

Shareholder Preference Structure and Voting Rules

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Abstract

I study whether decentralized shareholder voting can aggregate heterogeneous investor preferences into stable collective choices. In ten survey experiments with more than 14,000 respondents, I elicit complete rankings over shareholder-voting alternatives, including scenarios anchored in actual proxy-ballot items. Rankings vary systematically with ideology and are consistent with grouped single-crossing implications across populations and choice sets. Condorcet cycles are negligible. Thus, median-voter logic can re-emerge even amid disagreement over profit, climate, and other corporate objectives. In multi-option shareholder choices, plurality can miss compromise alternatives by ignoring second-choice support, whereas ranking-based rules more closely track an incentivized willingness-to-pay benchmark.

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1 Introduction

Shareholder democracy is expanding, as large asset managers increasingly allow ultimate investors to influence how shares held by their funds are voted. As of 2026, Vanguard and BlackRock have extended voting choice to clients with several trillion dollars in eligible assets (BlackRock, 2026; Vanguard, 2026). Proxy advice is becoming more customized as well. Glass Lewis has announced that, beginning in 2027, it will offer client-specific voting perspectives rather than a single house view (Glass Lewis, 2025). Universal proxy cards further expand the choice set in contested director elections by letting shareholders combine management and dissident nominees on a single card (SEC, 2021). Together, these changes shift voting authority toward ultimate investors and make shareholder voting a channel for expressing preferences across multiple issues and candidates. Since investors disagree about profit, sustainability, and which non-financial objectives firms should pursue (Barber et al., 2021; Bauer et al., 2021; Ericson, 2026; Hart et al., 2024; Riedl and Smeets, 2017), the empirical question is whether these disagreements are structured enough to produce stable collective choices.

The answer to this question is not obvious, as classical social-choice theory shows how difficult it can be to aggregate preferences (Arrow, 1951). However, when preferences satisfy structural restrictions such as single-crossing or single-peakedness, majority aggregation can be stable (Black, 1948; Gans and Smart, 1996). Testing whether shareholder preferences satisfy such restrictions requires complete rankings over alternatives. Observed shareholder votes, by contrast, typically reveal only the vote cast and are equilibrium objects that combine preferences with information, delegation, and strategic incentives. I therefore use survey experiments to measure the preference component more directly by eliciting complete rankings over shareholder-voting alternatives.

This paper asks two questions. First, are shareholder preferences over multidimensional corporate trade-offs structured enough that collective choices remain coherent? Second, when ultimate investors are allowed to express those preferences more directly, which voting rules

best translate them into a collective choice? I study these questions through ten survey experiments covering more than 14,000 respondents, including retail and institutional investors in the United States and Norway. I first use a transparent algorithm to construct voting-strategy scenarios anchored in actual 2025 U.S. proxy-ballot items. The algorithm selects, for each firm, one climate proposal, one non-climate social proposal, and the board-recommended baseline using fixed dictionaries and pre-specified selection rules. This three-alternative format is deliberate: ordinary proxy voting records binary votes on individual items, whereas testing preference structure and comparing voting rules require complete rankings over at least three alternatives. I elicit these three-alternative rankings from U.S. equity investors (Experiment 1) and Norwegian sovereign-wealth-fund beneficiaries (Experiment 2). Experiments 3 to 5 use the same climate–social–baseline ranking structure to test whether the main pattern survives changes in population, issue space, and framing.

The first set of findings shows that shareholder preferences are structured in this setting. I begin by testing the single-crossing implications of the observed rankings. Intuitively, single-crossing means that if investors at some point along the ideological spectrum (for example, in the middle) prefer a left alternative to a right alternative, then all investors further to the left must also prefer the left alternative. Symmetrically, if investors at some point prefer the right alternative, then all investors further to the right must do the same. Across Experiments 1 to 5, the grouped ideology-based single-crossing diagnostic yields 174 binding implications from 522 implication checks, with no violations. A global randomization test shows that zero violations would be unlikely if ideology were unrelated to ranking behavior ($p = 0.012$), and additional trend tests point in the same direction. This result is consistent with a left-to-right ordering in shareholder rankings, even when the underlying disputes concern profit, climate, and a wide range of other social objectives. In addition, tests for single-peakedness provide substantial support for structured preferences: for a given ordering of alternatives, most respondents do not rank the middle option below both extremes. In this sense, median-voter logic re-emerges empirically despite the multidimensionality of shareholder conflict.

The second main question is how decentralized shareholder voice should be translated into a collective vote. To study this, I first use respondents' stated preference rankings to compare how different voting rules (plurality, Borda, Condorcet, and IRV) aggregate preferences. To evaluate these rules more formally, I construct an incentivized benchmark based on respondents' willingness to pay to have a higher-ranked rather than a lower-ranked vote cast on their behalf in a future shareholder meeting. I find that plurality is more likely to miss the benchmark and can generate economically large losses, reaching nearly one-third of the available WTP surplus. By contrast, ranking-based rules such as Borda, Condorcet, and IRV, which use information beyond first-place support, track the benchmark more closely and often select the same alternative. In several scenarios, a compromise option receives many second-choice rankings from both sides. This middle option often maximizes the WTP benchmark and wins pairwise majorities, yet plurality can still select an extreme because it ignores how supporters of each extreme rank the compromise alternative relative to the opposite extreme.

One potential concern is that the three-alternative design itself drives these results, and Experiments 6 and 7 address this concern by expanding the choice set in different ways. Experiment 6 adds a fourth alternative to the scenarios from Experiment 1, which allows respondents to support both the climate and social proposals. Experiment 7 expands the policy menu further to six alternatives. In both extensions, preferences remain structured, and in the six-alternatives setting, plurality again tracks a cardinal score benchmark less closely than ranking-based rules.

Experiment 7 also studies a simplified universal-proxy board election, where shareholders can choose among company and activist nominees for the same board seats. Most respondents here favor mixed boards rather than either extreme, and a compromise slate with partial activist representation is both the modal first choice and the pairwise majority winner. Yet plurality-at-large voting over individual candidates elects an all-activist board, showing how seat-by-seat aggregation can produce a composition that differs from the one most shareholders prefer.

The last part of the paper asks how people think shareholder preferences should be aggregated when no stable majority winner exists. Experiments 8–10 present respondents with preference profiles designed to generate majority cycles, meaning that ordinary majority comparisons do not provide a single winning alternative. Responses vary substantially: some respondents favor abstention, others default to profit maximization, and others reason based on compromise or preference intensity. This variation appears among professionals in Experiment 8, Norwegian general-population respondents in Experiment 9, and U.S. general-population respondents in Experiment 10. In the U.S. sample, Republicans more often default to profit maximization, while Democrats more often favor compromise.

This paper has two practical implications for decentralized shareholder voice. In the settings studied here, elicited ultimate-investor preferences over corporate objectives are sufficiently ordered to aggregate coherently. Pass-through voting, proxy customization, and related reforms therefore do not necessarily imply cycles or unstable outcomes simply because ultimate investors disagree about multiple issues. Second, the voting rule matters. Ranking-based rules generally track the benchmark more closely than plurality because they use information from the full ranking. Plurality may still have practical advantages I do not study here. It is familiar and simple because it requires collecting only first-choice information. But when the rules diverge, first-choice-only aggregation can miss a compromise that many respondents on both sides rank second.

Related Literature. The paper first connects to the finance literature on decentralized shareholder voice. As asset managers expand pass-through voting and voting-choice programs, a growing literature studies when voting authority should be decentralized, how voting-choice menus are designed and used, and whether intermediaries represent end-investor preferences (Brav et al., 2025; Herrmann et al., 2024; Hu et al., 2024; Malenko and Malenko, 2023; Malenko et al., 2026; Montagnes et al., 2024; Zingales et al., 2025; Zytneck, 2024). Related work analyzes the benefits and costs of shareholder voice through proposals, engagement, activism, and trading around votes (Gantchev and Giannetti, 2021; Kakhbod et al., 2023;

Levit and Malenko, 2011; Levit et al., 2024; Li et al., 2022; McCahery et al., 2016). While the classic benchmark of shareholder-value maximization (Friedman, 1970; Jensen, 2002) treats shareholders as sharing a single financial objective, more recent work allows firms to reflect shareholder welfare and non-pecuniary investor objectives (Broccardo et al., 2022; Gollier and Pouget, 2022; Hart and Zingales, 2017; Morgan and Tumlinson, 2019).¹ This paper adds two inputs for designing shareholder-democracy institutions: whether ultimate-investor preferences are structured enough to aggregate, and which voting rules best translate them into collective choices.

The paper also contributes to work measuring heterogeneous investor preferences over corporate objectives. A growing finance literature studies how investors and the public incorporate climate, sustainability, and other moral or political dimensions in portfolio and governance choices (Bauer et al., 2021; Bolton et al., 2020; Giglio et al., 2025; Gormley et al., 2024; Hartzmark and Sussman, 2019; Heeb et al., 2023; Hong and Kostovetsky, 2012; Iliewa et al., 2025; Krueger et al., 2020; Riedl and Smeets, 2017; Starks, 2023). Recent experiments likewise show that investors may be willing to pay for socially responsible assets, distinguish value alignment from impact-seeking motives, and jointly trade off investment and voting choices on ESG issues (Bonnefon et al., 2025; Brodback et al., 2025; Duffy et al., 2025). Rather than focusing on which corporate objectives investors disagree about, this paper studies the structure of that disagreement.

One advantage of measuring preferences directly is that observed shareholder votes are equilibrium objects. In addition to preferences, observed votes may also reflect information acquisition, proxy advice, delegation, engagement, trading, institutional incentives, and strategic behavior (Brav et al., 2022; Bubb and Catan, 2022; He et al., 2023; Iliev and Lowry, 2015; Kakhbod et al., 2023; Levit et al., 2024, 2026; Malenko and Malenko, 2019; Malenko et al., 2025; Malenko and Shen, 2016; Matvos and Ostrovsky, 2010; Maug and Rydqvist, 2009). The same underlying preference profile can therefore generate different observed voting patterns depending on the institutional environment, the information available to

¹Recent theory also studies how shareholder voting over such objectives differs from political voting under one-person-one-vote rather than one-share-one-vote (Döttling et al., 2026).

shareholders, and whether shareholders vote strategically or sincerely. This paper instead treats heterogeneous preferences over corporate objectives as the primitive object of interest and isolates the preference component by eliciting complete rankings directly.

This paper further contributes to the design of voting rules in corporate governance and to the empirical comparison of aggregation mechanisms, building on social-choice theory. Classic results show that unrestricted preference aggregation is difficult (Arrow, 1951), whereas structured domains such as single-peaked and single-crossing preferences generate sharper predictions (Black, 1948; Gans and Smart, 1996; Nehring and Puppe, 2007). This paper connects to work on voting-rule design and intensity-based mechanisms (Lalley and Weyl, 2018; Maskin, 2025; Posner and Weyl, 2015). Within corporate finance, Meirowitz et al. (2024) theoretically show that majority aggregation remains well behaved when shareholders trade off firm value against a single social objective but may break down once multiple social dimensions are in play. Related empirical work compares different voting rules in laboratory, survey, and electoral settings (Bassi, 2015; Bouton et al., 2016; Forsythe et al., 1996; Granic, 2017; Igersheim et al., 2022; Lachat and Laslier, 2024; Van der Straeten et al., 2010). This paper introduces an incentivized willingness-to-pay benchmark for evaluating voting rules in a shareholder setting, which makes it possible to compare voting rules by both their ordinal properties and by how closely they match elicited preference intensity.

A related literature studies views on aggregation when majority comparisons do not identify a stable winner. Ambuehl and Bernheim (2021) show that individuals often favor compromise-oriented aggregation rules and may infer intensity from ordinal rankings. Related experiments study preferences over voting institutions and majority thresholds (Engelmann et al., 2023; Weber, 2020). This paper brings these questions into a shareholder setting by studying how practitioners and other respondents think cyclic client-preference profiles should be mapped into a corporate vote.

2 Theoretical Framework

This section sets up the social-choice tools used in the experiments. It explains why aggregating preferences is difficult with three or more feasible alternatives, identifies preference restrictions under which majority aggregation is well behaved, and translates these implications into empirical tests.

2.1 Preferences and the aggregation problem

A corporate decision environment has a finite set of feasible alternatives $X = \{x_1, \dots, x_m\}$; the main analysis uses $X = \{A, B, C\}$. There are n shareholders, indexed by $i \in \{1, \dots, n\}$, each with a strict ranking $\succ_i$ over X . Shareholder i has voting weight $s_i > 0$. Throughout the main part of the empirical analysis, respondents are treated as equally weighted ultimate investors, setting $s_i = 1$ for all i .² A voting rule, or social choice function, maps shareholders' rankings into a winning alternative. A useful benchmark is pairwise majority: for $x, y \in X$, $x \succ_M y$ iff $\sum_i s_i \mathbf{1}\{x \succ_i y\} > \sum_i s_i \mathbf{1}\{y \succ_i x\}$. A *Condorcet winner* is an alternative that beats every other alternative pairwise.

2.2 Why aggregation is difficult

With $|X| \geq 3$, unrestricted rankings can generate cycles. In the Condorcet paradox, three equally weighted shareholders with $A \succ_1 B \succ_1 C$, $B \succ_2 C \succ_2 A$, and $C \succ_3 A \succ_3 B$ imply $A \succ_M B$, $B \succ_M C$, and $C \succ_M A$, meaning that the collective preference is cyclic. Arrow's impossibility theorem formalizes a similar intuition: when $|X| \geq 3$, no social welfare function aggregates arbitrary rankings into a complete social ordering while satisfying standard criteria such as Pareto efficiency, independence of irrelevant alternatives, and non-dictatorship (Arrow, 1951).³

²Robustness checks using ownership-based voting weights for the experiments with investment-value data are reported in Online Appendix D.2.

³Arrow's theorem concerns social welfare functions, which map individual preferences into a collective ranking, while the empirical analysis below compares voting rules. I invoke Arrow to motivate the difficulty of unrestricted ordinal aggregation.

2.3 Preference structure and majority aggregation

I focus on two classic domain restrictions, single-peakedness and single-crossing, that are sufficient for well-behaved majority aggregation.

2.3.1 Single-crossing

Single-crossing is a restriction on how preferences vary across an ordered electorate. In the standard formulation, voters can be ordered so that, for any pair of alternatives, support for one alternative relative to the other switches direction at most once along that order. In the empirical implementation, I use a coarser test based on three ideology groups, where respondents are classified into left, middle, and right ideology groups. Preferences are consistent with the grouped single-crossing diagnostic if the pairwise majority orientation across ideology groups is monotone. If the right-wing group (R) prefers a more left-leaning alternative to a more right-leaning one, the middle (M) and left-wing groups (L) should do so as well; symmetrically, if the left-wing group prefers the right-leaning alternative, so should the middle and right-wing groups.

2.3.2 Single-peakedness

Single-peakedness is a restriction on the ordering of alternatives rather than on the ordering of shareholders. A ranking is single-peaked with respect to an ordering of alternatives if the respondent has a single most-preferred alternative (a peak) and ranks alternatives lower the farther they lie from it in either direction.

2.3.3 Implications for majority aggregation

Under either single-crossing or single-peakedness, pairwise majority is transitive, so absent pairwise ties a Condorcet winner exists (Black, 1948; Gans and Smart, 1996). In both cases, the intuition is median-voter logic, although the relevant ordering differs: single-crossing orders shareholders, while single-peakedness orders alternatives.

The two restrictions are distinct. In a three-voter example with rankings $L : A \succ B \succ C$, $M : A \succ C \succ B$, and $R : C \succ B \succ A$, the profile is single-crossing with respect to the left-to-right ideology ordering, but not single-peaked on any common axis.

2.3.4 Empirical implementation in the three-alternative design

The core design has three alternatives, $X = \{A, B, C\}$, and respondents are partitioned into three ideology groups based on their self-reported political ideology, where L denotes left-wing, M middle/center, and R right-wing.

Single-crossing diagnostic. I use ideology-based single-crossing as the primary diagnostic because it relies on a common ordering of respondents and only pairwise orientations of alternatives. For an ordered pair of alternatives, let p_ℓ denote the alternative to the left and p_r the alternative to the right. Write $p_\ell \succ_g p_r$ if a strict majority in group $g \in \{L, M, R\}$ ranks p_ℓ above p_r .⁴ The diagnostic implies six checks per ordered pair:

$$\begin{aligned} p_\ell \succ_R p_r &\implies p_\ell \succ_M p_r, & p_\ell \succ_M p_r &\implies p_\ell \succ_L p_r, & p_\ell \succ_R p_r &\implies p_\ell \succ_L p_r, \\ p_r \succ_L p_\ell &\implies p_r \succ_M p_\ell, & p_r \succ_M p_\ell &\implies p_r \succ_R p_\ell, & p_r \succ_L p_\ell &\implies p_r \succ_R p_\ell. \end{aligned}$$

With three pairwise comparisons, each scenario therefore yields $3 \times 6 = 18$ checks. When the left-right ordering of one pair of alternatives is ambiguous, I test both possible orientations of that pair. Because each pair generates six implications, this adds six checks and raises the scenario total from 18 to 24.

A prediction is *binding* when its condition is met and *violated* when the implied outcome does not follow; otherwise it is non-binding. For example, the first requirement above is binding if $p_\ell \succ_R p_r$, and violated if $p_\ell \succ_R p_r$ holds while $p_\ell \succ_M p_r$ does not. Throughout the empirical sections, references to single-crossing evidence refer to this grouped diagnostic rather than to an individual-level test.

⁴If a group is exactly split 50–50 on a pairwise comparison, I treat that comparison as non-binding for the corresponding implication test.

Single-peakedness diagnostic. With three alternatives, the single-peakedness test is especially simple. Once the middle option on the axis is fixed, a single-peaked respondent should not rank that option last. I therefore measure single-peakedness fit as the share of respondents who do not rank the middle alternative last. Under uniformly random strict rankings, the middle alternative is ranked last one-third of the time, giving a benchmark fit of two-thirds, while exact single-peakedness corresponds to a fit of one.

2.3.5 Preference structure with more than three alternatives

With more than three alternatives, I keep the same pairwise logic for single-crossing: for every pair of alternatives, support should switch at most once along the shareholder ordering. Single-peakedness, by contrast, may require a geometry of the alternatives, and in multidimensional settings generalized single-peakedness on betweenness structures provides one way to specify such a geometry (Nehring and Puppe, 2007). The appropriate diagnostic therefore depends on the structure of the choice set. In Experiment 6, the four alternatives form a natural 2×2 bundle space with no unique natural one-dimensional axis, so I test two issue-separability restrictions: whether the marginal ranking of adding one proposal is invariant to whether the other proposal is also supported.

2.4 Voting rules

I now turn to analyzing how voting rules aggregate stated preferences into winning alternatives. The analysis focuses on four commonly used ordinal procedures that will also be used in the empirical analysis. **Plurality** selects the alternative receiving the most first-place votes. **Borda** assigns scores $m - 1, m - 2, \dots, 0$ to the alternatives ranked first through last on each ballot and selects the alternative with the highest total score. **Condorcet** selects an alternative that defeats every other alternative in pairwise majority comparisons, when such an alternative exists. **Instant-runoff voting (IRV)** iteratively eliminates the alternative with the fewest first-place votes and transfers those ballots to the next-ranked remaining alternative until one

alternative obtains a majority.

The comparison treats the elicited rankings as sincere preference reports. This abstracts from the strategic incentives that can arise under non-dictatorial voting rules with three or more alternatives (Gibbard, 1973; Satterthwaite, 1975), although the concern is less direct in this setting because respondents are asked to report their preference ordering rather than to cast a ballot under a specified rule.

If preferences are single-crossing or single-peaked, the pairwise majority relation is transitive, so absent pairwise ties a Condorcet winner exists. Any rule satisfying the Condorcet criterion therefore selects that alternative. Among the four procedures considered here, only the Condorcet method is Condorcet-consistent. Plurality, Borda, and IRV can select an alternative other than the Condorcet winner even when one exists. However, this does not mean that Condorcet-consistent rules are necessarily superior from a welfare perspective.

The reason is that the normative evaluation of a voting rule depends on which properties one emphasizes. Arrow's impossibility theorem uses independence of irrelevant alternatives (IIA) as one of its conditions, but Maskin (2025) argues that this condition can be too restrictive. Once IIA is relaxed, Borda-type aggregation becomes more attractive because it uses information from the full ranking rather than only pairwise comparisons. With three alternatives A, B, C , IIA requires that the social ranking of A and B depend only on how voters rank A versus B . Thus, if a voter changes from $C \succ A \succ B$ to $A \succ C \succ B$, the social ranking of A and B must remain unchanged because the voter still ranks A above B , even though the change improves the overall position of A . Borda-type aggregation, by contrast, responds to this change because A moves up in the voter's overall ranking.

Hence, preference structure tells us when pairwise majority yields a coherent ordinal benchmark, but which voting rule best tracks preference intensity is an empirical question left open by the theory.

2.5 A cardinal benchmark: willingness to pay

Ordinal rankings alone do not identify cardinal utilities or interpersonal intensity comparisons (Arrow, 1951). The WTP elicitation in this paper asks how much money respondents are willing to sacrifice for one alternative relative to another. This yields a WTP-maximizing alternative that serves as the empirical cardinal benchmark against which I compare plurality, Borda, IRV, and Condorcet. However, WTP is not identical to welfare. As emphasized in the literature, money-metric measures can diverge from welfare because they depend on income and liquidity and may also reflect reference points, entitlements, and other features of the choice environment (Bar-Gill, 2021; Sunstein, 2007).

2.6 From theory to experimental design

The theoretical framework above imposes four requirements on the empirical design.

First, the choice set must contain at least three feasible alternatives. With only two alternatives, pairwise majority is transitive by construction, plurality coincides with majority rule, and the aggregation problems studied here largely disappear. Three alternatives are therefore the smallest setting in which preference restrictions and voting-rule differences can have empirical content.

Second, respondents must rank all alternatives in the choice set. Single-crossing, single-peakedness, Borda, IRV, and Condorcet comparisons all require complete rankings over a common set of alternatives.

Third, the preference-structure tests need an ordering. For single-crossing, I order respondents by ideology and give each pair of alternatives a left–right orientation. For single-peakedness, I use the corresponding ordering of alternatives when one is specified.

Fourth, comparing voting rules to a cardinal benchmark requires information about preference intensity. The WTP task provides that measure by asking how much respondents are willing to give up to move from a lower-ranked to a higher-ranked alternative.

These design choices fix the mapping from theory to the experiments, but not the content of alternatives A , B , and C . Experiments 1 and 2 supply that content by applying a deterministic algorithm to actual 2025 U.S. proxy ballots, where C is the board-line baseline and A and B are one-item deviations from it.

3 Experiments 1–5: Core Design and Tests Across Settings

Experiments 1–5 implement the three-alternative ranking tasks defined by the theory-to-design mapping in Section 2.6. They vary the scenario source, respondent population, and object of choice. In all five experiments, respondents rank three feasible alternatives: a climate alternative B , a non-climate social alternative A , and a baseline alternative C .⁵ In Experiments 1 and 2, C is the board-line strategy, while in Experiments 3–5 it denotes a profit-oriented baseline.

Because Experiments 1–5 share similarly structured ranking tasks, I report their design and results together. Figure 1 provides an overview of the empirical strategy across all ten experiments.

