, covering a sample of 8,842 firms from 2007 to 2021. The types of proposals are hand-coded by examining each proposal's general and issue descriptions. "No. of Items" indicates the number of proposals voted on. "Mgmt Sponsor" represents the proportion of the proposals sponsored by management. "Mgmt For", "ISS For", and "GL For" denote the fractions recommended to vote "FOR" by management, ISS, and GL, respectively. "% Vote (ISS)" or "% Vote (GL)" indicate the proportions of ISS or GL customers who voted for the proposal. Definitions of proxy advisor customers using the N-PX method and the prospectus method are detailed in Section 1.2. "Passed" represents the proportion of proposals that passed.

	No. of Items	Mgmt Sponsor	Mgmt For	ISS For	GL For	N-PX		Prospectus		Passed
						% Vote (ISS)	% Vote (GL)	% Vote (ISS)	% Vote (GL)	
<b>Routine Proposals</b>										
Director Election	352,681	100%	100%	88%	91%	89%	92%	90%	90%	94%
Say-on-pay	32,747	99%	99%	87%	84%	88%	87%	88%	87%	96%
Compensation (others)	3,655	86%	86%	86%	88%	85%	85%	85%	87%	85%
<b>Governance Proposals</b>										
Declassify board	1,597	67%	67%	98%	100%	96%	97%	96%	96%	79%
Golden parachutes	1,353	100%	99%	71%	62%	75%	79%	73%	75%	88%
Majority vote	776	37%	39%	97%	100%	87%	89%	87%	92%	63%
Independent chair	812	0%	1%	62%	91%	46%	46%	46%	51%	4%
Proxy access	475	16%	18%	92%	59%	76%	56%	72%	64%	42%
Written consent	496	19%	19%	86%	86%	69%	61%	68%	65%	28%
Special meeting	770	38%	41%	88%	79%	78%	60%	77%	71%	49%
Supermajority (adopt)	93	100%	100%	10%	0%	19%	24%	24%	26%	78%
Supermajority (remove)	1,081	79%	80%	94%	98%	96%	97%	95%	96%	72%
Poison pill (adopt)	1,063	91%	90%	73%	89%	74%	82%	75%	78%	88%
Poison pill (remove)	57	100%	93%	72%	100%	77%	89%	77%	80%	86%
Cumulative voting (adopt)	199	0%	0%	88%	52%	57%	31%	54%	43%	2%
Cumulative voting (remove)	86	100%	100%	64%	92%	75%	79%	76%	79%	79%
Board size (increase)	113	98%	98%	95%	100%	96%	96%	97%	96%	83%
Board size (decrease)	33	100%	100%	100%	100%	100%	93%	100%	98%	88%
Classify board	82	100%	99%	7%	0%	17%	24%	17%	15%	65%
<b>E&amp;S Proposals</b>										
Sustainability (climate)	136	0%	0%	60%	27%	41%	27%	39%	33%	8%
Sustainability (GHG)	211	0%	0%	82%	25%	49%	29%	46%	34%	6%
Sustainability (renewable)	47	0%	0%	49%	2%	29%	11%	26%	15%	0%
Sustainability (report)	203	0%	0%	78%	36%	46%	35%	44%	39%	5%
Board diversity	76	0%	0%	68%	55%	48%	48%	47%	45%	12%
Gender pay gap	130	0%	0%	21%	18%	21%	21%	19%	18%	0%
Equal employment	189	0%	1%	74%	39%	50%	35%	48%	42%	8%
Animal rights	131	0%	2%	8%	5%	13%	7%	7%	7%	2%
Human rights	86	0%	1%	52%	42%	38%	29%	33%	28%	3%