3.1 Experiment 1: Algorithmic Scenarios Constructed from Actual Proxy-Ballot Items

Experiment 1 elicits complete rankings from U.S. equity investors over voting strategies anchored in actual 2025 proxy-ballot items, and provides a setting for testing preference structure and comparing voting rules against the WTP benchmark.

This experiment took place in January 2026 on Prolific, a platform shown to provide high-quality data (Peer et al., 2022). The pre-registered target sample size was 1,500, and after the screening procedure described below, the final sample consists of 1,456 U.S. equity

⁵The climate/non-climate split is motivated by recent proxy-voting agendas. In Gibson Dunn’s review of 2025 shareholder-proposal submissions, social proposals were the largest broad proposal category, social and environmental proposals together accounted for roughly half of all submissions, and the two most common specific proposal topics were nondiscrimination and diversity, and climate change (Gibson Dunn, 2025).

Figure 1: Overview of the empirical design across ten experiments.

I. Core three-alternative design and transportability (Experiments 1–5)				
Respondents rank three feasible alternatives anchored in a shareholder-voting setting: A = social/non-climate, B = climate, and C = baseline. Complete rankings identify preference structure; WTP is elicited where indicated.				
	Population	Scenario source / object	Main use in the paper	WTP
Exp. 1	U.S. equity investors ($N = 1,456$)	Scenarios built from actual 2025 proxy-ballot items	Algorithmic one-item deviations from the board line	Yes
Exp. 2	Norwegian beneficiaries ($N = 3,200$)	Same proxy-ballot scenarios, sovereign-wealth-fund framing	Holds scenarios fixed; changes country and ownership channel	No
Exp. 3	U.S. general population ($N = 2,418$)	Potentially consequential and hypothetical policy settings	Broadens issue space, scenario source, and the framing of C	Yes
Exp. 4	U.S. equity investors ($N = 1,469$)	Three-candidate board elections	Changes the object of choice from proposals to board candidates	No
Exp. 5	Norwegian beneficiaries ($N = 1,371$)	Sovereign-wealth-fund version of board elections	Cross-country replication of the board-election module	No

II. Richer choice environments (Experiments 6–7)			III. Cyclical preference profiles (Experiments 8–10)		
The ranking task is expanded to test whether preference structure and rule-performance patterns survive richer choice sets.			Preference structure is removed by construction: respondents face a profile with no Condorcet winner and choose how the fund should vote.		
	Population	Main use in the paper		Population	Main use in the paper
Exp. 6	U.S. equity investors ($N = 970$)	Adds $D = A + B$: tests structure in the full 2×2 bundle set	Exp. 8	Scandinavian institutional investors ($N = 16$)	Practitioner responses to a cyclic client-preference profile
Exp. 7, Part 1	U.S. equity investors ($N = 1,921$)	Expands to six policy alternatives; compares voting rules using 0–10 evaluations	Exp. 9	Norwegian general population ($N = 503$)	General population replication
Exp. 7, Part 2	U.S. equity investors ($N = 1,921$)	Tests aggregation in board-composition choices	Exp. 10	U.S. general population ($N = 969$)	U.S. replication and political-heterogeneity evidence

Figure note: This figure provides an overview of the empirical design across ten experiments. WTP denotes willingness to pay.

Alt text: The figure is a three-part overview of the empirical design. The top panel lists Experiments 1–5, which use three-alternative ranking tasks across U.S. and Norwegian respondents. The two lower panels list Experiments 6–7, which expand the choice set, and Experiments 8–10, which study cyclic preference profiles.

investors, defined as respondents who self-reported owning individual stocks, mutual funds, or ETFs. The average self-reported investment is approximately \$258,000, as reported in Online Appendix Table A1. The pre-analysis plan can be found in Online Appendix F and at AsPredicted #267097.

Data quality safeguards. Before the main ranking tasks, I screened out respondents who failed a large set of checks to detect inattentive, automated, or AI-assisted responses. The screening combined Google reCAPTCHA, with a cutoff of 0.7, an audio-based number transcription task, an instructed-response attention check, and a short open-text response used to flag implausibly rapid typing. These checks follow recent evidence that media-based recall tasks and typing patterns in open-ended responses can help identify automated participation (Çelebi et al., 2026). Respondents who failed any screen were excluded before entering the main study. I applied these checks on top of Prolific’s own participant-vetting procedures (Prolific, 2025).

3.1.1 Scenario construction

I wanted the ranking tasks to use real ballot content rather than invented trade-offs. I therefore apply an algorithm that takes actual 2025 U.S. proxy-voting materials as inputs and constructs standardized voting-strategy scenarios.⁶

The algorithm starts from a pre-specified universe of U.S. firms ranked by market capitalization. The universe used in this implementation is all U.S. firms above \$1 trillion in market capitalization in early January 2026 (FinanceCharts, 2026), which gives a total of nine firms. For each firm, the algorithm collects the shareholder proposals on the 2025 proxy ballot together with the voting outcomes from the annual meeting, and classifies each proposal as climate-related, non-climate social, or other using fixed dictionaries applied to the proposal title, resolved clause, and supporting statement. The algorithm reads the proposal text and classifies it as climate if it contains pre-specified climate phrases (e.g., *net zero* or *Paris*

⁶Online Appendix B provides the full dictionaries, exact selection rules, and an audit trail showing why firms are retained or dropped.

Agreement) and as non-climate social if it contains pre-specified social phrases (e.g., *fair wage* or *child labor*).⁷ To focus on salient trade-offs, among the remaining proposals opposed by the board, the algorithm selects the climate proposal and the non-climate social proposal with the highest shareholder support. Firms are retained only if both types of proposals are available. Because the classification dictionaries and selection rules are all fixed in advance, the mapping from ballot items to scenarios is mechanical, which limits researcher discretion and makes the construction auditable.

The algorithm retains five firms—Alphabet, Microsoft, Amazon, Meta, and Berkshire Hathaway (hereafter Berkshire)—and drops four because their 2025 ballots do not contain at least one eligible climate proposal and one eligible non-climate proposal. For the retained firms, the algorithm selects the following proposal pairs:

- **Alphabet (Google):** a human-rights proposal related to AI-driven targeted advertising (A), and a climate-disclosure proposal (B).
- **Microsoft:** a human-rights proposal about data operations in human-rights hotspots (A), and a proposal on the climate and financial risks of providing AI tools for oil and gas development (B).
- **Amazon:** a worker-conditions proposal requesting an independent audit of warehouse working conditions (A), and a proposal on how data-center growth affects the firm's climate commitments (B).
- **Meta:** a proposal concerning hate targeting of marginalized communities (A), and a proposal on greenhouse-gas emissions reduction (B).
- **Berkshire:** an AI-governance proposal requesting independent board oversight of AI (A), and a proposal requesting disclosure of Berkshire's clean energy financing ratio (B).

⁷The goal of the algorithm is to identify proposals supporting climate or social action. The algorithm therefore applies a separate fixed filter that excludes proposals framed as opposition to climate or social initiatives.

Because management recommends voting against both selected proposals, the non-climate strategy *A* and the climate strategy *B* are each one-item deviations from the board line *C*. The full strategy space also includes a fourth strategy, supporting both proposals, which Experiment 6 studies by extending the same setup to the full 2×2 bundle set. Thus *A*, *B*, and *C* are voting strategies over two ballot items, not three separate proxy-card proposals. The ranking task should hence be read as a controlled elicitation of preferences over these strategies rather than as a claim that shareholders ordinarily face these three options.

Ranking task. Respondents first read a short introduction explaining that, at shareholder meetings, investors vote on proposals submitted by shareholders and that the board typically provides voting recommendations. Respondents then see the five firm scenarios described above and rank the three voting strategies (*A*, *B* and *C*) by dragging and dropping them into their preferred order, from most preferred to least preferred.

3.1.2 Incentivized willingness-to-pay elicitation.

After completing the five ranking tasks, each respondent is randomly assigned to *one* of the five firm scenarios. Respondents answer incentivized questions to measure how much they value having a higher-ranked strategy implemented relative to a lower-ranked strategy. The elicitation uses a multiple price list (MPL) framed as a trade-off between (i) receiving no additional payment while the researchers cast a shareholder vote according to a respondent's higher-ranked strategy, or (ii) receiving a personal cash bonus while the researchers cast the vote according to a lower-ranked strategy.⁸ Respondents complete two MPL modules:

1. **First-vs.-third MPL.** Respondents make a series of binary choices between “no bonus and we vote for your highest-ranked strategy” versus “a bonus of \$0, \$1, \$2, \$3, \$10, or \$20 and we vote for your lowest-ranked strategy”.
2. **Second-vs.-third MPL.** Respondents then make the analogous series of choices be-

⁸Additional implementation details and documentation of the submitted proxy vote are provided in Online Appendix C.1.

tween “no bonus and we vote for your second-ranked strategy” versus “a bonus of \$0, \$1, \$2, \$3, \$10, or \$20 and we vote for your lowest-ranked strategy”.

For example, if a respondent prefers the vote option to bonuses of \$0, \$1, and \$2, but prefers a \$3 bonus to the vote option, I assign a WTP of \$2.

After each MPL, respondents are shown a short summary of their implied switching point (e.g., preferring the no-bonus option up to some bonus level and preferring the bonus thereafter) and are asked to confirm that the summary reflects their intended choices. If respondents indicate that the summary is not correct, they are given an opportunity to revise by completing the same MPL again.

This approach provides WTP values for first- vs. third-choice and second- vs. third-choice comparisons. WTP for the first- vs. second-choice comparison is estimated by subtracting these values. For example, if a participant’s preference ranking is $A \succ B \succ C$ and is willing to pay \$10 to implement A over C and \$3 to implement B over C, then their inferred WTP for A over B is \$7.

Implementation and payoffs. To give the choices real stakes, one participant and one MPL row were selected for possible implementation. The selected participant’s choice is implemented by (i) paying the cash bonus associated with the selected MPL row if the bonus option is chosen and (ii) casting the shareholder vote at the next annual meeting according to the chosen strategy. If the selected respondent chose the vote option but the relevant proposal(s) were unavailable, so that the vote could not be implemented, I instead paid the respondent the row-specific bonus amount. Thus, respondents did not risk forgoing money for an unimplementable vote. This payment rule preserves incentives for truthful WTP elicitation even if respondents believe that the relevant proposal is unlikely to reappear.

Demographics and order randomization. The survey collects two demographic variables: self-reported political ideology and the approximate total value of the respondent’s stock and mutual-fund investments. Political ideology was measured using the following choices:

strongly right-wing, right-wing, center, left-wing, strongly left-wing, and prefer not to say. To map responses into the three political categories used for testing single-crossing, *strongly right-wing* and *right-wing* are classified as *R*, *strongly left-wing* and *left-wing* as *L*, and all others as *M*. This classification was pre-registered, and is also used in the other experiments of this paper.

To assess and mitigate potential priming effects, the timing of these demographic questions is randomized. For half of respondents the demographics are asked before the five voting scenarios, and for the other half they are asked after the scenarios and the WTP elicitation.⁹

3.2 Experiment 2

Experiment 2 tests whether the ballot-based preference structure from Experiment 1 holds when the five firm scenarios are held fixed but the country and ownership frame change. Here, I survey Norwegian residents about how they would want Norges Bank Investment Management (NBIM), the manager of the Norwegian sovereign wealth fund, to vote on behalf of Norwegian residents in the five scenarios from Experiment 1. The exact wording was adapted to the NBIM setting and the scenarios were presented in random order.

This experiment was conducted in March 2026 through Ipsos Norway ($N = 3,200$) and pre-registered as AsPredicted #276348.¹⁰ Respondents were drawn from a nationally representative panel using quotas on age, gender, and region. Norwegian residents do not hold transferable ownership claims or direct voting rights in the Fund, but they are its ultimate economic beneficiaries through the government (NBIM, 2024). This sample is hence meant to capture the preferences of the residents for whom the fund is ultimately held.¹¹

⁹I find no evidence of systematic order effects. Rankings and WTP distributions differ significantly in only one of twenty tests. Details are reported in Online Appendix Table A8.

¹⁰I asked Ipsos Norway to collect 3,000 responses. Ipsos returned a final sample of 3,200 completed responses, and I use all completed observations. After completing the ranking tasks analyzed here, respondents were routed to two additional, separate survey modules related to other projects. Because these other modules came later in the survey flow, they could not affect the Experiment 2 responses.

¹¹As of May 2026, the Fund's market value is approximately \$390,000 per Norwegian resident. For context, the median Norwegian household's net worth—excluding assets in the sovereign wealth fund—is about \$200,000 (SSB, 2024), which makes the Fund economically important for Norwegian households. Because the actions of NBIM are widely debated, respondents are likely to view the voting decisions as familiar and relevant.

3.3 Experiment 3

Experiment 3 serves two purposes. First, it moves to a sample broadly representative of the U.S. population. Second, while the alternatives in Experiments 1 and 2 are constrained by actual shareholder-proposal items, this experiment covers a wider set of stakeholder concerns.

3.3.1 Sample

This experiment was fielded on Prolific in August and September 2024 and preregistered on AsPredicted (#188348; see Online Appendix F). I recruited a U.S. sample representative in terms of age, sex, and political affiliation, and obtained $N = 2,418$ valid responses. Each respondent evaluated four of eight scenarios, yielding roughly 1,200 observations per scenario.

3.3.2 Design

Scenarios E1–E4. Experiment 3 centers on four scenarios involving Equinor, a large publicly traded Norwegian energy company with substantial oil and gas operations. Respondents were told that the research team owned shares in Equinor and that one randomly selected participant could determine how the associated voting rights would be used if the issue from the corresponding scenario came to a vote at Equinor’s shareholder meeting. These scenarios are not drawn from realized ballots, but are designed to reflect trade-offs that were salient in debates around Equinor at the time of the survey. The task was potentially consequential as the selected response determined the researcher’s submitted vote, but was not intended to make the respondent decisive for the outcome. Deciding the outcome is especially unlikely in Equinor because the Norwegian government is the majority shareholder. Further details on the public debates motivating the scenarios and on the submitted proxy votes are provided in Online Appendix C.

Across all four scenarios (labeled E1 to E4), option *B* is the climate-oriented alternative and option *C* is the baseline alternative, which is explicitly designed to be profit-maximizing.

In each scenario, *A* captures a different non-climate shareholder concern. In scenario E1, *A* supports developing new gas fields only to strengthen European energy security during the energy crisis, while *B* prioritizes climate by stopping all new gas field development. In E2, *A* supports continuing oil exports to developing countries to reduce economic hardship, while *B* prioritizes climate by restricting such exports. In E3, *A* opposes electrification of oil production due to concerns about higher household energy costs, while *B* supports electrification to reduce emissions. In E4, *A* supports stopping offshore wind development due to concerns about biodiversity and fishing communities, while *B* supports offshore wind to mitigate climate change even if unprofitable. E1 differs somewhat from the other three because its *A*-option can also be seen as an intermediate position, allowing gas development only in the crisis setting rather than supporting all profitable expansion.

Scenarios H1–H4. The remaining four scenarios are stylized scenarios included to move beyond Equinor and cover other corporate trade-offs. They vary the *A*-alternative across harmful labor practices (H1), water conservation in a water-scarce region (H2), indigenous rights in a hydroelectric project (H3), and worker health and safety (H4), while *B* remains the climate alternative and *C* the profit-maximizing baseline in all four scenarios. Full scenario wordings are reported in Online Appendix E.

3.3.3 WTP elicitation in scenarios E1–E4

For the four Equinor scenarios, I elicited WTP using the same multiple-price-list logic as in Experiment 1. After the ranking task, respondents completed first-versus-third and second-versus-third elicitation for one of the Equinor scenarios they had ranked. The survey then collected political ideology and investment-holdings information using the same categories as in Experiment 1.

3.4 Experiment 4

Experiment 4 asks whether preference structure appears when the choice is among board candidates rather than proposals.

The experiment was preregistered as AsPredicted #208601 (see Online Appendix F) and fielded on Prolific in January 2025 among $N = 1,469$ U.S. respondents who self-reported investing in mutual funds or ETFs. Respondents were asked how their main fund should vote in six hypothetical board-election scenarios. As in Experiment 3, *C* is explicitly profit-focused, while *B* combines profit with a climate focus and *A* combines profit with one of the non-climate stakeholder objectives described below.

Scenarios B1–B6. The six *A*-candidate types were chosen to span distinct non-climate stakeholder concerns: reducing AI risks (B1), strengthening workers’ union rights (B2), increasing women’s representation in leadership (B3), expanding access to medicine (B4), strengthening data security and privacy (B5), and improving animal welfare (B6). The setting is deliberately stylized and is not meant to reproduce a full multi-seat proxy contest. Full scenario wordings are reported in Online Appendix E. Respondents also reported their political ideology using the same categories as in Experiment 1.

3.5 Experiment 5

Experiment 5 is the Norwegian counterpart to Experiment 4, replicating part of the board-candidate module in a Norwegian sovereign-fund beneficiary setting. This experiment was conducted in February 2025 and surveyed a nationally representative sample of $N = 1,371$ Norwegian adults, with data collection managed by YouGov Norway. The experiment was preregistered as AsPredicted #210314, with details available in Online Appendix F.

Respondents first reported their political ideology. Next, they evaluated three scenarios, labeled N1–N3, adapted respectively from Scenarios B2, B3, and B6 in Experiment 4. They ranked similar candidate types as in Experiment 4, except that the voting decision was

framed as how respondents would want the Norwegian sovereign wealth fund to vote. Full instructions are reported in Online Appendix E.

To make the task more policy-relevant and consequential beyond the survey, respondents were informed that the findings would be presented to policymakers and disseminated through media outlets.¹² Consistent with this statement, the results were discussed publicly, including an op-ed in a leading Norwegian business newspaper.¹³

4 Experiments 1–5: Results

This section presents the results of Experiments 1–5 together. The five scenarios in Experiment 1 and scenarios E1–E4 in Experiment 3 also include WTP elicitation used to construct cardinal benchmarks. I therefore focus more on these scenarios. Unless otherwise stated, ranking-based analyses use all respondents with valid rankings in the relevant scenario, whereas WTP-based analyses use only respondents for whom WTP was elicited for that scenario. The main analysis uses equal respondent weights. Online Appendix D.2 reports ownership-weighted robustness checks, and the main preference-structure conclusions are unchanged.

4.1 Descriptive ranking patterns

Before testing preference structure formally, I briefly synthesize the descriptive results. First-choice support varies substantially across scenarios and populations.¹⁴ In Experiments 1 and 2, the non-climate social alternative is usually the most popular alternative, with the Berkshire scenario as the main exception, where the climate alternative receives the most first-place support. The board-line alternative receives more support among U.S. equity investors than among Norwegian sovereign-wealth-fund beneficiaries. A similar pattern

¹²This approach aligns with prior research (Næss, 2025) on whether Norwegians support using ownership power for green voting or divestment.

¹³Reference omitted for anonymity and will be included in the final version.

¹⁴The complete ranking distributions are reported in Online Appendix Table A2, while Online Appendix Figure A1 provides a visual heatmap of the distribution of first-choice support.

appears in the board-election modules: U.S. mutual-fund investors in Experiment 4 are relatively more profit-oriented, while the Norwegian beneficiary sample in Experiment 5 is less so. Experiment 3 shows that, in a representative U.S. sample, support for the climate and non-climate alternatives varies substantially across scenarios. No alternative dominates across the 27 three-alternative tasks. This motivates this paper’s key question of whether, despite heterogeneity in first-choice support, the full rankings exhibit a common structure that permits coherent aggregation.

4.2 Preference Structure

4.2.1 Single-Crossing

I here examine whether preferences satisfy the grouped single-crossing implications induced by respondents’ reported political ideology.

Orienting pairwise comparisons on a left–right scale. To translate single-crossing into testable restrictions across ideology groups, I assign a relative left–right orientation to each pair of alternatives. In Experiment 1, this pairwise orientation is pre-specified from the classification $B-A-C$, which yields $18 \times 5 = 90$ pairwise single-crossing constraints across the five scenarios. The same orientation is then carried over to Experiment 2, which follows the pre-specified design of Experiment 1.

I use the same pairwise left–right orientation as the main specification in Experiments 3–5. In some scenarios, however, A could reasonably be placed to the left of B . To avoid making the result depend on this maintained ordering, I also add single-crossing checks for alternative orderings that the classification heuristics in Online Appendix D.1 identify as plausible. Applying these heuristics, A may also be classified as the most left-leaning option in scenarios H1, H3, H4, B4, N1, and N3. Accordingly, I test single-crossing under both orderings $A-B-C$ and $B-A-C$ in these cases. This introduces six additional requirements per scenario, increasing the total number of constraints by 18 in Experiment 3, 6 in Experiment

4, and 12 in Experiment 5.

Requirement checks. Table 1 summarizes the results. None of the constraints is violated in any experiment. Of the 522 tested requirements, 174 are binding, and all of these are satisfied. Nor are these in general knife-edge majorities: Online Appendix Table A3 shows that the median binding consequent margin is 26.6 percentage points.

Table 1: Single-Crossing Diagnostics

Experiment	Ordering	Respondents	Constraints	Binding	Violations
Exp. 1	B–A–C	1,456	90	29	0
Exp. 2	B–A–C	3,200	90	43	0
Exp. 3	B–A–C	2,418	144	37	0
	<i>additional: A–B–C</i>		18	9	0
Exp. 4	B–A–C	1,469	108	30	0
	<i>additional: A–B–C</i>		6	3	0
Exp. 5	B–A–C	1,371	54	17	0
	<i>additional: A–B–C</i>		12	6	0
All experiments		9,914	522	174	0

Notes: The table reports the ideology-based single-crossing diagnostic for Experiments 1–5. Respondents denotes experiment-level sample size, scenario-level number of valid rankings is reported in Table A2. For each assumed left-to-right ordering of the alternatives, the table reports the number of pairwise single-crossing implications tested, the number that are binding in the data, and the number of binding implications that are violated. In the B–A–C ordering, B is the climate alternative, A is the non-climate social alternative, and C is the board-line or profit-oriented alternative. The A–B–C rows report the corresponding diagnostic in scenarios where A can also plausibly be classified as the left-most alternative. The global permutation test for observing zero violations across all experiments yields $p = 0.012$.

A global randomization test. Table 1, however, does not indicate how often we would expect zero violations under a null in which ideology does not structure ranking behavior. I therefore construct a global permutation test to evaluate the zero-violation result more formally. I define a test statistic V equal to the total number of *violated binding* single-crossing implications, summed over all relevant pairs and scenarios. In the observed data, $V_{\text{obs}} = 0$ in each experiment, and hence $V_{\text{obs}}^{\text{All}} = 0$ when summing across all experiments.

To assess how unusual $V_{\text{obs}}^{\text{All}} = 0$ is under this null, I randomly reassign ideology labels across respondents within each experiment while keeping each respondent’s full ranking profile fixed. I then recompute V for each permuted dataset and repeat this procedure 20,000

times.

Under this permutation null, the median draw produces 10 violations, and $V^{\text{All}} = 0$ occurs in only 237 out of 20,000 permutations, corresponding to a randomization p -value of $(237 + 1)/(20000 + 1) \approx 0.012$. Thus, obtaining zero requirement violations simultaneously across all five experiments is unlikely under a null in which political ideology is unrelated to ranking behavior. Figure 2, Panel A, provides an illustration, while Online Appendix Table A4 provides more details on the permutation tests. The pooled statistic across experiments is used as the main randomization diagnostic because the violation-count statistic is relatively coarse within any single experiment, but the experiment-level rows are reported in Online Appendix Table A4.

Result 1. *Preferences satisfy the grouped ideology-based single-crossing diagnostic: across the five experiments, the 522 implication checks yield 174 binding implications and no violations. Permutation analysis shows that observing zero violations is unlikely ($p = 0.012$) if ideology does not structure preferences.*

Online Appendix Table A13 shows that the single-crossing result holds when excluding respondents who answer “don’t know/prefer not to say” from the middle group, as the zero-violation result is even more unlikely under the permutation null in this specification ($p = 0.007$).

Formal trend tests. While the single-crossing diagnostic evaluates majority-threshold implications across ideology groups, I also report trend tests that directly examine whether support for the more left-leaning alternative increases *monotonically* as one moves from right-wing to left-wing respondents. I use both a one-parameter logit trend regression, reported as odds ratios, and a nonparametric ordered-trend test. Both tests reject the null of no ideological gradient at the 1 percent level, with the expected sign, in 29 of 30 scenario-pair comparisons in Experiments 1 and 2, and in 45 of 51 comparisons in Experiments 3–5 (Tables A9 and A10).

4.2.2 Single-Peakedness

Single-peakedness provides a second, simpler check on structure with three alternatives: once an alternative is specified as the middle option, a ranking is single-peaked if and only if the middle alternative is not ranked last. In Experiments 1 and 2, *A* is pre-specified as the middle alternative, so I measure approximate single-peakedness as one minus the share of respondents who rank *A* last. In Experiment 1, the share of rankings consistent with the pre-specified *A*-middle axis ranges from 83.6 to 96.1 percent across the five scenarios. In Experiment 2, the corresponding range is 84.4 to 95.1 percent. The estimates lie well above the 66.7 percent benchmark implied by uniformly random strict rankings, and exact binomial tests against this benchmark reject the random-ranking null at $p < 0.001$ in every scenario. Figure 2, Panel B, plots these estimates. Online Appendix Table A5 reports the full set of single-peakedness diagnostics, which indicate approximate single-peakedness in Experiments 3–5 as well, although with more moderate fit in several scenarios.¹⁵

Result 2. *In Experiments 1 and 2, preferences are consistent with the single-peakedness diagnostic: most respondents do not rank the pre-specified middle alternative last, and the observed fit is far above what would arise under uniformly random rankings. In Experiments 3–5, the fit remains above the corresponding random-ranking benchmark but is more moderate.*

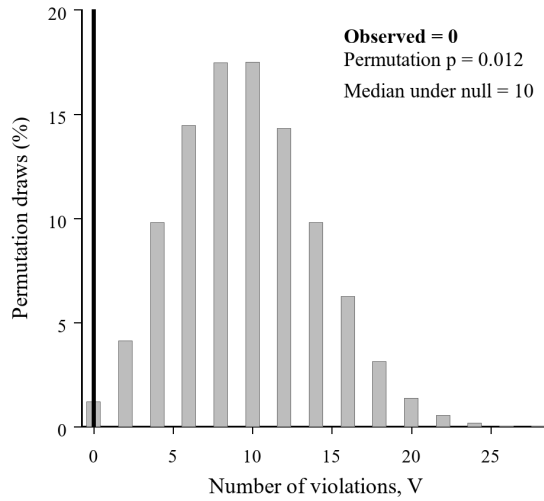
4.3 Voting Rules

I now compare how the voting rules map the rankings into winners. For each scenario, I compute the winner under plurality, Borda, Condorcet, and IRV. Because winners can change discontinuously with small changes in the sample, point estimates alone do not capture how stable each rule’s selected alternative is to sampling variation. Two rules may select the same point-estimate winner but differ in how often that outcome survives small changes in the

¹⁵Because no axis is fixed *ex ante* in Experiments 3–5, the inference accounts for selecting the middle alternative from the data.

Figure 2: Preference-Structure Diagnostics.

A. Single-crossing null



B. Single-peakedness fit

Share not ranking A last on the B-A-C axis (%)

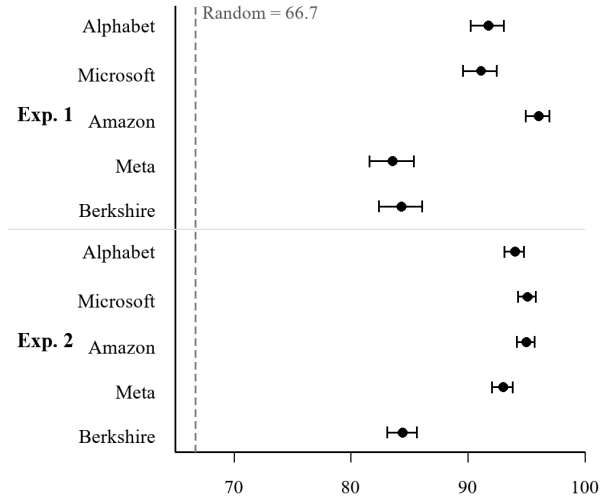


Figure note: Panel A plots the permutation-null distribution of violated binding single-crossing implications. Panel B reports single-peakedness fit on the pre-specified B–A–C axis for Experiments 1 and 2; intervals are 95% Wilson score confidence intervals for binomial proportions. The vertical dashed line marks the 66.7% benchmark implied by uniformly random strict rankings.

Alt text: Panel A is a histogram of the permutation-null draws; the bulk of draws lie above zero and peak near 10, while the observed value of 0 sits alone at the far-left edge, well outside the null distribution. Panel B is a dot-and-whisker plot of ten estimates, five per experiment, all lying to the right of the 66.7% line and clustered between roughly 84% and 96% with short intervals.

observed electorate. I therefore report respondent-level bootstrap winner frequencies, which show how often each rule selects each alternative under repeated resampling and can be read as a measure of winner stability.

4.3.1 Bootstrap design and inference

To construct these frequencies, I use a respondent-level bootstrap with 5,000 replications. In each replication, I resample respondents with replacement and recompute: (i) the ranking shares in each scenario, (ii) the winner under each voting rule, and (iii) whether pairwise majority yields a Condorcet winner or a Condorcet cycle. Throughout, a rule is treated as selecting an alternative only when it has a unique winner. For the WTP-elicited scenarios, I use the same respondent-level bootstrap for the WTP-based rule comparisons in Section 4.4.¹⁶

4.3.2 Winner Frequencies and Effect of Voting Rules

In many scenarios, one alternative has broad enough support that plurality, Borda, Condorcet, and IRV select similar alternatives.¹⁷ I focus on the scenarios where the rules actually diverge, especially where a WTP benchmark is also available. Therefore, the most detailed analysis below considers the Berkshire scenario from Experiment 1 and scenarios E1–E3 from Experiment 3.

The Berkshire scenario in Experiment 1 clearly shows the importance of voting rules. Plurality selects *B* in 100% of bootstrap replications, whereas Borda selects *B* in only 3.0% of replications, and Condorcet and IRV do so in 20.8% and 20.9%, respectively. Figure 3 illustrates this divergence by grouping respondents according to their first choice: bar heights show first-choice support, and segments within each bar show which of the remaining alternatives those respondents rank second. In the Berkshire panel, the *B*-first bar is the tallest, highlighting that plurality selects *B*. However, within both the *B*-first and *C*-first bars, the

¹⁶The ranking bootstrap reports which alternative a rule selects in the full ranking sample. The WTP bootstrap uses the scenario-specific WTP subsample and reports non-WTP-maximization, with the WTP benchmark recomputed in each draw; the percentages therefore need not coincide.

¹⁷Online Appendix Table A6 reports bootstrap outcome frequencies for all 27 scenarios across Experiments 1–5.

segment placing A second is larger than for the remaining alternative. The ranking $C \succ A \succ B$ accounts for 18.7% of respondents, whereas $C \succ B \succ A$ accounts for only 8.0%, so C -first respondents mostly favor A over B in a direct comparison. Even more striking, 33.3% have ranking $B \succ A \succ C$, whereas only 7.6% have $B \succ C \succ A$, showing that most respondents who prefer B still rank A ahead of the opposite extreme. Thus, both respondents who most prefer C and respondents who most prefer B tend to place A ahead of the alternative on the other side. Plurality ignores this information and therefore favors the alternative with the strongest first-place support even when another alternative is more broadly acceptable across the electorate.

Figure 3 shows that the same mechanism appears in scenario E1, where A has a natural compromise interpretation. Here first-place support for A and B is relatively close: 37.4% of respondents rank A first and 35.5% rank B first. Because the first-place margin between A and B is small, plurality selects B in 21.8% of bootstrap replications. Once the full ranking is taken into account, however, support for A is broader. Among respondents who rank C first, A is much more popular than B , meaning that support shifts toward A when their preferences are taken into account. In the full sample, 23.9% of respondents have ranking $C \succ A \succ B$, whereas only 3.2% have $C \succ B \succ A$, meaning that 88 percent of C -first respondents prefer A over B . Likewise, 30.5% have ranking $B \succ A \succ C$, whereas only 5.0% have $B \succ C \succ A$. Accordingly, Borda, Condorcet, and IRV select A in 100% of bootstrap replications.

Scenario E3 has a similar structure. Here B receives the most first-place support and plurality therefore selects it in 97.1% of bootstrap replications. By contrast, Borda selects B in only 19.3% of replications, while Condorcet and IRV do so in 35.2%. Again, the reason is that A attracts broad second-place support. In the full sample, 13.8% of respondents have ranking $C \succ A \succ B$, compared with 8.0% who have $C \succ B \succ A$. Similarly, 26.3% have ranking $B \succ A \succ C$, compared with 15.2% who have $B \succ C \succ A$. In Scenario E2, all four ordinal rules typically select B . However, the same mechanism is still present in weaker form: Borda, Condorcet, and IRV give A a non-trivial probability of winning, whereas plurality almost never does.

Figure 3: Second-Choice Support and Voting-Rule Divergence

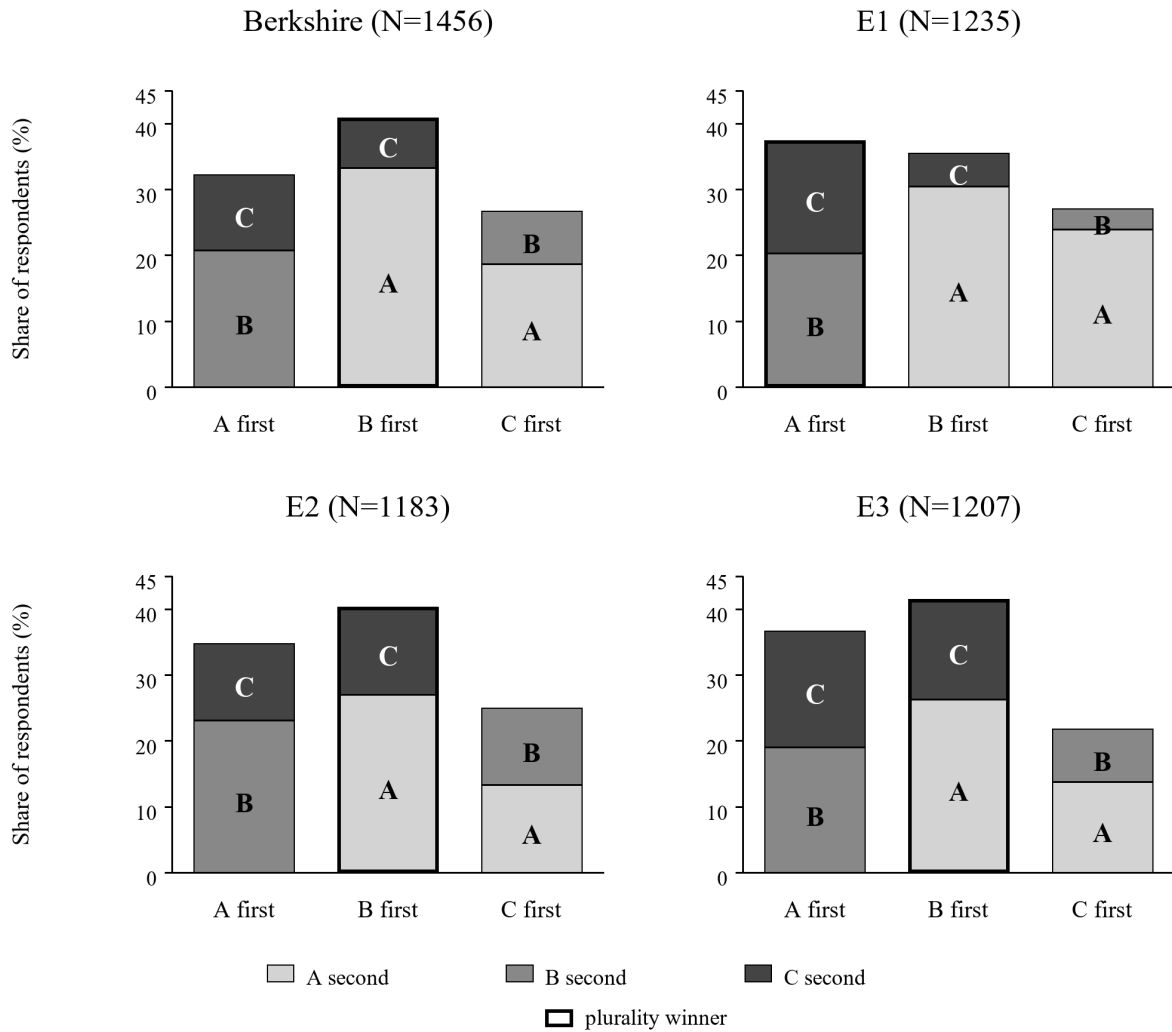


Figure note: The figure shows ranking distributions in the four WTP-elicited scenarios highlighted in the voting-rule analysis, using respondents with valid rankings in each scenario. Each bar groups respondents by their first-choice alternative and reports that group's share of the sample. Within each bar, segments show how those respondents rank the remaining alternatives, with letters indicating second choices. Thick black borders indicate plurality winners.

Alt text: Four panels show stacked bars for Berkshire and scenarios E1–E3. Each panel has three bars for respondents whose first choice is A, B, or C. In Berkshire, E2 and E3 the B bar is tallest, while in E1 the A and B bars are more similar. Across panels, the share ranking A second is high within both the B-first and C-first bars.

4.4 WTP-Based Performance of Voting Rules

The ordinal comparisons above show where the rules diverge. The WTP benchmark puts these disagreements on a cardinal scale by measuring how far each rule’s winner is from the WTP-maximizing alternative using bootstrap analysis.

WTP benchmark and loss measure. For each respondent, I translate the rankings and WTP responses into a valuation of each alternative. Let V_j denote the aggregate WTP value of alternative j . I normalize these values by subtracting the value of the lowest-valued alternative, so that $\tilde{V}_j = V_j - \min_{k \in X} V_k$, and then I define the maximum normalized WTP value as $\tilde{V}^{\max} = \max_{k \in X} \tilde{V}_k$. For a voting rule that selects alternative j , I define normalized WTP loss as $WL_j = 100 \times \frac{\tilde{V}^{\max} - \tilde{V}_j}{\tilde{V}^{\max}}$. A loss of zero means that the rule selects a WTP-maximizing alternative, while a loss of 100 means that it selects the lowest-WTP alternative in the choice set.

Bootstrap inference. The WTP analysis uses the same respondent-level bootstrap, restricted to respondents for whom WTP was elicited for the relevant scenario. In each of 5,000 replications, I resample respondents, recompute aggregate WTP values, identify the WTP-maximizing alternative, apply each voting rule, and calculate the implied WTP loss. The WTP benchmark is therefore recomputed in every bootstrap replication rather than fixed from the original sample. I report mean WTP loss across replications together with 95% bootstrap percentile intervals.¹⁸

4.4.1 Main WTP-based loss results

Table 2 focuses on the four WTP-elicited scenarios in which non-trivial rule-performance differences arise relative to the WTP benchmark. In the Berkshire scenario, plurality yields a mean WTP-based loss of 29.5% (Panel A) and selects a non-WTP-maximizing alternative in 99.7% of bootstrap replications (Panel B). By contrast, the corresponding mean losses

¹⁸The WTP-based loss is computed only in bootstrap replications in which the rule yields a unique winner.

are 14.4% for Borda, 20.6% for Condorcet, and 22.4% for IRV. In scenario E1, plurality generates a mean loss of 19.6% and selects a non-WTP-maximizing alternative in 32.3% of replications, whereas Borda, Condorcet, and IRV all coincide with the WTP benchmark and yield zero loss in every replication. In E3, plurality again has the largest mean WTP-based loss, at 5.4%, compared with 2.3% for Borda and 2.8% for both Condorcet and IRV. Scenario E2 shows that agreement among ordinal rules is not sufficient to recover the WTP benchmark. Figure 3 shows that all four rules frequently select *B*, whereas the WTP analysis shows that *A* has the highest aggregate WTP value. The resulting mean WTP-based loss is nevertheless modest because the aggregate WTP values of *A* and *B* are relatively close.

The main findings from this analysis also hold under different specifications.¹⁹

Result 3. *In the WTP-elicited scenarios, non-trivial differences arise in four out of nine cases. In these scenarios, plurality has the highest mean WTP-based loss. Ranking-based rules—Borda, Condorcet, and IRV—generally lead to lower losses, although no ordinal rule fully matches the WTP benchmark in all cases.*

Table 2: Voting-rule performance relative to the WTP benchmark

Rule	Berkshire		E1		E2		E3	
<i>Panel A: Mean WTP-based loss (%) [95% percentile interval]</i>								
Plurality	29.5	[12.2, 48.5]	19.6	[0.0, 72.9]	8.5	[0.0, 27.7]	5.4	[0.0, 24.7]
Borda	14.4	[0.0, 42.3]	0.0	[0.0, 0.0]	7.5	[0.0, 25.6]	2.3	[0.0, 16.6]
Condorcet	20.6	[0.0, 44.7]	0.0	[0.0, 0.0]	6.2	[0.0, 25.2]	2.8	[0.0, 18.6]
IRV	22.4	[0.0, 46.4]	0.0	[0.0, 0.0]	6.2	[0.0, 25.2]	2.8	[0.0, 18.6]
<i>Panel B: Bootstrap share selecting non-WTP-maximizer (%)</i>								
Plurality	99.7		32.3		61.9		51.6	
Borda	51.8		0.0		58.0		30.3	
Condorcet	70.6		0.0		49.6		33.6	
IRV	74.1		0.0		49.6		33.6	

Notes: The table reports the WTP-elicited scenarios with non-trivial voting-rule differences. Panel A reports mean normalized WTP-based loss across respondent-level bootstrap replications in which the voting rule yields a unique winner; brackets show 95% percentile intervals. Panel B reports the share of bootstrap replications in which the rule selects a unique non-WTP-maximizing alternative. Replications with no unique winner are omitted from Panel A and are not counted as errors in Panel B. The WTP-based bootstrap is conducted within the scenario-specific WTP subsample, so both the ordinal rule winner and the WTP benchmark are computed from the same respondent pool.

¹⁹Online Appendix Table A12 reports robustness checks for the scenario-specific WTP subsample, alternative interval codings of the grid-valued MPL responses, and alternative tie handling in bootstrap draws without a unique rule winner.

While ranking-based rules outperform plurality, it is less clear which of them performs best. Compared with the WTP benchmark, Borda performs best in Berkshire and E3, Condorcet and IRV in E2, and all three coincide in E1. As Online Appendix Table A7 shows, these differences are often zero.

4.5 Condorcet Cycles

A concern with Condorcet-based aggregation is that pairwise majority may cycle when preferences are unrestricted, although the structured ranking patterns documented above suggest that this concern is limited in this setting. There are no Condorcet cycles in the point estimates in any of the 27 scenarios, and Online Appendix Table A6 shows that the bootstrap frequency of strict Condorcet cycles is essentially zero throughout. In other words, respondent-level bootstrap replications almost always yield a well-defined Condorcet winner.

Result 4. *Strict Condorcet cycles are absent in point estimates and negligible in respondent-level bootstrap replications.*

5 Experiment 6: Adding the joint-support bundle

The evidence so far comes from three-alternative ranking tasks. The next two experiments examine whether these findings hold in richer settings. Experiment 6 adds a fourth alternative to the ballot scenarios from Experiment 1. Experiment 7 studies a six-option policy menu that allows respondents to combine objectives, and a multi-candidate board election where the object of aggregation is board composition.

5.1 Design

Experiment 6 (preregistered as AsPredicted #275061) revisits the five algorithmically constructed firm scenarios from Experiment 1, but adds alternative D , which supports both shareholder proposals. The four alternatives form a 2×2 choice set: $C = (0,0)$ supports

neither proposal, $A = (1, 0)$ supports only the social proposal, $B = (0, 1)$ supports only the climate proposal, and $D = (1, 1)$ supports both.

The sample consists of 970 U.S. respondents who report holding stocks or funds, matching the investor-screened population in Experiment 1. Unlike Experiment 1, this experiment does not include WTP elicitation. I therefore use it to test whether the preference-structure results survive the expanded choice set, rather than to compare voting rules against WTP.

For the single-crossing diagnostic, I keep the ideology-based shareholder order and use the same left–right logic as in Experiment 1. The joint-support option D is treated as the most left-leaning alternative because it supports both shareholder proposals. This ordering is used only for the pairwise single-crossing checks; it is not used for the separability check below. With the same Left–Middle–Right ideology grouping as in Experiment 1, the four alternatives generate $\binom{4}{2} = 6$ unordered pairs. Applying the same six implication checks per pair as in the main three-group diagnostic yields $6 \times 6 = 36$ single-crossing requirements per firm scenario, or 180 requirements in total.

The four-alternative design also provides a simple way to connect the ranking task to the idea that multidimensional structure must be defined relative to a specified geometry or betweenness structure (Nehring and Puppe, 2007). In this 2×2 bundle space, I therefore test issue separability rather than impose a one-dimensional axis.²⁰ Issue separability imposes two consistency conditions, one for each proposal. It implies that the ranking over adding the social proposal should not depend on whether the climate proposal is also supported, so $A \succ C \iff D \succ B$. Likewise, the marginal ranking of the climate proposal should not depend on whether the social proposal is also supported, so $B \succ C \iff D \succ A$. For example, a shareholder who prefers adding the climate proposal when starting from the board line ($B \succ C$) should also prefer adding the climate proposal when the social proposal is already supported ($D \succ A$). However, failures of this diagnostic should not be interpreted mechanically as evidence of unstructured preferences, since they may instead reflect complementarities or

²⁰This diagnostic is specific to the 2×2 bundle space. I use Nehring and Puppe (2007) only to motivate the square-geometry benchmark, but I do not claim that the experiment tests generalized single-peakedness on arbitrary betweenness structures.

substitutability between the climate and social proposals.

With four alternatives there are $4! = 24$ possible strict rankings, but only one third of them (eight rankings) satisfy both issue-separability conditions, while one third of rankings satisfy exactly one condition.

5.2 Results

Single-crossing. The expanded choice set does not introduce any single-crossing violations. Across the five firm scenarios, 64 of the 180 implication checks are binding and none is violated.

Issue separability. Figure 4 shows that the share of rankings satisfying both separability conditions ranges from 60.6% to 70.2% across the five scenarios, with a pooled share of 64.5%. Where separability fails, it usually fails on only one dimension: 23.0% of pooled rankings satisfy exactly one condition, whereas only 12.5% satisfy neither. Adding the joint-support option therefore introduces some departures from strict separability, but a majority of rankings remains consistent with the natural 2×2 structure.