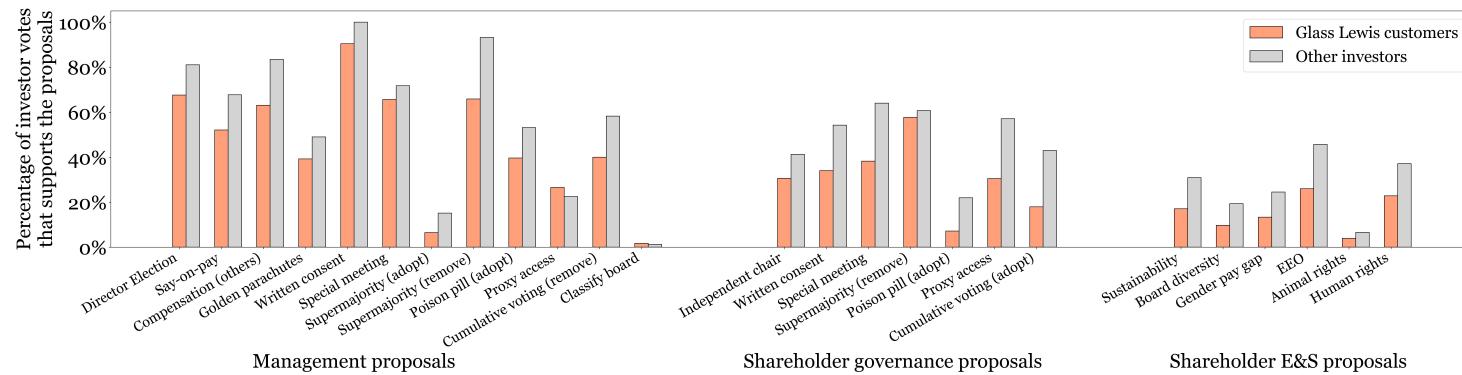
## IV. Proxy Advisor Customers' Votes on Various Issues

This figure displays the proportion of mutual fund votes in favor of various proposals under two scenarios: when ISS advises against the proposal (Panel A), and when Glass Lewis advises against it (Panel B). Proposals are initially categorized into three main groups: management-sponsored proposals (which encompass director elections, say-on-pay, and governance proposals), shareholder-sponsored governance proposals, and shareholder-sponsored social and environmental proposals. These groups are then further subdivided into specific issues, covering the 20 most prevalent types. Board declassification and majority vote adoption are excluded, as both ISS and Glass Lewis almost invariably support these. A fund is classified as an ISS or Glass Lewis customer if it has disclosed a contractual relationship with the proxy advisor in its most recent prospectus.

### (A) Votes of investors when ISS recommends voting against the proposals



### (B) Votes of investors when Glass Lewis recommends voting against the proposals



## V. Frequency of Changes in Proxy Advisor Recommendations

This table presents the percentage of proposals for which ISS or Glass Lewis changed their recommendations. A proposal is considered to have a changed recommendation from a proxy advisor if the proxy advisor supports (opposes) the proposal in a given year, yet had opposed (supported) the same proposal from the same company in its most recent prior occurrence. For director elections, the names of the directors are used to link elections within the same company over different years. For other issues, proposal types are manually categorized by examining each proposal's general and issue descriptions.

	Number of proposals	Number of proposals that re-appear	% the re-appeared that ISS changes recommendations	% the re-appeared that Glass Lewis changes recommendations
<b>Routine Proposals</b>				
Director Election	352,681	248,392	9%	8%
Say-on-pay	32,747	26,607	15%	15%
Compensation (others)	3,655	1,495	11%	15%
<b>Governance Proposals</b>				
Declassify board	1,597	479	0%	0%
Golden parachutes	1,353	43	40%	0%
Majority vote	776	206	1%	0%
Independent chair	812	495	27%	9%
Proxy access	475	151	9%	23%
Written consent	496	289	5%	12%
Special meeting	770	327	4%	18%
Supermajority (adopt)	93	0	N/A	N/A
Supermajority (eliminate)	1,081	198	2%	4%
Poison pill (adopt)	1,063	199	10%	9%
Poison pill (eliminate)	57	24	8%	0%
Cumulative voting (adopt)	199	128	11%	29%
Cumulative voting (eliminate)	86	6	0%	20%
Board size (increase)	113	6	0%	0%
Board size (decrease)	33	2	0%	0%
Classify board	82	6	0%	0%
<b>Environmental and Social Proposals</b>				
Sustainability (climate change)	136	49	10%	18%
Sustainability (GHG)	211	92	14%	16%
Sustainability (Renewable)	47	16	12%	7%
Sustainability (report)	203	80	14%	12%
Board diversity	76	24	8%	21%
Gender pay gap	130	69	26%	19%
Equal employment opportunity	189	89	9%	16%
Animal rights	131	55	9%	11%
Human rights	86	32	22%	44%