6 Experiment 7: A Six-Option Policy Menu and Board-Composition Module

Experiment 7 ($N = 1,921$) was conducted in January 2026 through Prolific and preregistered as AsPredicted #269073. Respondents were drawn from the same U.S. equity-investor pool as in Experiment 1. The preregistration also covered a participation-and-delegation module. Because that module addresses a different question, I focus on the six-option ranking and board-election modules in this paper.

Figure 4: Issue Separability in the 2×2 Choice Set

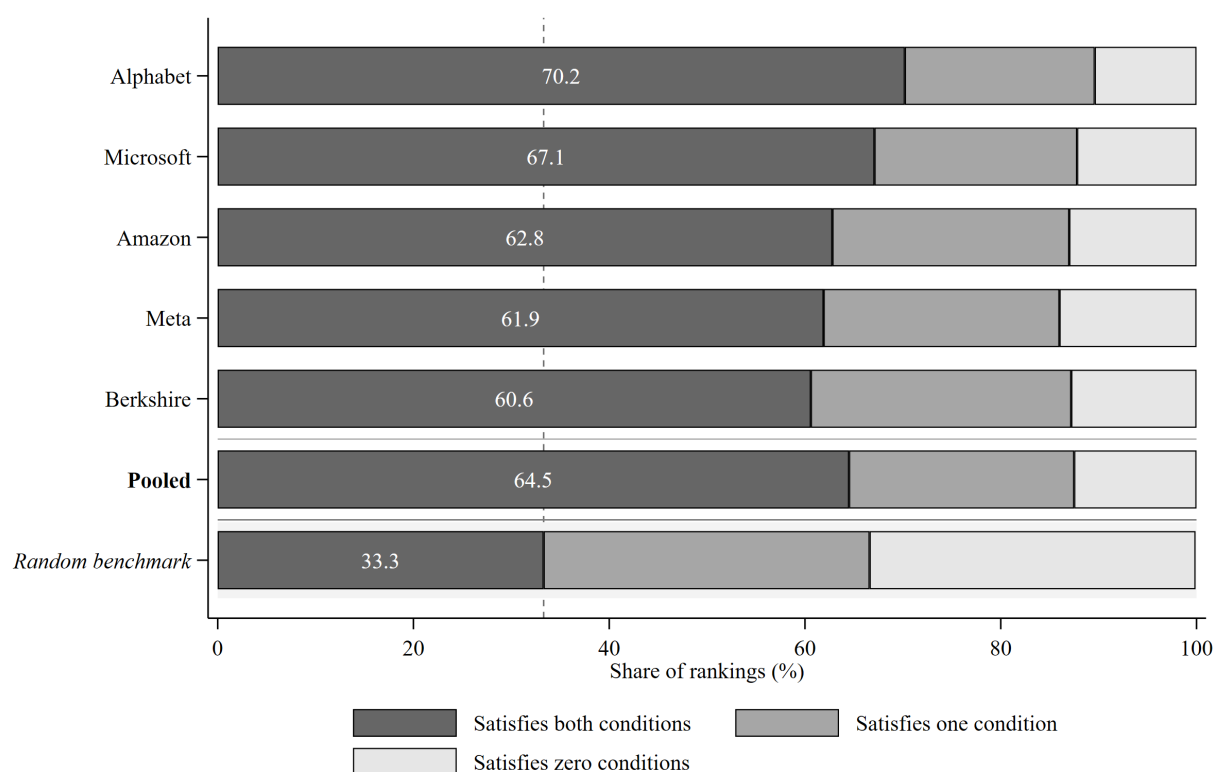


Figure note: The figure reports the share of respondent-scenario rankings in Experiment 6 that satisfy both, one, or none of the two issue-separability conditions in the 2×2 choice set. The *Random benchmark* assigns 33.3% to each category, since the 24 strict rankings are evenly split between satisfying both conditions, exactly one condition, and neither condition.

Alt text: The figure shows stacked bars for the five Experiment 6 scenarios and a pooled total. In every scenario, a large majority of rankings satisfy both issue-separability conditions, roughly 61–70%. Rankings with one violation are more common than rankings with two violations.

6.1 Part 1: A six-option policy menu

This experiment extends the choice set to six alternatives by allowing respondents to select policies that emphasize two objectives jointly. Respondents evaluate how an energy firm should weight three distinct corporate objectives: profit (C), a climate objective (B), and geopolitical stability (A).²¹ Respondents rank six policy options: the three core objectives and three combination options, each of which asks the firm to emphasize two objectives at once. For example, $A + B$ corresponds to a strategy that prioritizes both geopolitical stability and the climate objective, while $B + C$ prioritizes the climate objective together with profit. This design tests whether the structure documented above persists when the set of feasible alternatives is expanded. After completing the ranking task, respondents also provide cardinal evaluations of each of the six policy options on a 0–10 scale. Unlike the WTP measures in Experiments 1 and 3, these scores are not incentivized and should not be read as dollar values. They still provide a useful cardinal benchmark for comparing voting rules.

Policy ordering and single-crossing. I again test for single-crossing with respect to political ideology, now over the six policy options. This requires assigning a left–right orientation to the policy options, and I place profit (C) on the right and the climate objective (B) on the left. The combination options are naturally interpreted as intermediate compromises, since the instructions make clear that placing greater emphasis on one goal typically requires placing less on the others. Given this orientation, the mixed options fall between the two extremes, leaving only the relative position of $B + C$ and A ambiguous. I therefore report the diagnostic under both of these orderings.²² Using the same three ideology groups and pairwise-majority diagnostic as in Experiments 1–5, I then test single-crossing in the six-option setting. With six alternatives, there are $\binom{6}{2} = 15$ unordered pairs for any given policy ordering, and each pair yields six implication requirements, for a total of 90 requirements. Since the two plausible orderings differ only in the relative position of A and $B + C$, 84 of the

²¹Unlike the social/non-climate alternative in scenario E1 in Experiment 3, geopolitical stability here is a standalone objective rather than a compromise position.

²²The two orderings are $B-(A+B)-A-(B+C)-(A+C)-C$ and $B-(A+B)-(B+C)-A-(A+C)-C$.

90 requirements are common to both orderings. The remaining pairwise comparison contributes six ordering-specific requirements under each orientation, yielding $84 + 6 + 6 = 96$ distinct requirements when both orderings are considered jointly.

6.1.1 Results

Single-crossing. 34 of the 96 single-crossing requirements are binding and 62 are non-binding, and there are zero violations. Pooling the single-crossing evidence across all seven experiments strengthens the global randomization test. Once the richer four- and six-alternative environments of Experiments 6 and 7 are included as well, the zero-violation result spans 272 binding implications across 33 scenarios, and the permutation p-value falls from 0.012 to 0.002 (Online Appendix Table A4).

Voting rules and score-based performance. I next compare voting-rule outcomes to the score-based benchmark. Let μ_j denote the mean 0–10 evaluation of option j , and let $\mu^* = \max_j \mu_j$ denote the highest mean score. For a rule that selects option j , I define score-based loss as $100 \times (\mu^* - \mu_j) / \mu^*$.

The option $B + C$ maximizes mean scores, with $\mu^* = 7.59$, and is also the unique Condorcet winner. Borda and IRV select this option as well. By contrast, plurality selects $A + B$, which has a lower mean score of 6.97.

To assess robustness, I implement a respondent-level bootstrap with 5,000 replications, as in the analysis underlying Experiments 1 to 5. Plurality selects the score-maximizing option in only 26% of draws. By contrast, Borda, Condorcet, and IRV almost always select the score-maximizing option. As a result, the bootstrap mean loss is 5.9% under plurality and essentially zero under the other voting rules. The mechanism is the same as before, as plurality uses only first-place support and ignores broader compromise support. Expanding the choice set can make this mechanism more pronounced if first-choice votes are spread across more options, allowing an alternative to win plurality with a relatively small vote share.

Table 3: Voting-Rule Performance in the Six-Option Menu

Rule	Point-estimate winner	Share selecting non-score-maximizing option (%)	Mean score-based loss (%) [95% interval]
Plurality	A+B	73.9	5.9 [0.0, 9.4]
Borda	B+C	0.0	0.0 [0.0, 0.0]
Condorcet	B+C	0.0	0.0 [0.0, 0.0]
IRV	B+C	0.3	0.0 [0.0, 0.0]

Notes: The point-estimate winner is the option selected in the full sample. A denotes geopolitical stability, B the climate objective, and C the profit-oriented objective; combined alternatives such as A+B and B+C combine the corresponding objectives. The score-maximizing option is B+C (the alternative with the highest mean 0–10 evaluation score). The table reports the share of respondent-level bootstrap replications in which each rule selects a non-score-maximizing alternative and the corresponding mean score-based loss; losses are computed only when the rule yields a unique winner.

6.2 Part 2: Board module

The second part of the survey studies multi-option board elections, where shareholders can combine management and dissident nominees on the same ballot.

I consider a simplified board-composition scenario inspired by the Exxon versus Engine No. 1 proxy contest in 2021, with four open board seats and eight candidates, of which four are company nominees and four activist nominees.²³ The activist nominees are shown using the actual names of the Engine No. 1 nominees, together with a short description of the perspective each would bring to the board. The company nominees are labeled Company Nominee A to D. The module elicits preferences over board composition, that is, how much activist representation investors want, rather than over eight specific individuals. I therefore keep the incumbent nominees generic, while using the activist nominees' actual

²³The actual contest predated the SEC's universal-proxy compliance date and involved a larger board. I use it because it provides a real activist slate and a real compromise recommendation, while allowing the experiment to isolate preferences over board composition in a simplified setting. The board setting is technically a committee-choice problem rather than a standard single-winner problem. I do not attempt to characterize optimal multiwinner rules here.

names and perspectives to preserve the key differences among the activist nominees. Naming the incumbent nominees would have introduced candidate-level variation unrelated to the company-versus-activist trade-off.

Respondents are asked to select up to four candidates and are told that, in this stylized election, the four candidates receiving the most votes are elected. After the candidate-selection task, respondents are asked to rank three bundles: a *Company* bundle with zero activist directors, a *Compromise* bundle with two activist directors, and an *Activist* bundle with four activist directors.²⁴

Figure 5: Voter-Intended Board Composition

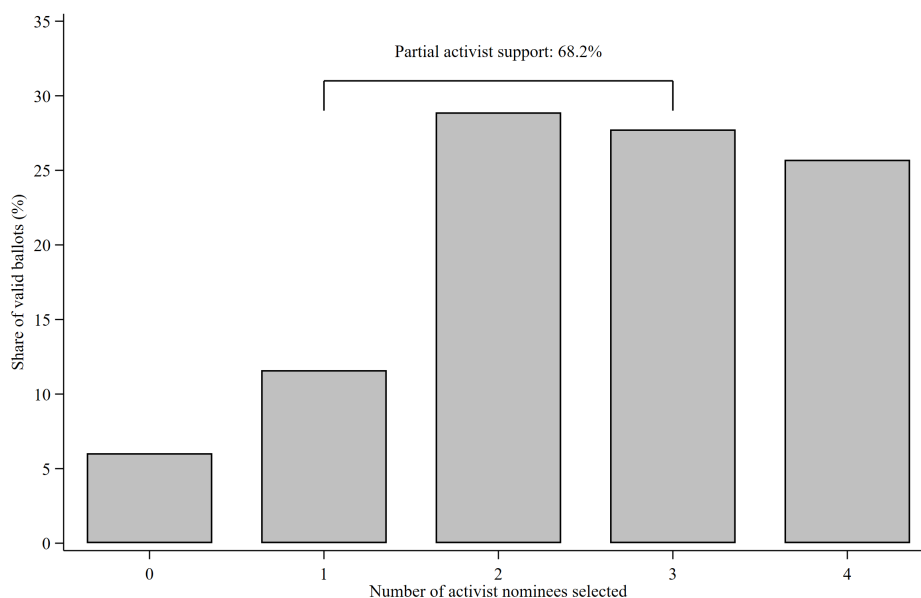


Figure note: The figure shows the distribution of the number of activist nominees selected on respondents' candidate-level ballots in Experiment 7.

Alt text: The figure is a bar chart showing how many activist nominees respondents selected for four open board seats. Most ballots choose an interior board composition with one to three activist nominees, with the tallest bar at two activists. Ballots with zero or four activists are less common.

Results. Figure 5 shows that the preferences over board composition are not well described as a binary company-versus-activist split. Among respondents casting a valid ballot, only 31.8% choose an extreme ballot (either zero or four activist nominees), whereas 68.2% select between one and three activist nominees. The modal ballot corresponds to exactly two activist

²⁴The compromise bundle is not arbitrary, as Glass Lewis recommended support for these two activist nominees only (Reuters, 2021).

directors, chosen by 28.9% of respondents. To implement plurality-at-large, I count the votes received by each of the eight candidates and treat the four candidates with the most votes as elected. In the observed sample, those four candidates are all activist nominees, so the rule selects the all-activist slate. Thus, candidate-level aggregation produces an extreme board even though most respondents do not cast an extreme ballot.

The bundle rankings likewise show that respondents favor a mixed board rather than either extreme. The *Compromise* bundle is the modal first choice, receiving 49.8% of first-place rankings, compared with 20.8% for the *Company* bundle and 29.5% for the *Activist* bundle. Preferences are also highly structured. 94.4% of respondents are single-peaked on the natural Company–Compromise–Activist axis, and the ideology-based single-crossing diagnostic yields seven binding implications and zero violations. The *Compromise* bundle also defeats both alternatives in pairwise majority voting, and plurality, Borda, Condorcet, and IRV applied to the bundle rankings all select the *Compromise* bundle.

The board module therefore illustrates a concrete example of an aggregation failure: most investors here choose partial activist representation, but candidate-level plurality elects the all-activist slate.

7 Experiments 8–10: Cyclic Client-Preference Profiles

Experiments 8 to 10 turn to cases in which the preference structure documented above is absent by construction. Real-world investors may encounter cyclical preference profiles that do not yield a clear winner to follow, and these experiments analyze how people reason in such cases.

7.1 Experiment 8: Design

In August 2024, I surveyed $N = 16$ Scandinavian mutual-fund managers and institutional investors, managing an average of more than \$1 billion in assets.²⁵ Because the survey was anonymous, I cannot verify for each respondent whether they personally execute proxy votes or instead work in organizations where voting is handled by a dedicated stewardship team. The responses should therefore be read as evidence on how investment professionals reason about aggregation in cyclic client-preference profiles, without distinguishing cleanly between fiduciary-duty reasoning and personal normative views about aggregation.

I then presented respondents with a stylized analogue of the profit-climate-geopolitical-stability trade-off from Scenario E1. They were asked to choose among three alternatives: (i) C : exporting coal as long as it remains profitable, (ii) B : ceasing all exports, and (iii) A : exporting coal only when it supports geopolitical stability.²⁶

Respondents were then informed that three clients (Anne, Kari and Knut), each holding an equal stake in the fund, had conflicting preference rankings. Anne had ranking $C \succ A \succ B$, Kari had ranking $A \succ B \succ C$, while Knut had ranking $B \succ C \succ A$. By construction, these rankings do not produce a Condorcet winner, as pairwise majority ranks C above A , A above B , and B above C . On the profit–geopolitical-stability–climate axis, A is the middle alternative. Knut’s ranking places this middle alternative last, so his preferences violate single-peakedness, which contributes to making the clients’ preferences cyclic.

First, participants were asked: “How would you vote on behalf of your three clients in this situation?”. They were given four response options: vote for A , vote for B , vote for C , or abstain from voting/unsure.

Next, they were asked: “Which of the following strategies would you use to decide how to vote on behalf of the owners in such cases?”. They were allowed to select more than one

²⁵As data collection relied on direct personal contact with potential respondents and the sample size was unknown, preregistration was not conducted. Respondents had previously answered a different survey as part of a separate research project.

²⁶For consistency with the previous sections, I relabel the alternatives as A , B , and C in the text, while the respondent-facing labels are reported in Online Appendix E. Experiments 8 and 10 also collected open-ended justifications, but these responses are not analyzed in this paper.

strategy from the following alternatives:

- *“If it is difficult to determine what the majority truly prefers, it feels right to vote for the option that provides the highest profitability.”*
- *“If it is difficult to determine what the majority truly prefers, I would abstain from voting.”*
- *“If it is difficult to determine what the majority truly prefers, I would choose the option I personally prefer.”*
- *“If it is difficult to determine what the majority truly prefers, I would try to assess the strength of the owners’ preferences and choose the option with the highest average.”*

7.2 Experiment 9: Design

Experiment 9 repeats this procedure in a Norwegian general-population sample. The experiment was conducted in March and April 2026, with data collection managed by Norstat Norway, and was pre-registered as AsPredicted #276586. The sample consists of 503 respondents recruited to be representative of the Norwegian adult population. Respondents were asked to imagine acting as a fund manager on behalf of three equally invested clients with the same cyclic preference profile as in Experiment 8. Respondents answered the same vote-choice and aggregation-principle questions as in Experiment 8, but not the open-ended justification question.

7.3 Experiment 10: Design

Experiment 10 was conducted in January 2025 using Prolific, with a sample of $N = 969$ respondents, broadly representative of the U.S. population by political affiliation, gender, and age. Data collection was preregistered (AsPredicted #206840), with details available in Online Appendix F. Participants saw the same hypothetical mutual-fund delegation scenario and the same vote-choice and aggregation-principle questions as in Experiments 8 and 9,

adapted for a U.S. audience, with the clients named Anne, Mary, and Peter. As in Experiment 8, respondents also answered an open-ended question justifying their vote.

7.4 Results

The main result is that, once majority rule no longer identifies a stable winner, respondents split across several voting responses. In the practitioner sample in Experiment 8, 44 percent of respondents abstain or report being unsure, while 31 percent choose the compromise alternative, 13 percent each choose the profit alternative and the no-export/climate alternative. In Experiment 9, Norwegian respondents divide almost evenly between the compromise, profit, and abstention, at 32, 28, and 28 percent, respectively, while only 12 percent choose no export. In Experiment 10, U.S. respondents divide mainly between profit and the compromise, at 38 and 35 percent, while 17 percent abstain and 9 percent choose no export. In the U.S. sample, vote choices differ by political affiliation: 55 percent of Republicans choose the profit alternative, compared with 26 percent of Democrats, while Democrats are more likely than Republicans to choose the compromise or no-export alternatives. Online Appendix Table A11 reports the full distributions.

In the practitioner sample, 38 percent endorse average/intensity-based reasoning, 25 percent endorse the profit-default principle, 25 percent endorse abstaining, and 13 percent endorse choosing their own preferred alternative. In the larger general population samples, profit maximization and average/intensity-based reasoning both attract substantial support. In Experiments 9 and 10, 42 and 38 percent endorse the profit-default principle, while 35 and 30 percent endorse average/intensity-based reasoning. These stated principles line up with respondents' vote choices in the cyclic profile. For example, in Experiments 9 and 10, respondents who endorse the profit-default principle choose the profit alternative in 55 and 78 percent of cases, respectively. The alignment tests reported in Online Appendix Table A11, Panel C, find a positive association between stated principles and vote choices in both general population samples ($p < 0.001$).

In the vote-choice task, the Norwegian general-population sample (Experiment 9) lies between the two other samples. For stated aggregation principles, the two general-population samples are more alike than either is to the practitioner sample. The practitioner sample is small, so the comparison with Experiment 8 is imprecise, but the pattern suggests a practitioner–general-population difference, not nationality alone.

8 Conclusion

This paper suggests that shareholder disagreement may be more structured than its multi-dimensional nature might suggest. In the settings studied here, preferences are structured enough for majority-based aggregation to remain coherent, allowing median-voter logic to re-emerge even when owners disagree about multiple issues. However, decentralizing voting authority to owners with structured preferences does not guarantee that the selected outcome will fully reflect investor preferences. In multi-option choices, the voting rule matters for how preferences are translated into outcomes. The experiments show that plurality rule is especially vulnerable because it uses only first-place support, while ranking-based rules more closely track a cardinal benchmark.

However, there are also several limitations to the scope of the findings. The experiments deliberately isolate the preference component of shareholder voting using surveys, which makes it possible to study preference structure, but also abstracts from other elements influencing equilibrium voting such as information acquisition and strategic behavior more generally. Furthermore, the paper studies settings where shareholder ballots are translated into pre-defined voting strategies, which leaves more complex settings for future work. Nevertheless, if the preference structure found here also holds more generally, coherent aggregation of preferences may remain possible even under multidimensional disagreement, especially when voting rules use the full ranking rather than first-place support alone.

References

- Alphabet Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Stockholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001308179-25-000511. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001193125-25-139948. Accessed 2025-12-18.
- Amazon.com, Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Shareholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001104659-25-033442. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001104659-25-052014. Accessed 2025-12-18.
- Ambuehl, Sandro and B Douglas Bernheim**, “Interpreting the will of the people: a positive analysis of ordinal preference aggregation,” Technical Report, National Bureau of Economic Research 2021.
- Apple Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Shareholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001308179-25-000008. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC), EDGAR February 2025. Filed February 25, 2025. SEC Accession No. 0001140361-25-005876.
- Arrow, Kenneth J**, *Social choice and individual values*, Vol. 12, John Wiley & Sons, 1951.
- Bar-Gill, Oren**, “Willingness to Pay: A Welfarist Reassessment,” *Yale J. on Reg.*, 2021, 38, 503.
- Barber, Brad M, Adair Morse, and Ayako Yasuda**, “Impact investing,” *Journal of Financial Economics*, 2021, 139 (1), 162–185.
- Bassi, Anna**, “Voting Systems and Strategic Manipulation: An Experimental Study,” *Journal of Theoretical Politics*, 2015, 27 (1), 58–85.
- Bauer, Rob, Tobias Ruof, and Paul Smeets**, “Get real! Individuals prefer more sustainable investments,” *The Review of Financial Studies*, 2021, 34 (8), 3976–4043.
- Berkshire Hathaway Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Shareholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001193125-25-054877. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001193125-25-113900. Accessed 2025-12-18.

- Black, Duncan**, “On the rationale of group decision-making,” *Journal of Political Economy*, 1948, 56 (1), 23–34.
- BlackRock**, “Empowering Investors through BlackRock Voting Choice,” 2026. Data as of March 31, 2026; accessed May 27, 2026.
- Bolton, Patrick, Tao Li, Enrichetta Ravina, and Howard Rosenthal**, “Investor ideology,” *Journal of Financial Economics*, 2020, 137 (2), 320–352.
- Bonnefon, Jean-François, Augustin Landier, Parinitha Sastry, and David Thesmar**, “The moral preferences of investors: Experimental evidence,” *Journal of Financial Economics*, 2025, 163, 103955.
- Bouton, Laurent, Micael Castanheira, and Aniol Llorente-Saguer**, “Divided Majority and Information Aggregation: Theory and Experiment,” *Journal of Public Economics*, 2016, 134, 114–128.
- Brav, Alon, Matthew Cain, and Jonathon Zytnick**, “Retail shareholder participation in the proxy process: Monitoring, engagement, and voting,” *Journal of Financial Economics*, 2022, 144 (2), 492–522.
- , **Tao Li, Dorothy S Lund, and Zikui Pan**, “The proxy voting choice revolution,” *European Corporate Governance Institute-Law Working Paper*, 2025, (875).
- Broadcom Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Stockholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001193125-25-044112. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC), EDGAR April 2025. Filed April 22, 2025. SEC Accession No. 0001730168-25-000037.
- Broccardo, Eleonora, Oliver Hart, and Luigi Zingales**, “Exit versus voice,” *Journal of Political Economy*, 2022, 130 (12), 3101–3145.
- Brodback, Daniel, Nadja Guenster, Sébastien Pouget, and Ruichen Wang**, “Investor Valuation for Socially Responsible Assets: A Willingness to Pay Experiment,” *Management Science*, 2025.
- Bubb, Ryan and Emiliano M Catan**, “The party structure of mutual funds,” *The Review of Financial Studies*, 2022, 35 (6), 2839–2878.
- Çelebi, Can, Christine Exley, Soeren Harrs, Hannu Kivimaki, Marta Serra-Garcia, and Jeffrey Yusof**, “Mission Possible: The Collection of High-Quality Data,” CESifo Working Paper 12535, CESifo 2026.
- Dagens Næringsliv**, “Fisk trues av elektromagnetisk stråling fra havvindanlegg,” 2023. Accessed: 2024-11-05.
- Döttling, Robin, Doron Levit, Nadya Malenko, and Magdalena Rola-Janicka**, “Voting on Public Goods: Citizens vs Shareholders,” *The Review of Financial Studies*, 2026, p. hhag051.

- Duffy, John, Daniel Friedman, Jean Paul Rabanal, and Olga Rud**, “Trade, Voting, and Firm Policies: Theory and Evidence,” *Available at SSRN 5208596*, 2025.
- Engelmann, Dirk, Hans Peter Grüner, Timo Hoffmann, and Alex Possajenikov**, “Minority Protection in Voting Mechanisms—Experimental Evidence,” Technical Report, Discussion Paper 2023.
- Equinor**, “New measures to maintain high gas exports to Europe,” 2022. Accessed: 2024-11-05.
- , “Havvind i Norge,” 2024. Accessed: 2024-11-05.
- , “Annual General Meeting,” <https://www.equinor.com/about-us/annual-general-meeting> 2026. Accessed May 13, 2026.
- Ericson, Keith Marzilli**, “What Do Shareholders Want? Consumer Welfare and the Objective of the Firm,” *Management Science*, 2026. Published online April 8, 2026.
- Europower**, “Elektrifisering vil øke strømgjengen med 1 milliard i året i Midt-Norge,” 2024. Accessed: 2024-11-05.
- FinanceCharts**, “Biggest Companies in the World for January 2026,” <https://www.financecharts.com/posts/id/177094/biggest-companies-in-the-world-for-january-2026> January 2026.
- Forsythe, Robert, Thomas Rietz, Roger Myerson, and Robert Weber**, “An Experimental Study of Voting Rules and Polls in Three-Candidate Elections,” *International Journal of Game Theory*, 1996, 25 (3), 355–383.
- Friedman, Milton**, “A Friedman Doctrine: The Social Responsibility of Business Is to Increase Its Profits,” *The New York Times Magazine*, September 1970.
- Gans, Joshua S and Michael Smart**, “Majority voting with single-crossing preferences,” *Journal of Public Economics*, 1996, 59 (2), 219–237.
- Gantchev, Nickolay and Mariassunta Giannetti**, “The Costs and Benefits of Shareholder Democracy: Gadflies and Low-Cost Activism,” *The Review of Financial Studies*, 2021, 34 (12), 5629–5675.
- Gibbard, Allan**, “Manipulation of Voting Schemes: a General Result,” *Econometrica*, 1973, pp. 587–601.
- Gibson Dunn**, “Shareholder Proposal Developments During the 2025 Proxy Season,” 2025. Accessed June 5, 2026.
- Giglio, Stefano, Matteo Maggiori, Johannes Stroebe, Zhenhao Tan, Stephen Utkus, and Xiao Xu**, “Four facts about ESG beliefs and investor portfolios,” *Journal of Financial Economics*, 2025, 164, 103984.
- Glass Lewis**, “Glass Lewis Leads Change in Proxy Voting Practices,” <https://www.glasslewis.com/news-release/glass-lewis-leads-change-in-proxy-voting-practices> October 2025.

- Gollier, Christian and Sébastien Pouget**, “Investment Strategies and Corporate Behaviour with Socially Responsible Investors: A Theory of Active Ownership,” *Economica*, 2022, 89 (356), 997–1023.
- Gormley, Todd A., Manish Jha, and Meng Wang**, “The Politicization of Social Responsibility,” NBER Working Paper 32869, National Bureau of Economic Research 2024.
- Granic, Dura-Georg**, “The Problem of the Divided Majority: Preference Aggregation under Uncertainty,” *Journal of Economic Behavior & Organization*, 2017, 133, 21–38.
- Hart, Oliver and Luigi Zingales**, “Companies Should Maximize Shareholder Welfare Not Market Value,” *Journal of Law, Finance, and Accounting*, 2017, 2 (2), 247–274.
- , **David Thesmar, and Luigi Zingales**, “Private sanctions,” *Economic Policy*, 2024, 39 (117), 203–268.
- Hartzmark, Samuel M and Abigail B Sussman**, “Do Investors Value Sustainability? A Natural Experiment Examining Ranking and Fund Flows,” *The Journal of Finance*, 2019, 74 (6), 2789–2837.
- He, Yazhou Ellen, Bige Kahraman, and Michelle Lowry**, “ES Risks and Shareholder Voice,” *The Review of Financial Studies*, 2023, 36 (12), 4824–4863.
- Heeb, Florian, Julian F Kölbel, Falko Paetzold, and Stefan Zeisberger**, “Do Investors Care about Impact?,” *The Review of Financial Studies*, 2023, 36 (5), 1737–1787.
- Herrmann, Nathan D, John M McInnis, Brian Monsen, and Laura T Starks**, “Decentralizing Voting Power,” Available at SSRN 5007107, 2024.
- Hong, Harrison and Leonard Kostovetsky**, “Red and Blue Investing: Values and Finance,” *Journal of Financial Economics*, 2012, 103 (1), 1–19.
- Hu, Edwin, Nadya Malenko, and Jonathon Zytnick**, “Custom Proxy Voting Advice,” NBER Working Paper 32559, National Bureau of Economic Research June 2024.
- Igersheim, Herrade, François Durand, Aaron Hamlin, and Jean-François Laslier**, “Comparing Voting Methods: 2016 US Presidential Election,” *European Journal of Political Economy*, 2022, 71, 102057.
- Iliev, Peter and Michelle Lowry**, “Are Mutual Funds Active Voters?,” *The Review of Financial Studies*, 2015, 28 (2), 446–485.
- Iliewa, Zwetelina, Elisabeth Kempf, and Oliver G. Spalt**, “Corporate Actions as Moral Issues,” NBER Working Paper 33749, National Bureau of Economic Research May 2025.
- Jensen, Michael C**, “Value Maximization, Stakeholder Theory, and the Corporate Objective Function,” *Business Ethics Quarterly*, 2002, pp. 235–256.
- Kakhbod, Ali, Uliana Loginova, Andrey Malenko, and Nadya Malenko**, “Advising the Management: A Theory of Shareholder Engagement,” *The Review of Financial Studies*, 2023, 36 (4), 1319–1363.

- Krueger, Philipp, Zacharias Sautner, and Laura T Starks**, “The Importance of Climate Risks for Institutional Investors,” *The Review of Financial Studies*, 2020, 33 (3), 1067–1111.
- Lachat, Romain and Jean-François Laslier**, “Alternatives to Plurality Rule for Single-Winner Elections: When Do They Make a Difference?,” *European Journal of Political Economy*, 2024, 81, 102505.
- Lalley, Steven P. and E. Glen Weyl**, “Quadratic Voting: How Mechanism Design Can Radicalize Democracy,” *AEA Papers and Proceedings*, 2018, 108, 33–37.
- Levit, Doron and Nadya Malenko**, “Nonbinding Voting for Shareholder Proposals,” *The Journal of Finance*, 2011, 66 (5), 1579–1614.
- , —, and **Ernst Maug**, “Trading and shareholder democracy,” *The Journal of Finance*, 2024, 79 (1), 257–304.
- , —, and —, “The Voting Premium,” *The Journal of Finance*, 2026, 81 (3), 1321–1375.
- Li, Sophia Zhengzi, Ernst Maug, and Miriam Schwartz-Ziv**, “When Shareholders Disagree: Trading after Shareholder Meetings,” *The Review of Financial Studies*, 2022, 35 (4), 1813–1867.
- Malenko, Andrey and Nadya Malenko**, “Proxy Advisory Firms: The Economics of Selling Information to Voters,” *The Journal of Finance*, 2019, 74 (5), 2441–2490.
- and —, “Voting Choice,” NBER Working Paper 31636, National Bureau of Economic Research August 2023.
- , —, and **Anton Tsoy**, “Fragmentation of Shareholder Power,” ECGI Finance Working Paper 1129/2026, European Corporate Governance Institute 2026.
- , —, and **Chester S. Spatt**, “Creating Controversy in Proxy Voting Advice,” *The Journal of Finance*, 2025, 80 (4), 2303–2354.
- Malenko, Nadya and Yao Shen**, “The Role of Proxy Advisory Firms: Evidence from a Regression-Discontinuity Design,” *The Review of Financial Studies*, 2016, 29 (12), 3394–3427.
- Maskin, Eric**, “Borda’s rule and Arrow’s Independence Condition,” *Journal of Political Economy*, 2025, 133 (2), 385–420.
- Matvos, Gregor and Michael Ostrovsky**, “Heterogeneity and Peer Effects in Mutual Fund Proxy Voting,” *Journal of Financial Economics*, 2010, 98 (1), 90–112.
- Maug, Ernst and Kristian Rydqvist**, “Do Shareholders Vote Strategically? Voting Behavior, Proposal Screening, and Majority Rules,” *Review of Finance*, 2009, 13 (1), 47–79.
- McCahery, Joseph A., Zacharias Sautner, and Laura T. Starks**, “Behind the Scenes: The Corporate Governance Preferences of Institutional Investors,” *The Journal of Finance*, 2016, 71 (6), 2905–2932.

- Meirowitz, Adam, Shaoting Pi, and Matthew C Ringgenberg**, “Voting for Socially Responsible Corporate Policies,” *Available at SSRN 4057792*, 2024.
- Meta Platforms, Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Stockholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001326801-25-000040. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001326801-25-000090. Accessed 2025-12-18.
- Microsoft Corporation**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Shareholders Meeting,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001193125-25-245150. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Shareholders Meeting,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001193125-25-311196. Accessed 2025-12-18.
- Montagnes, B Pablo, Zachary Peskowitz, and Suhas A Sridharan**, “How Well Do Voting Choice Policies Represent Public and Investor Preferences?,” 2024.
- Morgan, John and Justin Tumlinson**, “Corporate provision of public goods,” *Management Science*, 2019, 65 (10), 4489–4504.
- Næss, Ole-Andreas Elvik**, “Owner Support for Green Shareholder Voting and Divestment,” *Management Science*, 2025. Published online September 12, 2025.
- NBIM**, “About the Fund,” <https://www.nbim.no/en/the-fund/about-the-fund/> 2024. Accessed 2026-05-27.
- Nehring, Klaus and Clemens Puppe**, “The structure of strategy-proof social choice—Part I: General characterization and possibility results on median spaces,” *Journal of Economic Theory*, 2007, 135 (1), 269–305.
- Norges vassdrags- og energidirektorat**, “Kunnskapsgrunnlag om virkninger av havvind: Fiskeri,” 2023. Accessed: 2024-11-05.
- NRK**, “Rapport: Elektrifisering av sokkelen har massiv klimaeffekt,” 2023. Accessed: 2024-11-05.
- NVIDIA Corporation**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Stockholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001045810-25-000095. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC), EDGAR July 2025. Filed July 1, 2025. SEC Accession No. 0001045810-25-000179.
- Peer, Eyal, David Rothschild, Andrew Gordon, Zak Evernden, and Ekaterina Damer**, “Data Quality of Platforms and Panels for Online Behavioral Research,” *Behavior Research Methods*, 2022, 54 (4), 1643–1662.

- Posner, Eric A and E Glen Weyl**, “Voting squared: Quadratic voting in democratic politics,” *Vand. L. Rev.*, 2015, 68, 441.
- Prolific**, “Participant Vetting and Identifiers,” <https://researcher-help.prolific.com/en/articles/449610-participant-vetting-and-identifiers> December 2025. Accessed May 28, 2026.
- Reuters**, “Advisory firm Glass Lewis backs two dissident nominees in Exxon battle,” May 2021. Accessed 2026-03-29.
- Revolut**, “Voting in meetings for stockholders,” <https://help.revolut.com/en-NO/help/wealth/stocks/corporate-events/voting-in-meetings-for-stockholders/> 2026. Accessed May 13, 2026.
- Riedl, Arno and Paul Smeets**, “Why Do Investors Hold Socially Responsible Mutual Funds?,” *The Journal of Finance*, 2017, 72 (6), 2505–2550.
- Satterthwaite, Mark Allen**, “Strategy-proofness and Arrow’s conditions: Existence and correspondence theorems for voting procedures and social welfare functions,” *Journal of Economic Theory*, 1975, 10 (2), 187–217.
- SEC**, “Universal Proxy,” Final rule, Release No. 34-93596 2021. Accessed May 27, 2026.
- SSB**, “Hva er vanlig formue?,” *Statistics Norway*, 2024. Accessed: 2024-05-31.
- Starks, Laura T.**, “Presidential Address: Sustainable Finance and ESG Issues—Value versus Values,” *The Journal of Finance*, 2023, 78 (4), 1837–1872.
- Sunstein, Cass R.**, “Willingness to Pay vs. Welfare,” *Harvard Law & Policy Review*, 2007, 1, 303–330.
- Tesla, Inc.**, “Definitive Proxy Statement (Schedule 14A) – 2025 Annual Meeting of Stockholders,” U.S. Securities and Exchange Commission (SEC) EDGAR 2025. Accession No. 0001104659-25-090866. Accessed 2025-12-18.
- , “Form 8-K (Item 5.07) – Voting Results of the 2025 Annual Meeting,” U.S. Securities and Exchange Commission (SEC), EDGAR November 2025. Filed November 7, 2025. SEC Accession No. 0001104659-25-108507.
- Van der Straeten, Karine, Jean-François Laslier, Nicolas Sauger, and André Blais**, “Strategic, sincere, and heuristic voting under four election rules: an experimental study,” *Social Choice and Welfare*, 2010, 35 (3), 435–472.
- Vanguard**, “Vanguard Adds 17 New Funds to Vanguard Investor Choice,” 2026. Press release, February 25, 2026; accessed May 27, 2026.
- Weber, Matthias**, “Choosing the rules: Preferences over voting systems for assemblies of representatives,” *Journal of Economic Behavior & Organization*, 2020, 174, 420–434.
- Zingales, Luigi, Oliver Hart, and Helene E Landemore**, “How To Implement Shareholder Democracy,” *George J. Stigler Center for the Study of the Economy & the State Working Paper*, 2025, (350).

Zytnick, Jonathon, “Do Mutual Funds Represent Individual Investors?,” *NYU Law and Economics Research Paper*, 2024, (21-04). Date written: October 18, 2024; last revised October 30, 2024.

Summary of the Online Appendix

Section A presents additional tables, while Section B describes the algorithm for generating scenarios in Experiments 1 and 2. Section C provides supplementary results, while Section D provides robustness tests. Section E outlines the experimental instructions, and Section F provides the pre-analysis plans.

A Additional tables

Table A1: Distribution of self-reported investment values across experiments.

Investment Value	Exp. 1 (%)	Exp. 3 (%)	Exp. 6 (%)	Exp. 7 (%)
\$0	5.43	25.64	5.57	4.48
\$1 – \$10,000	27.20	30.56	31.55	29.10
\$10,000 – \$100,000	29.46	19.44	29.07	29.10
\$100,000 – \$1,000,000	27.13	15.30	25.26	26.60
More than \$1,000,000	8.59	4.59	5.88	7.03
Prefer not to say	2.20	4.47	2.68	3.70
Average (USD)	258,304	148,937	221,176	243,022

Note: Average investment values are computed from the raw response data using category midpoints (\$0, \$5,000, \$55,000, \$550,000). The top category (“More than \$1,000,000”) is assigned a value of \$1,000,000. “Prefer not to say” responses are excluded from the average calculations. Experiment 3 is conducted among representative Americans, while Experiments 1, 6, and 7 were recruited from Prolific pools of respondents who had previously reported investing in individual stocks, mutual funds, or ETFs. Because the survey question referred to investments in stocks and mutual funds, \$0 responses may include ETF-only investors as well as ordinary measurement error. Entries are percentages.

Table A2: Three-Outcome Ranking Distributions (shares in %)

Panel A. Experiments 1 and 2										
Ranking	Experiment 1					Experiment 2				
	Alphabet	Microsoft	Amazon	Meta	Berkshire	Alphabet	Microsoft	Amazon	Meta	Berkshire
A $\succ$ B $\succ$ C	41.5	34.7	46.0	32.6	20.8	61.8	62.3	60.5	54.4	34.7
A $\succ$ C $\succ$ B	12.6	12.3	19.5	9.1	11.5	8.0	8.3	8.3	7.4	6.8
B $\succ$ A $\succ$ C	17.4	22.3	15.7	26.2	33.3	17.3	17.6	21.4	25.6	35.8
B $\succ$ C $\succ$ A	2.7	2.7	1.1	5.8	7.6	1.8	1.4	2.0	2.7	8.5
C $\succ$ A $\succ$ B	20.3	21.8	14.9	15.7	18.7	6.9	6.8	4.8	5.6	7.2
C $\succ$ B $\succ$ A	5.5	6.2	2.8	10.6	8.0	4.2	3.5	3.0	4.2	7.0
N	1456	1456	1456	1456	1456	3200	3200	3199	3200	3200

Panel B. Experiments 3, 4, and 5																	
Ranking	Experiment 3								Experiment 4						Experiment 5		
	H1	H2	H3	H4	E1	E2	E3	E4	B1	B2	B3	B4	B5	B6	N1	N2	N3
A $\succ$ B $\succ$ C	29.5	17.6	39.5	35.8	20.3	23.1	19.0	22.3	11.0	11.1	5.8	18.9	16.3	12.7	25.7	13.4	28.1
A $\succ$ C $\succ$ B	22.8	9.9	26.0	36.9	17.1	11.7	17.7	21.3	11.2	7.9	2.9	11.9	16.7	9.7	12.7	6.1	14.3
B $\succ$ A $\succ$ C	9.9	27.7	10.5	10.2	30.5	27.0	26.3	18.6	12.5	16.3	14.8	12.5	13.2	15.5	24.9	26.1	20.4
B $\succ$ C $\succ$ A	6.9	13.6	5.8	2.8	5.0	13.3	15.2	13.4	12.7	9.7	15.0	5.7	7.1	10.3	8.1	16.2	8.2
C $\succ$ A $\succ$ B	20.3	16.0	9.8	11.5	23.9	13.3	13.8	12.4	32.9	28.0	14.6	35.1	33.6	27.3	18.5	17.0	18.1
C $\succ$ B $\succ$ A	10.7	15.2	8.3	2.9	3.2	11.7	8.0	12.1	19.7	27.0	46.8	15.9	13.1	24.6	10.1	21.2	11.0
N	1226	1197	1148	1192	1235	1183	1207	1211	1469	1469	1469	1469	1469	1469	1348	1301	1324

Notes: Each cell reports the share of respondents with the given strict ranking in that scenario. The N row is scenario-specific and counts valid strict rankings, so it can be below the experiment-level respondent total when a scenario was not shown or a ranking response is missing or invalid. B denotes the climate alternative, C the profit- or board-line alternative, and A the social objective.

Table A3: Margin diagnostics for binding single-crossing implications

Dataset	Binding	Viol.	Min margin	10th pct. margin	Median margin
<i>Panel A: Main diagnostic, Experiments 1–5</i>					
Exp. 1	29	0	9.1	13.1	31.2
Exp. 2	43	0	9.6	23.3	35.5
Exp. 3	46	0	10.3	14.3	23.3
Exp. 4	33	0	7.9	10.6	24.9
Exp. 5	23	0	0.9	1.9	11.8
All experiments 1–5	174	0	0.9	10.5	26.6
<i>Panel B: Extended diagnostic, Experiments 6–7</i>					
Exp. 6	64	0	7.8	16.8	30.9
Exp. 7	34	0	15.7	20.0	32.3
All experiments 1–7	272	0	0.9	12.6	28.5

Notes. The table reports margin diagnostics for the grouped ideology-based single-crossing test. *Binding* is the number of single-crossing implications whose antecedent is satisfied in the observed data, and *Viol.* is the number of those binding implications that are violated. Margins are computed only over binding implications and are measured in percentage points. For each binding implication, the margin is the distance between the required consequent group share and the 50 percent majority threshold. The columns report the minimum, 10th percentile, and median of these binding consequent margins within each row. Panel A reports the main three-alternative diagnostic for Experiments 1–5. Panel B extends the same diagnostic to Experiments 6 and 7.

Table A4: Permutation test for zero violations of binding single-crossing requirements

Experiment	# Scenarios	V_{obs}	B_{obs}	$\Pr_{\text{perm}}(V \leq V_{\text{obs}})$	median(V)	V_{95}
<i>Panel A: Main diagnostic, Experiments 1–5</i>						
Exp. 1	5	0	29	0.464	2	4
Exp. 2	5	0	43	0.717	0	4
Exp. 3	8	0	46	0.117	4	10
Exp. 4	6	0	33	0.343	2	6
Exp. 5	3	0	23	0.977	0	0
All experiments (sum)	27	0	174	0.012	10	18
<i>Panel B: Extended diagnostic, Experiments 1–7</i>						
Exp. 6	5	0	64	0.719	0	4
Exp. 7	1	0	34	0.287	2	8
All experiments 1–7 (sum)	33	0	272	0.002	12	22

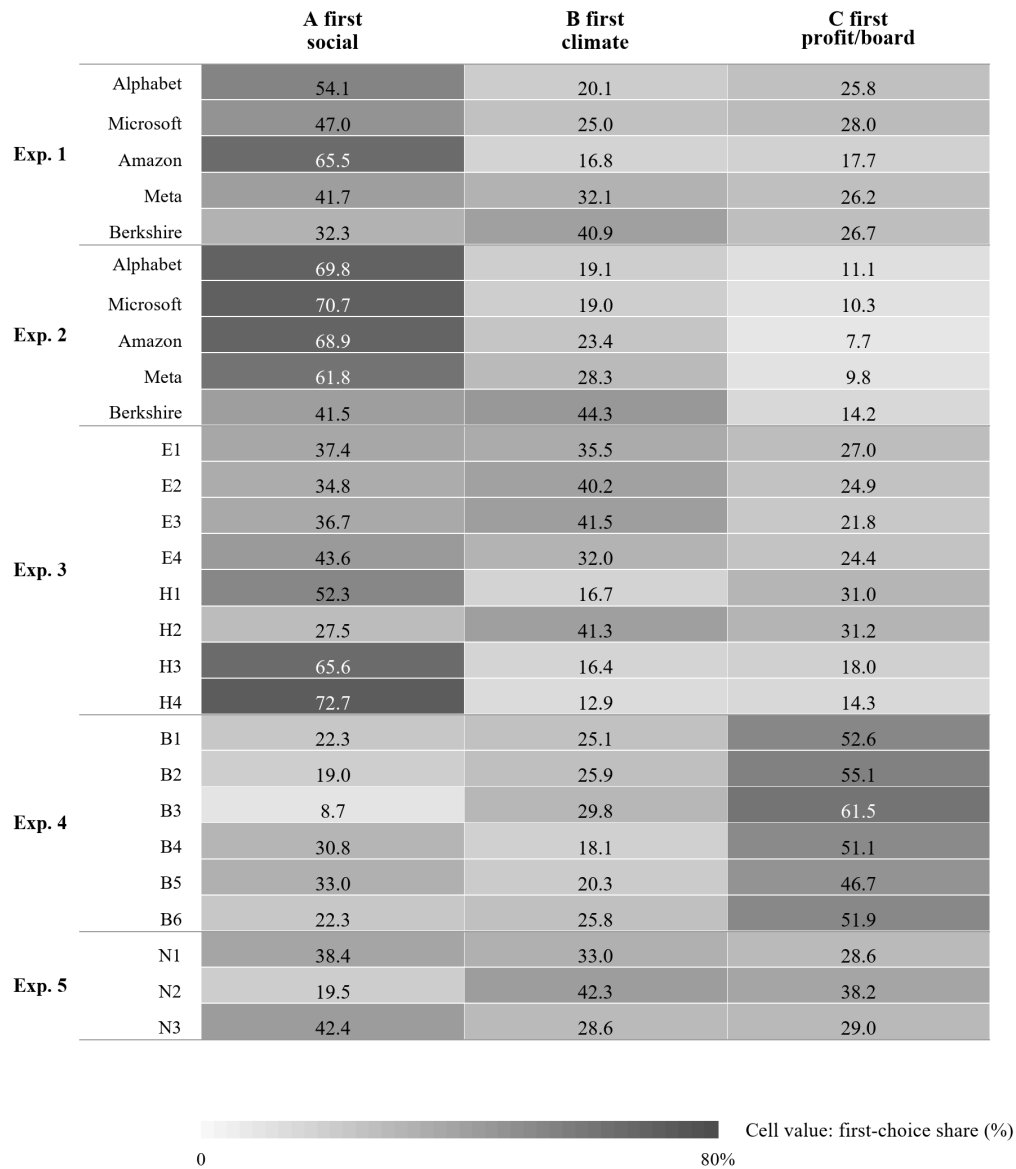
Notes. V counts the number of violated *binding* single-crossing implications, aggregated across all relevant ordered pairs and scenarios; B counts the number of binding implications. Permutation draws randomly reassign ideology labels across respondents within each experiment, holding each respondent's full set of rankings fixed. Reported permutation p-values use the standard randomization correction $(\#\{V_{\text{perm}} \leq V_{\text{obs}}\} + 1)/(R + 1)$ with $R = 20000$ draws. The median(V) and V_{95} columns report the median and 95th percentile of V across permutation draws. Panel B adds Experiments 6 and 7 to the Experiments 1–5 diagnostic. For aggregate rows, V is summed across experiments within each draw.

Table A5: Single-peakedness results

Scenario	N	SP fit (%)	95% CI
<i>Experiment 1: fixed ex ante axis, B–A–C</i>			
Alphabet	1,456	91.8	[90.3, 93.1]
Microsoft	1,456	91.1	[89.7, 92.5]
Amazon	1,456	96.1	[95.1, 97.0]
Meta	1,456	83.6	[81.6, 85.4]
Berkshire Hathaway	1,456	84.3	[82.4, 86.2]
<i>Experiment 2: fixed ex ante axis, B–A–C</i>			
Alphabet	3,200	94.0	[93.2, 94.8]
Microsoft	3,200	95.1	[94.4, 95.8]
Amazon	3,199	95.0	[94.2, 95.7]
Meta	3,200	93.0	[92.1, 93.9]
Berkshire Hathaway	3,200	84.4	[83.2, 85.7]
<i>Experiment 3: best-fitting middle alternative selected in sample</i>			
E1	1,235	91.8	[90.2, 93.3]
E2	1,183	75.1	[74.2, 77.9]
E3	1,207	76.8	[74.6, 79.1]
E4	1,211	74.6	[72.1, 76.9]
H1	1,226	82.5	[80.2, 84.7]
H2	1,197	74.1	[72.0, 76.7]
H3	1,148	85.9	[83.7, 87.8]
H4	1,192	94.4	[93.0, 95.6]
<i>Experiment 4: best-fitting middle alternative selected in sample</i>			
B1	1,469	76.5	[74.3, 78.7]
B2	1,469	72.6	[70.4, 74.9]
B3	1,469	82.4	[80.7, 84.4]
B4	1,469	78.4	[76.3, 80.5]
B5	1,469	79.8	[77.8, 81.8]
B6	1,469	71.8	[69.5, 74.0]
<i>Experiment 5: best-fitting middle alternative selected in sample</i>			
N1	1,348	81.8	[79.7, 83.9]
N2	1,301	76.9	[74.6, 79.0]
N3	1,324	80.8	[78.7, 82.8]

Notes: The table reports single-peakedness fit in each three-alternative scenario. With three alternatives, a ranking is single-peaked with respect to an axis if and only if the middle alternative is not ranked last. SP fit is therefore the share of respondents who do not rank the relevant middle alternative last. In Experiments 1 and 2, the axis is fixed ex ante at B–A–C, so A is the middle alternative. In Experiments 3–5, no axis is imposed ex ante; the middle alternative is selected to maximize fit, i.e. it is the alternative least often ranked last. Confidence intervals are percentile bootstrap intervals based on 2,000 respondent-level resamples. For consistency across experiments, all intervals in this table are respondent-level bootstrap percentile intervals. Thus, for Experiments 1 and 2, the intervals are computed in the same way as for Experiments 3–5 and differ from the Wilson score binomial intervals reported in Figure 2. For Experiments 3–5, the bootstrap re-selects the best-fitting middle alternative in each resample, so the interval reflects the endogenous middle-alternative rule. Monte Carlo tests against uniformly random rankings, applying the same fixed-axis or best-fitting-axis procedure as in each row, yield $p < 0.001$ for all scenarios.

Figure A1: First-choice support across scenarios



Notes: The figure reports the percentage of respondents whose first-ranked alternative is A, B, or C in each of the 27 three-option scenarios. A denotes the social or non-climate alternative, B denotes the climate alternative, and C denotes the profit-oriented or board-line alternative. Rows are grouped by experiment.

Table A6: Bootstrap Winner Frequencies by Rule

Scenario	Plurality			Borda			Condorcet				IRV		
	A	B	C	A	B	C	A	B	C	Cycle	A	B	C
<i>Experiment 1</i>													
Alphabet	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Microsoft	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	99.6	0.0	0.0
Amazon	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Meta	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Berkshire	0.0	100.0	0.0	96.7	3.0	0.0	77.7	20.8	0.0	0.0	77.6	20.9	0.0
<i>Experiment 2</i>													
Alphabet	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Microsoft	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Amazon	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Meta	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
Berkshire	4.2	95.5	0.0	1.9	98.0	0.0	6.4	93.4	0.0	0.0	6.4	93.4	0.0
<i>Experiment 3</i>													
E1	77.2	21.8	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
E2	1.2	98.6	0.0	8.2	91.5	0.0	9.3	90.2	0.0	0.0	9.3	90.2	0.0
E3	2.7	97.1	0.0	80.3	19.3	0.0	63.6	35.2	0.0	0.0	63.6	35.2	0.0
E4	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
H1	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
H2	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	99.6	0.0
H3	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
H4	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0
<i>Experiment 4</i>													
B1	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
B2	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
B3	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
B4	0.0	0.0	100.0	0.2	0.0	99.8	0.0	0.0	100.0	0.0	0.0	0.0	100.0
B5	0.0	0.0	100.0	11.0	0.0	88.5	0.2	0.0	99.8	0.0	0.2	0.0	99.8
B6	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
<i>Experiment 5</i>													
N1	99.0	0.9	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	99.9	0.0	0.0
N2	0.0	94.1	5.5	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0
N3	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	98.8	0.0	0.0

Note: The table reports bootstrap winner frequencies across Experiments 1–5, based on 5,000 respondent-level bootstrap replications. Entries are percentages. A denotes the social/non-climate alternative, B the climate alternative, and C the profit-oriented or board-line alternative. Columns A, B, and C report unique winners. For plurality, Borda, and IRV, unreported shares reflect tied winners. For Condorcet, Cycle reports strict majority cycles; other unreported shares reflect pairwise ties with no unique Condorcet winner.

Table A7: Pairwise WTP-based loss comparisons across voting rules

Scenario	Rule 1	Rule 2	Rule 1 lower loss (%)	Same loss (%)	Rule 2 lower loss (%)	Different-loss draws (%)	Usable draws
<i>Panel A: Plurality versus ranking rules</i>							
Berkshire	Plurality	Borda	0.0	53.0	46.9	47.0	4,905
Berkshire	Plurality	Condorcet	0.0	73.7	26.3	26.3	4,805
Berkshire	Plurality	IRV	0.0	78.6	21.4	21.4	4,725
E1	Plurality	Borda	0.0	67.1	32.9	32.9	4,916
E1	Plurality	Condorcet	0.0	67.1	32.9	32.9	4,916
E1	Plurality	IRV	0.0	67.2	32.8	32.8	4,915
E2	Plurality	Borda	4.8	86.7	8.5	13.3	4,850
E2	Plurality	Condorcet	2.6	81.9	15.5	18.1	4,918
E2	Plurality	IRV	2.6	81.9	15.5	18.1	4,918
E3	Plurality	Borda	14.8	49.3	35.9	50.7	4,937
E3	Plurality	Condorcet	9.5	64.3	26.2	35.7	4,822
E3	Plurality	IRV	9.5	64.3	26.2	35.7	4,822
<i>Panel B: Comparisons among ranking rules</i>							
Berkshire	Borda	Condorcet	18.3	81.5	0.1	18.5	4,714
Berkshire	Borda	IRV	23.8	76.1	0.1	23.9	4,636
Berkshire	Condorcet	IRV	4.8	95.2	0.0	4.8	4,690
E1	Borda	Condorcet	0.0	100.0	0.0	0.0	5,000
E1	Borda	IRV	0.0	100.0	0.0	0.0	4,999
E1	Condorcet	IRV	0.0	100.0	0.0	0.0	4,999
E2	Borda	Condorcet	1.9	87.5	10.6	12.5	4,930
E2	Borda	IRV	1.9	87.5	10.6	12.5	4,930
E2	Condorcet	IRV	0.0	100.0	0.0	0.0	5,000
E3	Borda	Condorcet	9.5	85.1	5.4	14.9	4,799
E3	Borda	IRV	9.5	85.1	5.4	14.9	4,799
E3	Condorcet	IRV	0.0	100.0	0.0	0.0	4,840

Note: Panel A compares plurality with each ranking rule; Panel B compares Borda, Condorcet, and IRV. All entries use the Table 2 respondent-level WTP bootstrap, with losses recomputed within each draw.

Table A8: P-values from demographic-question order tests

Scenario	Ranking p-value (Exp. 1)	WTP 1st–3rd p-value	WTP 2nd–3rd p-value	Ranking p-value (Exp. 6)
Alphabet	0.442	0.536	0.235	0.551
Microsoft	0.728	0.118	0.557	0.841
Amazon	0.551	0.877	0.493	0.380
Meta	0.462	0.003	0.099	0.413
Berkshire	0.327	0.831	0.297	0.425

Note: All entries are p-values from Pearson chi-squared tests of whether response distributions differ by randomized demographic-question timing (demographics before vs. after the scenario evaluations). In Experiment 1, ranking tests use the six A/B/C rankings, and WTP tests use the first-vs.-third and second-vs.-third MPL responses. In Experiment 6, ranking tests use the 24 A/B/C/D rankings.

Table A9: Logit and nonparametric trend tests (Experiments 1–2)

Scenario	Comparison	L / C / R support (%)	OR	Logit p-value	Ordered-trend p-value	N
<i>Experiment 1</i>						
Alphabet	A > C	84.5 / 70.9 / 52.2	0.45	<0.001	<0.001	1,456
	B > C	81.7 / 59.7 / 32.9	0.33	<0.001	<0.001	1,456
	B > A	31.7 / 24.1 / 17.9	0.69	<0.001	<0.001	1,456
Microsoft	A > C	83.8 / 68.6 / 48.0	0.42	<0.001	<0.001	1,456
	B > C	79.1 / 57.4 / 32.4	0.36	<0.001	<0.001	1,456
	B > A	38.2 / 29.5 / 22.1	0.68	<0.001	<0.001	1,456
Amazon	A > C	88.6 / 81.0 / 70.2	0.55	<0.001	<0.001	1,456
	B > C	80.9 / 61.1 / 36.8	0.37	<0.001	<0.001	1,456
	B > A	24.8 / 18.2 / 13.0	0.67	<0.001	<0.001	1,456
Meta	A > C	84.3 / 67.2 / 43.8	0.38	<0.001	<0.001	1,456
	B > C	83.4 / 63.5 / 37.6	0.35	<0.001	<0.001	1,456
	B > A	44.7 / 42.3 / 39.9	0.90	0.116	0.115	1,456
Berkshire Hathaway	A > C	76.3 / 64.5 / 50.6	0.56	<0.001	<0.001	1,456
	B > C	81.0 / 59.9 / 34.3	0.35	<0.001	<0.001	1,456
	B > A	63.1 / 46.2 / 30.2	0.50	<0.001	<0.001	1,456
<i>Experiment 2</i>						
Alphabet	A > C	93.3 / 88.0 / 79.5	0.53	<0.001	<0.001	3,200
	B > C	91.5 / 82.6 / 67.8	0.44	<0.001	<0.001	3,200
	B > A	25.6 / 23.2 / 20.9	0.88	0.007	0.007	3,200
Microsoft	A > C	94.2 / 89.2 / 81.0	0.51	<0.001	<0.001	3,200
	B > C	91.6 / 83.0 / 68.6	0.45	<0.001	<0.001	3,200
	B > A	25.8 / 22.2 / 19.0	0.82	<0.001	<0.001	3,200
Amazon	A > C	94.1 / 90.7 / 85.6	0.61	<0.001	<0.001	3,199
	B > C	93.5 / 85.8 / 71.9	0.42	<0.001	<0.001	3,199
	B > A	30.7 / 26.0 / 21.9	0.79	<0.001	<0.001	3,199
Meta	A > C	93.7 / 88.4 / 79.7	0.52	<0.001	<0.001	3,200
	B > C	92.8 / 84.6 / 70.1	0.43	<0.001	<0.001	3,200
	B > A	37.2 / 32.3 / 27.7	0.80	<0.001	<0.001	3,200
Berkshire Hathaway	A > C	83.1 / 77.5 / 70.6	0.70	<0.001	<0.001	3,200
	B > C	90.0 / 80.6 / 65.5	0.46	<0.001	<0.001	3,200
	B > A	61.2 / 51.0 / 40.6	0.66	<0.001	<0.001	3,200

Notes: Each row reports an ideology-gradient test for one pairwise comparison within a scenario. The binary outcome equals one if the respondent ranks the first alternative in the comparison above the second. “L / C / R support” reports the share of left, center, and right respondents for whom this is true. “OR” and “logit p-value” come from a one-parameter logit trend model in which political ideology is coded 0, 1, and 2 for Left, Center, and Right. Thus, an OR below one means that support for the comparison decreases as ideology moves from left to right. “Ordered-trend p-value” reports Stata’s nonparametric test for an ordered trend across the same three groups. “N” is the number of non-missing observations used in the test. P-values below 0.001 are reported as < 0.001.

Table A10: Logit and nonparametric trend tests (Experiments 3–5)

Scenario	Comparison	L / C / R support (%)	OR	Logit p-value	Ordered-trend p-value	N
<i>Experiment 3</i>						
E1	A > C	82.9 / 65.3 / 42.2	0.39	<0.001	<0.001	1,235
	B > C	73.7 / 50.8 / 27.6	0.37	<0.001	<0.001	1,235
	B > A	51.5 / 33.9 / 19.9	0.48	<0.001	<0.001	1,235
E2	A > C	72.0 / 58.6 / 43.8	0.55	<0.001	<0.001	1,183
	B > C	80.3 / 58.4 / 32.6	0.34	<0.001	<0.001	1,183
	B > A	60.7 / 48.7 / 36.9	0.61	<0.001	<0.001	1,183
E3	A > C	63.5 / 62.8 / 62.1	0.97	0.683	0.685	1,207
	B > C	74.3 / 56.8 / 37.5	0.46	<0.001	<0.001	1,207
	B > A	63.7 / 44.7 / 27.1	0.46	<0.001	<0.001	1,207
E4	A > C	65.7 / 61.0 / 56.1	0.82	0.006	0.006	1,211
	B > C	71.3 / 48.3 / 26.0	0.38	<0.001	<0.001	1,211
	B > A	54.8 / 39.9 / 26.7	0.55	<0.001	<0.001	1,211
H1	A > C	71.0 / 59.5 / 46.8	0.60	<0.001	<0.001	1,226
	B > C	61.0 / 40.3 / 22.6	0.43	<0.001	<0.001	1,226
	B > A	30.0 / 26.4 / 23.2	0.84	0.033	0.033	1,226
H2	A > C	65.3 / 51.5 / 37.5	0.56	<0.001	<0.001	1,197
	B > C	71.4 / 54.7 / 37.0	0.49	<0.001	<0.001	1,197
	B > A	61.8 / 54.6 / 47.2	0.74	<0.001	<0.001	1,197
H3	A > C	86.5 / 74.9 / 58.1	0.47	<0.001	<0.001	1,148
	B > C	68.0 / 52.8 / 37.0	0.53	<0.001	<0.001	1,148
	B > A	20.1 / 25.6 / 32.1	1.37	<0.001	<0.001	1,148
H4	A > C	87.5 / 82.0 / 74.8	0.65	<0.001	<0.001	1,192
	B > C	62.3 / 44.3 / 27.6	0.48	<0.001	<0.001	1,192
	B > A	17.5 / 15.2 / 13.1	0.84	0.098	0.096	1,192
<i>Experiment 4</i>						
B1	A > C	41.7 / 33.3 / 25.9	0.70	<0.001	<0.001	1,469
	B > C	51.5 / 32.2 / 17.6	0.45	<0.001	<0.001	1,469
	B > A	58.1 / 42.3 / 27.9	0.53	<0.001	<0.001	1,469
B2	A > C	46.8 / 32.6 / 21.0	0.55	<0.001	<0.001	1,469
	B > C	52.8 / 33.0 / 17.9	0.44	<0.001	<0.001	1,469
	B > A	59.2 / 52.0 / 44.7	0.75	<0.001	<0.001	1,469
B3	A > C	33.9 / 20.3 / 11.3	0.50	<0.001	<0.001	1,469
	B > C	50.9 / 31.6 / 17.1	0.45	<0.001	<0.001	1,469
	B > A	77.1 / 76.6 / 76.0	0.97	0.676	0.672	1,469
B4	A > C	54.7 / 41.1 / 28.7	0.58	<0.001	<0.001	1,469
	B > C	52.5 / 33.1 / 18.2	0.45	<0.001	<0.001	1,469
	B > A	41.2 / 32.6 / 25.0	0.69	<0.001	<0.001	1,469
B5	A > C	54.1 / 44.9 / 36.0	0.69	<0.001	<0.001	1,469
	B > C	52.8 / 32.4 / 17.0	0.43	<0.001	<0.001	1,469
	B > A	47.8 / 29.6 / 16.2	0.46	<0.001	<0.001	1,469
B6	A > C	48.7 / 35.6 / 24.3	0.58	<0.001	<0.001	1,469
	B > C	54.5 / 34.5 / 18.8	0.44	<0.001	<0.001	1,469
	B > A	58.2 / 49.2 / 40.2	0.70	<0.001	<0.001	1,469
<i>Experiment 5</i>						
N1	A > C	82.9 / 66.7 / 45.2	0.41	<0.001	<0.001	1,337
	B > C	79.6 / 61.7 / 39.9	0.41	<0.001	<0.001	1,337
	B > A	46.9 / 43.4 / 39.9	0.87	0.039	0.038	1,337
N2	A > C	64.2 / 46.9 / 30.2	0.49	<0.001	<0.001	1,292
	B > C	76.5 / 58.3 / 37.4	0.43	<0.001	<0.001	1,292
	B > A	71.4 / 64.4 / 56.7	0.72	<0.001	<0.001	1,292
N3	A > C	75.3 / 64.2 / 51.4	0.59	<0.001	<0.001	1,314
	B > C	77.5 / 59.3 / 38.1	0.42	<0.001	<0.001	1,314
	B > A	47.6 / 39.9 / 32.8	0.73	<0.001	<0.001	1,314

Notes: This table is constructed in the same way as Table A9, but reports results for Experiments 3–5.

Table A11: Aggregation in cyclic client-preference profiles (shares in %)

Sample	N	C: profit	A: compromise	B: no export	Abstain
<i>Panel A: Vote choice in the cyclic profile</i>					
Exp. 8	16	13	31	13	44
Exp. 9	503	28	32	12	28
Exp. 10	969	38	35	9	17
Democrats	280	26	39	17	18
Republicans	268	55	27	3	15
<i>Panel B: Stated aggregation principles endorsed</i>					
Sample	N	Profit default	Avg./intensity	Own pref.	Abstain
Exp. 8	16	25	38	13	25
Exp. 9	503	42	35	22	9
Exp. 10	969	38	30	28	19
Democrats	280	28	34	34	20
Republicans	268	52	21	20	19
<i>Panel C: Choice–principle alignment</i>					
Sample	N	Profit → C	Avg. → A	Abstain → abstain	Alignment test
Exp. 8	16	50	50	75	–
Exp. 9	503	55	37	65	$p < 0.001$
Exp. 10	969	78	60	72	$p < 0.001$

Notes: The table summarizes responses to the cyclic client-preference profile in Experiments 8–10. Entries are row percentages. In the harmonized notation, *B* denotes the no-export/climate alternative, *A* the geopolitical-stability compromise, and *C* the profit-maximizing alternative. Panel A reports hypothetical voting choices. Panel B reports endorsed aggregation principles, so entries need not sum to 100. Panel C reports, among respondents endorsing each principle, the share choosing the corresponding action. The alignment test assesses whether endorsed principles predict the corresponding vote choice; for Experiment 8, $N = 16$, so alignment is reported descriptively only. Democrat and Republican rows are subgroups of Experiment 10; other respondents are included in the Experiment 10 row but not shown separately.

B Algorithm for Constructing Scenarios from Actual Proxy-Ballot Items

This appendix describes a replicable procedure that, for each firm in the universe, selects one non-climate shareholder proposal A_i , one climate shareholder proposal B_i , and three voting strategies (A, B, C) used to design the experimental vignettes. It is deliberately detailed to ensure all necessary information is included to allow for replication.

B.1 Inputs and Output

Firm universe. Let i index firms and U denote the set of the K largest U.S. firms by market capitalization as of a pre-specified date. The algorithm is applied to each firm $i \in U$.

Input data. Let p denote proposals on firm i 's 2025 ballot. For each (i, p) we observe: (i) proposer type (management vs. shareholder); (ii) proposal text (title, resolved clause, supporting statement); (iii) ballot agenda number; (iv) board recommendation $r_{ip} \in \{\text{FOR}, \text{AGAINST}, \text{NO_REC}\}$ (any other values are treated as missing); and (v) vote outcome (for/against/abstain counts).

Support. Define support as

$$s_{ip} = \frac{\text{votes_for}_{ip}}{\text{votes_for}_{ip} + \text{votes_against}_{ip}}.$$

Abstentions are excluded from the denominator. If the denominator is zero or missing, set $s_{ip} = \text{NA}$ and exclude that proposal from candidate-set construction and selection.

Board-line definition (explicit recommendations only). Define $r_{ip}^* \in \{\text{FOR}, \text{AGAINST}\}$ using only explicit board recommendations.²⁷

$$r_{ip}^* = \begin{cases} \text{FOR}, & r_{ip} = \text{FOR}, \\ \text{AGAINST}, & r_{ip} = \text{AGAINST}, \\ \text{NA}, & r_{ip} = \text{NO_REC or missing}. \end{cases}$$

Proposals with $r_{ip}^* = \text{NA}$ are excluded from selection in Step 5 and from the ballot item set used to define strategies in Step 6.

Output. For each retained firm i , the algorithm outputs a selected non-climate proposal A_i , a selected climate proposal B_i , and the corresponding ballot-level voting strategies (A, B, C) .

B.2 Step 1: Normalization and Matching

This step puts proposal text and dictionary terms into the same standardized format before matching. The purpose is to make matching invariant to superficial variation in capitalization, punctuation, and hyphenation. For example, Net-Zero, net zero, and net-zero are all normalized to net zero and therefore treated identically. The rule is formalized as follows.

I use a deterministic function $\text{NORMALIZE}(\cdot)$ that lowercases text, replaces non-alphanumeric characters, including hyphens, with spaces, collapses repeated spaces, and removes leading and trailing spaces.

For each proposal (i, p) , I first concatenate the proposal title, resolved clause, and supporting statement, and then normalize the combined text:

$$\text{full_text}_{ip} := \text{NORMALIZE}(\text{title}_{ip} \parallel \text{resolved}_{ip} \parallel \text{supporting}_{ip}),$$

where missing fields are recoded to the empty string and $\parallel$ denotes concatenation with

²⁷The board recommendation is used only to define a baseline voting line. I do not assume that it identifies the profit-maximizing alternative.

single-space separators.²⁸

After normalization, I split each proposal text into words. A one-word dictionary entry must match a complete word, not part of a longer word. For example, ‘ai’ matches “AI governance” but not “said,” and ‘pac’ matches “PAC spending” but not “impact.” A multi-word dictionary entry must appear as the same consecutive words in the normalized proposal text.

B.3 Step 2: Domain Classification

Overview. This step assigns each proposal to one of three domains: CLIMATE, SOCIAL, or OTHER. I match the normalized proposal text from Step 1 against the fixed dictionaries reported below. Each domain dictionary contains *strong* and *weak* terms. A matched strong term is sufficient for classification in that domain. A matched weak term is not sufficient on its own. Absent a strong hit, classification requires at least two distinct weak terms from the same domain.

Assign $D_{ip} \in \{\text{CLIMATE}, \text{SOCIAL}, \text{OTHER}\}$ as follows.

Climate rule. Let $\mathcal{K}^{\text{climate, strong}}$ and $\mathcal{K}^{\text{climate, weak}}$ be fixed dictionaries. Set $D_{ip} = \text{CLIMATE}$ iff at least one strong climate term from the proposal is matched to the dictionary, or at least two distinct weak climate terms are matched.

Social rule. If the climate rule is not satisfied, let $\mathcal{K}^{\text{social, strong}}$ and $\mathcal{K}^{\text{social, weak}}$ be fixed. Set $D_{ip} = \text{SOCIAL}$ iff at least one strong social term is matched, or at least two distinct weak social terms are matched. Otherwise set $D_{ip} = \text{OTHER}$.

The full dictionaries are shown below in normalized forms. For readability, the strong social dictionary $\mathcal{K}^{\text{social, strong}}$ is listed in eight thematic groups, but the groups themselves play no algorithmic role, and the algorithm uses only their union. The strong social dictionary

²⁸Before applying $\text{NORMALIZE}(\cdot)$, URL strings are removed from the title, resolved clause, and supporting statement.

is the union of the eight thematic strong-term groups listed below:

$$\mathcal{K}^{\text{social,strong}} = \mathcal{K}^{\text{workers}} \cup \mathcal{K}^{\text{human_rights}} \cup \mathcal{K}^{\text{diversity}} \cup \mathcal{K}^{\text{digital_ai}} \cup \mathcal{K}^{\text{health}} \cup \mathcal{K}^{\text{animal}} \cup \mathcal{K}^{\text{political}} \cup \mathcal{K}^{\text{other}}.$$

The weak social dictionary, $\mathcal{K}^{\text{social,weak}}$, is listed separately below.

Full dictionaries.

Strong climate terms. $\mathcal{K}^{\text{climate,strong}}$: climate, global warming, greenhouse gas, ghg, emission, emissions, carbon, co2, methane, net zero, decarbonization, paris agreement, scope 1, scope 2, scope 3, science based target.

Weak climate terms. $\mathcal{K}^{\text{climate,weak}}$: paris aligned, energy transition, transition risk, fossil fuel, oil sands, tar sands, coal, renewable energy, clean energy, solar, wind.

Strong social terms.

Workers & workplace ($\mathcal{K}^{\text{workers}}$): worker, workers, employee, employees, collective bargaining, freedom of association, living wage, minimum wage, fair wage, overtime pay, working conditions, workplace safety, warehouse safety, gig worker, gig workers, contract worker, temporary worker.

Human rights & supply chain ($\mathcal{K}^{\text{human_rights}}$): human rights, labor rights, labour rights, forced labor, forced labour, child labor, child labour, modern slavery, slavery, human trafficking, supply chain due diligence, responsible sourcing, conflict minerals, indigenous rights, land rights, free prior and informed consent, community consent.

Diversity, equity & inclusion ($\mathcal{K}^{\text{diversity}}$): diversity, dei, diversity equity and inclusion, gender pay gap, racial equity, racial justice, civil rights, equal opportunity, non discrimination, marginalized communities, board diversity, lgbt, lgbtq, sexual orientation, gender identity, minority representation.

Digital rights, privacy & AI ($\mathcal{K}^{\text{digital_ai}}$): privacy, data protection, data security, cybersecurity,

cyber security, artificial intelligence, machine learning, algorithmic bias, ai ethics, responsible ai, facial recognition, surveillance, content moderation, hate speech, misinformation.

Public health, product and environmental harm (non-climate) ($\mathcal{K}^{\text{health}}$): public health, health impact, health impacts, health risk, health risks, product safety, consumer safety, food safety, opioid, opioids, tobacco, smoking, alcohol harm, pesticide, pesticides, chemical safety, toxic, toxic exposure, biodiversity, plastic waste, ocean plastic.

Animal welfare ($\mathcal{K}^{\text{animal}}$): animal welfare, animal testing, animal experimentation, vivisection, factory farming, intensive farming, gestation crate, battery cage, cage free, broiler chicken, humane slaughter, fur farming.

Political spending & lobbying ($\mathcal{K}^{\text{political}}$): political contributions, political spending, political expenditures, corporate political activity, campaign finance, lobbying, lobbying expenditures, trade association, chamber of commerce, think tank, political action committee.

Other social ($\mathcal{K}^{\text{other}}$): community impact, community relations, community benefits, local community, local communities, environmental justice, social justice, human capital management, customer privacy, data breach, affordable housing, access to medicine, access to healthcare, food security.

Weak social terms $\mathcal{K}^{\text{social,weak}}$ (only help classify when at least one additional social term is also matched): union, unions, equity, inclusion, ai, pac, super pac

B.4 Step 3: Anti-ESG Filter and Domain Eligibility

Overview. The anti-ESG step is applied only after a proposal has been classified as CLIMATE or SOCIAL. The filter removes proposals framed as opposition to ESG-type policies. For example, end dei is flagged directly by the anti-action dictionary, whereas a proposal containing both woke and esg is flagged because it combines an anti-ESG framing term (woke) with a target term (esg).

Formal rule. For proposals with $D_{ip} \in \{\text{CLIMATE}, \text{SOCIAL}\}$, define $\text{anti}_{ip} = 1$ iff either:
(i) any term in the explicit anti-action dictionary below matches full_text_{ip} under the

matching rule in Step 1; or (ii) at least one framing term and at least one target term both match full_text_{ip} under the matching rule in Step 1. Otherwise set $\text{anti}_{ip} = 0$. Equivalently, among the three dictionaries listed below, a match in the explicit anti-action dictionary is sufficient on its own, while matches in the framing and target dictionaries flag a proposal only when both types are present.

Domain eligibility. Define

$$E_{ip} = 1 \iff D_{ip} \in \{\text{CLIMATE}, \text{SOCIAL}\} \text{ and } \text{anti}_{ip} = 0.$$

Otherwise set $E_{ip} = 0$. Thus proposals classified as OTHER are automatically ineligible at this stage.

Anti-ESG dictionaries (shown in normalized form). **Targets** $\mathcal{K}^{\text{anti,target}}$: esg, environmental social governance, dei, diversity equity and inclusion, net zero, sustainability, sustainable.

Explicit anti-actions $\mathcal{K}^{\text{anti,action}}$: anti esg, against esg, oppose esg, end esg, stop esg, eliminate esg, abolish esg, ban esg, prohibit esg, discontinue esg, remove esg, phase out esg, reverse esg, rollback esg, end esg program, end esg programs, reverse esg policies, prohibit the use of esg factors, ban the use of esg factors, against the use of esg factors, anti dei, against dei, oppose dei, end dei, stop dei, eliminate dei, abolish dei, ban dei, prohibit dei, discontinue dei, remove dei, phase out dei, reverse dei, rollback dei, oppose diversity equity and inclusion, reverse diversity policies, reverse racial equity, end net zero, stop net zero, ban net zero, prohibit net zero, reverse net zero.

Anti-ESG framing terms $\mathcal{K}^{\text{anti,frame}}$: woke, wokeism, politicized, ideological, corporate activism, political agenda, stakeholder capitalism, critical race theory, crt, reverse discrimination, viewpoint discrimination, political discrimination, risks of esg, costs of esg, risks of dei, costs of dei.

B.5 Step 4: Firm-Level Candidate Sets and Ordering

For each firm i , define the climate and non-climate candidate sets

$$\mathcal{P}_i^{\text{climate}} = \left\{ p : \begin{array}{l} p \text{ is a shareholder proposal,} \\ D_{ip} = \text{CLIMATE,} \\ E_{ip} = 1, \\ s_{ip} \neq \text{NA,} \\ r_{ip}^* \neq \text{NA} \end{array} \right\},$$

and

$$\mathcal{P}_i^{\text{social}} = \left\{ p : \begin{array}{l} p \text{ is a shareholder proposal,} \\ D_{ip} = \text{SOCIAL,} \\ E_{ip} = 1, \\ s_{ip} \neq \text{NA,} \\ r_{ip}^* \neq \text{NA} \end{array} \right\}.$$

Order each set by decreasing support s_{ip} , tie-breaking by increasing ballot agenda number.

If either candidate set is empty, drop the firm and record the drop reason.

B.6 Step 5: Select One Climate Proposal and One Social Proposal

For each firm i , let B_i be the first element (which is the proposal with highest support) of the ordered set $\mathcal{P}_i^{\text{climate}}$ such that $r_{ip}^* = \text{AGAINST}$. Analogously, let A_i be the first element of the ordered set $\mathcal{P}_i^{\text{social}}$ such that $r_{ip}^* = \text{AGAINST}$.

If either A_i or B_i does not exist, drop the firm and record the drop reason. Let

$$\mathcal{S} = \{i \in U : A_i \text{ and } B_i \text{ both exist}\}$$

denote the set of retained firms.

B.7 Step 6: Define Strategies A , B , and C

For each retained firm $i \in \mathcal{I}$, let $\mathcal{P}_i$ denote the set of all ballot items with r_{ip}^* defined. Define the board-line strategy C by

$$\text{vote}_{ip}^C = r_{ip}^* \quad \forall p \in \mathcal{P}_i.$$

Define strategy B by

$$\text{vote}_{ip}^B = \begin{cases} \text{FOR}, & p = B_i, \\ r_{ip}^*, & \text{otherwise,} \end{cases}$$

and strategy A by

$$\text{vote}_{ip}^A = \begin{cases} \text{FOR}, & p = A_i, \\ r_{ip}^*, & \text{otherwise.} \end{cases}$$

By construction, $r_{iA_i}^* = r_{iB_i}^* = \text{AGAINST}$, so A and B each implement exactly one salient one-item deviation from the board line.

B.8 Step-by-Step Algorithm (Pseudocode)

Algorithm 1: Deterministic scenario construction

Input: Ballot-level dataset for year 2025 with fields above; fixed dictionaries

Output: Scenario firms and (A_i, B_i) with strategies (A, B, C)

Normalize all dictionary terms using $\text{NORMALIZE}(\cdot)$

foreach *proposal* (i, p) **do**

Construct full_text_{ip} from the proposal title, resolved clause, and supporting statement;

Compute domain $D_{ip} \in \{\text{CLIMATE}, \text{SOCIAL}, \text{OTHER}\}$ (Step 2);

Compute anti flag $\text{anti}_{ip} \in \{0, 1\}$ (Step 3);

Set eligibility $E_{ip} = 1$ if $D_{ip} \in \{\text{CLIMATE}, \text{SOCIAL}\}$ and $\text{anti}_{ip} = 0$;

foreach *firm* i **do**

Build candidate lists:

$$\mathcal{P}_i^{\text{climate}} = \{p : \text{shareholder proposal}, D_{ip} = \text{CLIMATE}, E_{ip} = 1, s_{ip} \neq \text{NA}, r_{ip}^* \neq \text{NA}\}$$

$$\mathcal{P}_i^{\text{social}} = \{p : \text{shareholder proposal}, D_{ip} = \text{SOCIAL}, E_{ip} = 1, s_{ip} \neq \text{NA}, r_{ip}^* \neq \text{NA}\}$$

If either set is empty: drop firm and record reason;

Sort each list by decreasing s_{ip} , tie-break by increasing agenda number;

Select B_i as the first climate proposal with $r_{ip}^* = \text{AGAINST}$;

Select A_i as the first social proposal with $r_{ip}^* = \text{AGAINST}$;

If either selection fails: drop firm and record reason;

Else keep firm in set $\mathcal{S}$ and record (A_i, B_i) ;

Define strategies (A, B, C) on each ballot in $\mathcal{S}$ (Step 6);

B.9 Implementing the Algorithm

The firm universe is defined using a fixed market-capitalization cutoff. Specifically, I include all U.S.-incorporated public companies with market capitalization exceeding \$1 trillion

in early January (FinanceCharts, 2026), which yields $K = 9$: NVIDIA, Apple, Alphabet, Microsoft, Amazon, Meta, Tesla, Broadcom, and Berkshire Hathaway.²⁹

B.10 Dropped Firms

The following four firms are dropped by the algorithm in Step 4 because at least one required candidate set is empty. For Tesla, Apple, and NVIDIA, no proposal was classified as climate under the algorithm. In Broadcom, both the climate and social candidate sets are empty because the ballot contains no shareholder proposals.

- **Tesla:** Tesla’s 2025 annual-meeting ballot includes shareholder proposals on topics such as integrating *sustainability metrics* into executive compensation and requesting a *child labor audit*, plus governance/bylaw items, but no climate-themed shareholder proposal; hence $\mathcal{P}_{\text{Tesla}}^{\text{climate}} = \emptyset$ and the firm is dropped in Step 4 (Tesla, Inc., 2025a,b).³⁰
- **Broadcom:** Broadcom’s 2025 annual-meeting ballot includes only management matters (director elections, auditor ratification, and say-on-pay) and therefore has no shareholder proposals; consequently $\mathcal{P}_{\text{Broadcom}}^{\text{social}} = \mathcal{P}_{\text{Broadcom}}^{\text{climate}} = \emptyset$ and the firm is dropped in Step 4 (Broadcom Inc., 2025a,b).
- **Apple:** Apple’s 2025 ballot includes shareholder proposals on ethical AI data acquisition, CSAM-identifying software and user privacy, DEI, and charitable giving; none are climate proposals under the algorithm’s climate dictionary, so $\mathcal{P}_{\text{Apple}}^{\text{climate}} = \emptyset$ and the firm is dropped in Step 4 (Apple Inc., 2025a,b).
- **NVIDIA:** NVIDIA’s 2025 ballot includes shareholder proposals on special-meeting thresholds, a director resignation policy, and workforce-data reporting, but no climate

²⁹The pre-analysis plan refers to a random seed for scenario selection. The seed was not used in the realized implementation because no stochastic scenario-selection step was required. The firm universe, classification dictionaries, eligibility filters, support ordering, and agenda-number tie-breaking rule determined the retained firms and selected proposals mechanically.

³⁰The term *sustainability* was intentionally excluded from the climate dictionary because it can refer to non-climate sustainability concepts as well.

proposal; thus $\mathcal{P}_{\text{NVIDIA}}^{\text{climate}} = \emptyset$ and the firm is dropped in Step 4 (NVIDIA Corporation, 2025a,b).

B.11 Retained Firms and Selected Proposal Pairs

For each of the five retained firms (Alphabet, Amazon, Microsoft, Meta, and Berkshire Hathaway), I collected two SEC filings from 2025 shareholder meetings: (i) the definitive proxy statement (Schedule 14A), which provides each ballot item’s proposal text and the board’s voting recommendation, and (ii) the post-meeting Form 8-K (Item 5.07), which reports vote tabulations for each matter submitted to shareholders.

Following Algorithm 1, I concatenated each proposal’s title, resolved clause, and supporting statement from the proxy statement, normalized the resulting text, and applied the fixed climate/social dictionaries and the anti-ESG filter. For each firm i , this produced two ordered candidate sets of shareholder proposals, $\mathcal{P}_i^{\text{climate}}$ and $\mathcal{P}_i^{\text{social}}$. Within each set, proposals were ranked by s_{ip} , with ties broken by ballot agenda number. I then selected B_i as the highest-ranked climate shareholder proposal with $r_{ip}^* = \text{AGAINST}$, and analogously selected A_i from the social candidate set. I then defined strategy C to follow the board recommendation on all ballot items with an explicit board recommendation, strategy A to differ from C only by voting FOR on A_i , and strategy B to differ from C only by voting FOR on B_i . Finally, for survey administration, I rewrote each selected proposal into a short vignette that preserves the operative request in the resolved clause while removing non-essential legal or technical wording.

Selected proposal pairs. Applying the procedure yielded the following firm-specific scenario pairs (A_i, B_i) :

- **Alphabet (GOOGL):** A_i = Proposal 12 (human-rights impact assessment of AI-driven targeted advertising policies); B_i = Proposal 7 (enhanced disclosure on Alphabet’s climate goals) (Alphabet Inc., 2025a,b).

- **Amazon.com (AMZN):** A_i = Item 10 (independent audit/report on warehouse working conditions); B_i = Item 7 (report on how data-center growth affects Amazon’s ability to meet climate commitments) (Amazon.com, Inc., 2025a,b).
- **Microsoft (MSFT):** A_i = Proposal 8 (report on data operations in human-rights hotspots); B_i = Proposal 10 (report on climate and financial risks from providing AI and machine-learning tools for oil and gas development/production) (Microsoft Corporation, 2025a,b).
- **Meta Platforms (META):** A_i = Proposal 8 (report on hate targeting marginalized communities); B_i = Proposal 12 (report on GHG emissions reduction actions) (Meta Platforms, Inc., 2025a,b).
- **Berkshire Hathaway (BRK.A/BRK.B):** A_i = Proposal 8 (independent board committee for oversight of AI); B_i = Proposal 7 (report on Berkshire’s clean-energy supply financing ratio) (Berkshire Hathaway Inc., 2025a,b)

Online Appendix E reports the respondent-facing scenario text.

C Supplementary results

C.1 Implementation of Proxy Voting

Experiment 1 implementation. I implemented the Experiment 1 vote through Revolut, an online broker that provides proxy-voting access to eligible shareholders (Revolut, 2026).

After the experiment, but before the relevant record date, I implemented the Experiment 1 voting in two stages. First, I randomly selected one of the five firm scenarios for possible implementation, and the draw selected Alphabet. I then purchased one Alphabet share before the record date so that I would be eligible to exercise voting rights in this firm if implementation became possible. This firm-level draw necessarily took place before it was known which shareholder proposals would appear on Alphabet’s 2026 ballot.

Second, I randomly selected one respondent from the set of respondents whose WTP module concerned Alphabet and randomly selected one of that respondent's MPL decisions. The selected MPL decision determined both the cash payment, if any, and the voting strategy to be implemented. The implementation draw selected a respondent whose relevant Alphabet choice was the climate strategy. I therefore voted FOR the 2026 Alphabet shareholder proposal requesting enhanced disclosure on climate goals, which directly corresponded to the climate proposal used in the Alphabet scenario.

The social proposal used in the 2025 Alphabet scenario concerned a human-rights impact assessment of AI-driven targeted advertising policies. Closely related proposals had appeared on Alphabet's ballot in preceding years, but no sufficiently close version of that proposal appeared on the 2026 ballot. Because the survey instructions made implementation conditional on the relevant proposal being available, I treated the social component as not implementable. Figure A2 documents the submitted Alphabet vote through Revolut/ProxyVote.

Experiment 3 implementation. Before the 2026 proxy season, I implemented the Equinor voting. Figure A3 provides more details. The selected respondent for Scenario E1 had ranked the climate alternative first. After reviewing the 2026 Equinor shareholder meeting agenda, I found Proposal 10 to be the closest available implementation of that climate-oriented choice (Equinor, 2026). I therefore logged in through the Norwegian VPS voting system and voted FOR Proposal 10, while abstaining on the other shareholder proposal. As in Experiment 1, this procedure made the selected response consequential at the implementation level, but the vote was not intended or expected to affect the aggregate shareholder-meeting outcome.

C.2 Background for Experiment 3 Scenarios

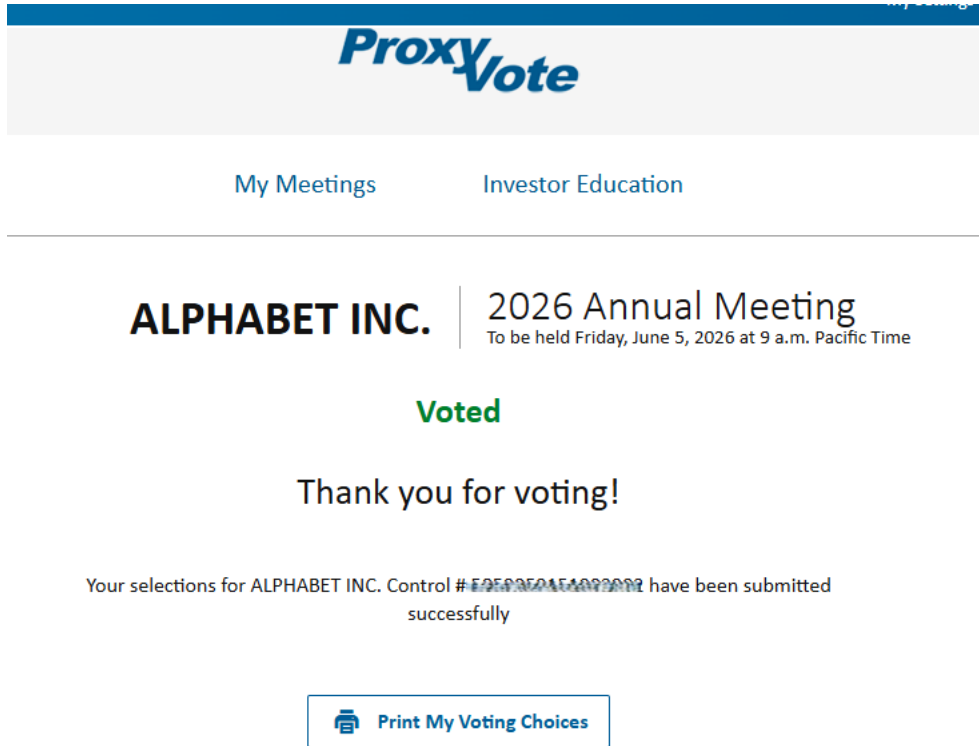
All four scenarios are motivated by salient trade-offs faced by Equinor, whose majority shareholder is the Norwegian government (holding 67% of its shares).³¹ In E1, Norwegian

³¹Although Equinor and the Norwegian Sovereign Wealth Fund are both owned by the Norwegian government, they operate under distinct governance structures. Equinor is a publicly traded company with government majority ownership.

Figure A2: Alphabet proxy-voting implementation

4. Advisory vote to approve compensation awarded to named executive officers	☐ For ☐ Against ☐ Abstain	
Board Recommendation: For		
5. Shareholder proposal regarding an enhanced disclosure on climate goals	☒ For ☐ Against ☐ Abstain	
Board Recommendation: Against		
6. Shareholder proposal regarding a report on water usage and AI development	☐ For ☐ Against ☐ Abstain	
Board Recommendation: Against		

(a) Documentation of the Alphabet proxy vote submitted through Revolut/ProxyVote.



The screenshot shows the ProxyVote interface for the Alphabet Inc. 2026 Annual Meeting. The header includes the ProxyVote logo and navigation links for "My Meetings" and "Investor Education". The main content area displays "ALPHABET INC. | 2026 Annual Meeting" with the date and time "To be held Friday, June 5, 2026 at 9 a.m. Pacific Time". Below this, a green "Voted" status is shown, followed by a "Thank you for voting!" message. A confirmation message states: "Your selections for ALPHABET INC. Control # **5059950451092092** have been submitted successfully". At the bottom, there is a button labeled "Print My Voting Choices" with a printer icon.

(b) Receipt confirming that the Alphabet proxy vote was submitted through Revolut/ProxyVote.

Figure A3: Equinor proxy-voting implementation

☒ For ☐ Against ☐ Abstain	10	Forslag fra aksjonær om at Equinor skal sette mål og iverksette tiltak for en trygg fremtid	Proposal from shareholder that Equinor shall set goals and implement measures that support a safe future
☐ For ☐ Against ☐ Abstain	11	Forslag fra aksjonær om at Equinor skal deles i ett selskap for olje og gass og ett for fornybar energi	Proposal from shareholder that Equinor shall split into one company for oil and gas and one for renewable energy
☐ For ☐ Against ☐ Abstain	12	Forslag fra aksjonær om at Equinor skal investere i fornyelse av Ukrainas energiforsyning	Proposal from shareholder that Equinor shall invest in upgrades of Ukraine's energy system

(a) Equinor voting scenario.

General Meeting

Share Name: EQUINOR ASA
 Time: 12/05/2026 15.00
 Type: General Meeting
 Location: <https://dnb.lumiconnect.com/100-115-425-052> og Equinor Business Center, Forusbeen 50, Stavanger
 Administrator: DNB Bank ASA
 Tel.
 Fax.
 Registration deadline: 11/05/2026 CET 12.00
 Advance vote deadline: 11/05/2026 CET 12.00
 Information regarding advance vote: For additional information about the agenda please refer to the Notice.

Name: [REDACTED]
 Ref.no.: [REDACTED]
 PIN code: [REDACTED]
 Email:

Holdings

Name	Amount of shares in company	Status
Ordinær	3	Cast as advance vote

Messages

Message Type	Language	Document
Notice of GM	Norwegian	
Notice of GM	English	

[Back](#)

(b) Redacted documentation of the implemented Equinor advance vote through the Norwegian VPS voting system. Account-identifying fields are cropped or redacted.

climate activists support redirecting Equinor’s investments toward renewable energy, whereas others contend that developing new oil and gas fields strengthens geopolitical stability by reducing Europe’s reliance on Russian gas (Equinor, 2022). A similar debate arises in E2, where some dispute the claim that developing countries benefit from continued Norwegian oil exports. Scenario E3 reflects a key policy debate in Norway: proponents of electrification emphasize its climate benefits, whereas critics argue that it raises household energy costs (Europower, 2024; NRK, 2023). In E4, Equinor is actively pursuing offshore wind projects (Equinor, 2024), though critics express concerns about their potential effects on fishing communities and biodiversity (Dagens Næringsliv, 2023; Norges vassdrags- og energidirektorat, 2023).

D Robustness

Table A12: Robustness of WTP-based rule-performance results

Robustness check	Concern addressed	Result
WTP-subsample balance	Because WTP is elicited only for a randomly assigned WTP scenario, the matched WTP subsample may differ from the full ranking sample.	No scenario-level chi-squared test rejects equality of ranking distributions between the WTP subsample and the full ranking sample at the 5% level.
MPL interval coding	Grid-valued MPL responses may not identify exact WTP point values, so the WTP benchmark could depend on how switching intervals are coded.	The WTP-maximizing alternative is unchanged in every scenario when responses are coded using lower-bound, midpoint, upper-bound, or baseline point values.
Alternative tie handling	Baseline WTP losses omit bootstrap draws in which a rule has no unique winner, which could matter if ties are common or systematically unfavorable.	Qualitative rule comparisons are unchanged under random, best-case, worst-case, and deterministic tie-breaking; the maximum rule-specific tied-draw share is 3.6%.

Notes: The table summarizes the main robustness checks for the WTP-based comparison of voting rules. The monetary benchmark is computed from the matched WTP subsample and recomputed within respondent-level bootstrap draws where relevant.

Table A13: Permutation test for an alternative ideology-group definition

Dataset	# Scenarios	V_{obs}	B_{obs}	$\Pr_{\text{perm}}(V \leq V_{\text{obs}})$	$\text{median}(V)$	V_{95}
Exp. 1	5	0	29	0.432	2	4
Exp. 2	5	0	43	0.442	2	4
Exp. 3	8	0	47	0.092	4	10
Exp. 4	6	0	33	0.396	2	6
Exp. 5	3	0	23	0.896	0	4
All experiments (sum)	27	0	175	0.007	10	18

Notes. V counts violated *binding* grouped single-crossing implications, and B counts binding implications. Permutation draws randomly reassign ideology-group labels across respondents within each experiment, holding each respondent's full ranking profile fixed. The alternative group definition keeps the three ordered groups Right–Middle–Left but excludes respondents who answer don't know/prefer not to say from the middle group. Reported p-values use $(\#\{V_{\text{perm}} \leq V_{\text{obs}}\} + 1)/(R + 1)$ with $R = 5000$ draws. For aggregate rows, V is summed across experiments within each draw.

D.1 Identifying left-wing alternative

This section describes five methods (labeled M1 to M5) for selecting the most left-wing alternative in Experiments 3 to 5 (since Experiments 1 and 2 pre-registered the ranking B-A-C, this is not included here).³² The specification M1 compares only alternatives A and B by counting the number of left-wing supporters, whereas the alternative methods (M2 to M5) evaluate all three alternatives (A, B, and C) as follows:

- **M1 (Most L supporters, A vs. B only)** Compares only alternatives A and B by counting left-wing supporters and selects the alternative with the higher count.
- **M2 (Largest $(L - R)$)**
For each alternative, computes the difference between the number of left-wing and right-wing supporters, i.e., $L - R$, and chooses the alternative with the largest difference.
- **M3 (Highest L/R ratio)**

³²Experiment 4 also pre-registered a rule for determining when the climate alternative should be treated as the left-most alternative. For consistency across Experiments 3–5, I use the common classification procedure described in this appendix.

Calculates the ratio of left-wing to right-wing supporters (L/R) for each alternative. The alternative with the highest ratio is then selected.

- **M4 (Largest fraction $L/(L + M + R)$)**

Computes the fraction of left-wing supporters among all supporters (left, middle, and right) for each alternative and picks the alternative where this fraction is highest.

- **M5 (Largest $(L + M - R)$)**

Calculates a net score for each alternative as the sum of left and middle supporters minus right supporters, i.e., $(L + M - R)$, and selects the alternative with the highest net score.

Table A14 shows the results.

D.2 Value-weighted analysis of Experiments 1, 3, 6, and 7

This section reports ownership-weighted robustness checks. The main conclusions are unchanged: weighted preference profiles remain structured, all binding single-crossing checks in the three-alternative diagnostics are satisfied, single-peakedness fit remains relatively high, and the richer choice-set results in Experiments 6 and 7 continue to show preference structure and broad support for compromise alternatives.

Ownership weighting. Respondents are here weighted by their reported total investments in stocks and mutual funds, so that individuals with larger financial stakes receive greater influence in the analysis. To avoid giving excessive weight to extreme observations or misreporting in the upper tail, I use a compressed tiered weighting scheme rather than weights proportional to reported wealth. Specifically, respondents reporting zero investments, or selecting “Prefer not to say,” are assigned weight 0; respondents reporting investments between \$0 and \$10,000 are assigned weight 1; those reporting \$10,000–\$100,000 are assigned weight 2; those reporting \$100,000–\$1,000,000 are assigned weight 3; and those

Table A14: Heuristic Classification of the Left-Most Alternative

Scenario	M1	M2	M3	M4	M5	Additional ordering
<i>Experiment 3</i>						
E1	B	B	B	B	B	–
E2	B	B	B	B	B	–
E3	B	B	B	B	B	–
E4	B	B	B	B	B	–
H1	A	A	B	B	A	A–B–C
H2	B	B	B	B	B	–
H3	A	A	A	A	A	A–B–C
H4	A	A	B	B	A	A–B–C
<i>Experiment 4</i>						
B1	B	B	B	B	B	–
B2	B	B	B	B	B	–
B3	B	B	B	B	B	–
B4	A	B	B	B	A	A–B–C
B5	B	B	B	B	B	–
B6	B	B	B	B	B	–
<i>Experiment 5</i>						
N1	B	B	B	B	A	A–B–C
N2	B	B	B	B	B	–
N3	A	B	B	B	B	A–B–C

Notes: The table reports five heuristic classifications of the left-most alternative in Experiments 3–5. The final column indicates whether the A–B–C ordering is also included in the single-crossing robustness checks.

reporting more than \$1,000,000 are assigned weight 4. These weights increase the influence of respondents with larger holdings while limiting the sensitivity of the results to outliers.

Ownership-weighted results. Tables A15–A17 show that the main qualitative findings in the three-alternative experiments hold when responses are weighted by ownership. Relative to the main results, ownership weighting shifts some support toward the *C* option.

The weighted single-crossing results in Table A16 remain fully consistent with the main analysis. There are no violated binding constraints in either experiment under any ordering considered. The weighted single-peakedness results in Table A17 are also very similar to the main findings. In Experiment 1, the maximum single-peaked fit ranges from 82.0% to 95.4%. In Experiment 3, the fit ranges from 70.2% to 93.4%.

Evidence from Experiments 6 and 7 points in the same direction. In the four-alternative bundle task, Figure A4 shows that the ownership-weighted share of rankings satisfying both issue-separability conditions ranges from 61.1% to 69.1% across firm scenarios, with a pooled share of 63.9%, well above the 33.3% random-ranking benchmark. Thus, the evidence for structure in the full 2×2 bundle space is not driven by equal respondent weights.

In the six-option module of Experiment 7, Table A18 shows that weighting attenuates the point-estimate divergence between plurality and the ranking-based rules: all four rules select the score-maximizing $B + C$ option in the full weighted sample. However, plurality remains less stable in the bootstrap, selecting a non-score-maximizing option in 33.1% of replications and generating a mean score-based loss of 3.1%. By contrast, Borda and Condorcet select a non-score-maximizing option in only 0.7% of replications, and IRV in 5.2%, with essentially zero mean loss for the ranking-based rules.

Finally, the weighted board-election results in Figure A5 are also close to the main results.

Table A15: Weighted distribution of rankings across scenarios in Experiments 1 and 3 (shares in %)

Panel A. Experiment 1 (weighted)						
Ranking	Alphabet	Microsoft	Amazon	Meta	Berkshire	
A $\succ$ B $\succ$ C	39.7	33.8	44.5	31.6	20.4	
A $\succ$ C $\succ$ B	11.6	11.6	19.0	8.7	11.7	
B $\succ$ A $\succ$ C	18.0	21.7	16.0	25.8	32.2	
B $\succ$ C $\succ$ A	2.9	2.7	1.0	5.9	7.2	
C $\succ$ A $\succ$ B	21.1	22.3	15.8	15.9	19.7	
C $\succ$ B $\succ$ A	6.7	7.9	3.6	12.1	8.7	

Panel B. Experiment 3 (weighted)									
Ranking	E1	E2	E3	E4	H1	H2	H3	H4	
A $\succ$ B $\succ$ C	19.1	18.6	15.5	18.0	23.4	17.6	33.0	30.7	
A $\succ$ C $\succ$ B	18.7	10.5	18.2	21.5	22.7	10.3	27.7	39.7	
B $\succ$ A $\succ$ C	26.2	25.1	22.7	16.7	8.5	22.0	11.3	9.8	
B $\succ$ C $\succ$ A	4.4	14.7	17.0	13.9	7.6	11.8	6.1	3.6	
C $\succ$ A $\succ$ B	29.3	15.9	17.0	14.8	25.3	20.3	12.6	13.2	
C $\succ$ B $\succ$ A	2.4	15.0	9.5	15.2	12.5	18.0	9.3	3.0	

Notes: Each cell reports the ownership-weighted share with the given strict ranking in that scenario. Only Experiments 1 and 3 are included.

Table A16: Preference-structure diagnostics: weighted results

Experiment	Ordering	Respondents	Constraints	Binding	Violations
<i>Panel A</i>					
Exp. 1	B–A–C	1,456	90	25	0
Exp. 3	B–A–C	2,418	144	38	0
	<i>additional: A–B–C</i>		18	9	0
<i>Panel B</i>					
Exp. 6	D–B–A–C	970	180	58	0
Exp. 7	B–(A+B)–{A,B+C}–(A+C)–C	1,921	96	36	0
All		6,765	528	166	0

Notes: The table reports ownership-weighted single-crossing diagnostics for the experiments with investment-holdings weights available. Panel A reproduces the weighted diagnostics for Experiments 1 and 3; Panel B adds the four-outcome bundle extension in Experiment 6 and the six-outcome partial-axis diagnostic in Experiment 7. For Experiment 7, the displayed partial axis abbreviates the two tested orderings B–(A+B)–A–(B+C)–(A+C)–C and B–(A+B)–(B+C)–A–(A+C)–C, matching the notation in the main text. Respondents reports the unweighted number of respondents contributing rankings. Constraints, binding constraints, and violations are computed from ownership-weighted group shares using the compressed investment-value weight; exact 50–50 weighted group splits are treated as non-binding.

Table A17: Weighted single-peakedness results

Scenario	N	SP fit (%)	95% CI
<i>Experiment 1: fixed ex ante axis, B–A–C</i>			
Alphabet	1,456	90.4	[88.5, 92.3]
Microsoft	1,456	89.4	[87.5, 91.2]
Amazon	1,456	95.4	[94.1, 96.7]
Meta	1,456	82.0	[79.7, 84.3]
Berkshire Hathaway	1,456	84.1	[81.9, 86.2]
<i>Experiment 3: best-fitting middle alternative selected in sample</i>			
E1	1,235	93.3	[91.4, 94.9]
E2	1,183	73.6	[71.0, 76.9]
E3	1,207	73.5	[70.0, 76.9]
E4	1,211	70.9	[68.0, 74.4]
H1	1,226	79.9	[76.7, 83.1]
H2	1,197	70.2	[68.6, 73.8]
H3	1,148	84.6	[81.6, 87.3]
H4	1,192	93.4	[91.4, 95.2]

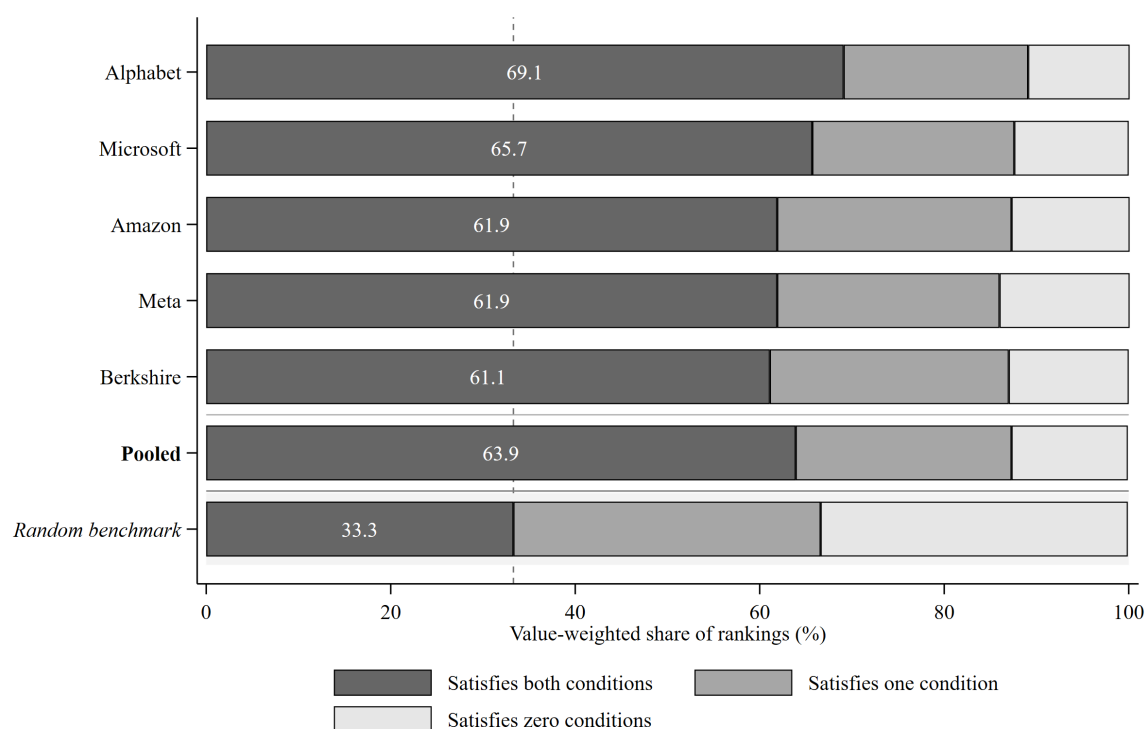
Notes: The table reports ownership-weighted single-peakedness fit in each three-alternative scenario. N reports the unweighted number of valid respondents; SP fit and confidence intervals use the tiered 0–4 investment-holdings weight. With three alternatives, a ranking is single-peaked with respect to an axis if and only if the middle alternative is not ranked last. In Experiment 1, the axis is fixed ex ante at B–A–C, so A is the middle alternative. In Experiment 3, no axis is imposed ex ante; the middle alternative is selected to maximize the weighted fit. Confidence intervals are percentile bootstrap intervals based on 2,000 respondent-level resamples. For Experiment 3, the bootstrap re-selects the best-fitting middle alternative in each resample, so the interval reflects the endogenous middle-alternative rule.

Table A18: Ownership-weighted voting-rule performance in the six-option module

Rule	Point-estimate winner	Share selecting non-score-maximizing option (%)	Mean score-based loss (%) [95% interval]
Plurality	B+C	33.1	3.1 [0.0, 10.8]
Borda	B+C	0.7	0.0 [0.0, 0.0]
Condorcet	B+C	0.7	0.0 [0.0, 0.0]
IRV	B+C	5.2	0.1 [0.0, 1.2]

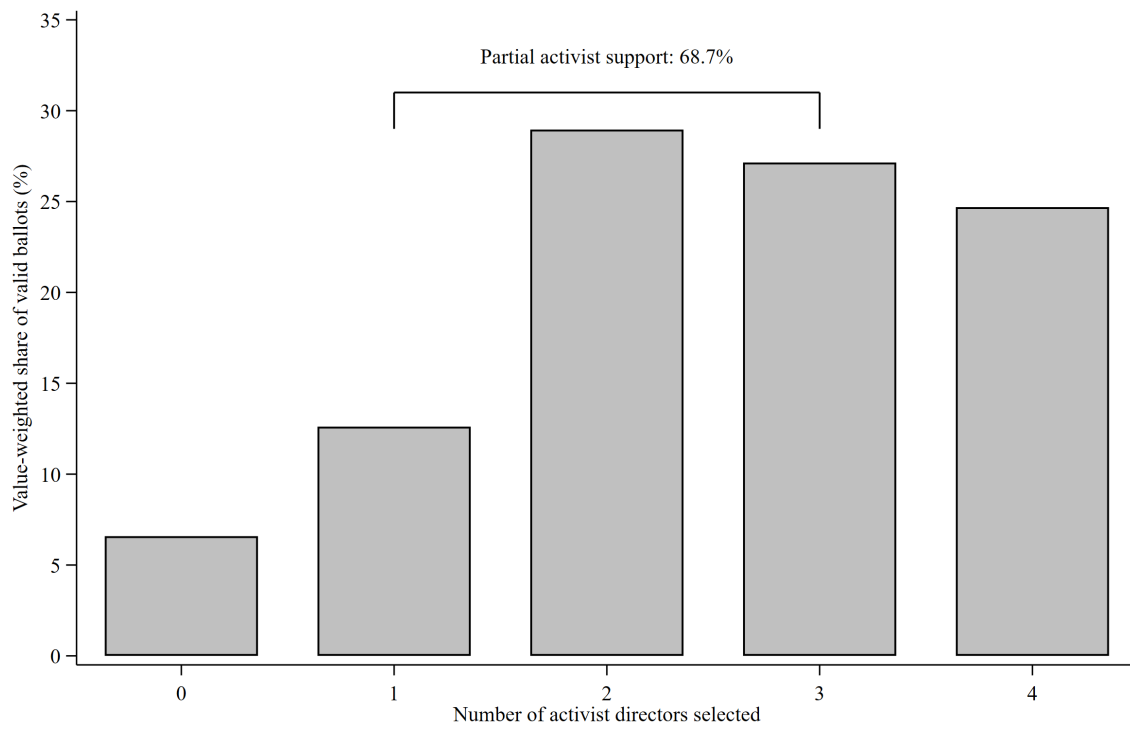
Notes: The table replicates Table 3 with investment-holdings weights. The point-estimate winner is computed in the full weighted sample; the score-maximizing option is B+C.

Figure A4: Ownership-Weighted Issue Separability in the Bundle Task



Notes: The figure reports the ownership-weighted share of respondent-scenario rankings in Experiment 6 that satisfy both, one, or zero of the two issue-separability conditions implied by the 2×2 bundle geometry. The random benchmark assigns 33.3% to each category. Weights use the tiered investment-holdings measure described in Online Appendix D.2.

Figure A5: Ownership-Weighted Distribution of Voter-Intended Board Composition



Notes: The figure reports the ownership-weighted distribution of the number of activist directors selected on respondents' candidate-level ballots in Experiment 7. Weights use the tiered investment-holdings measure described in Online Appendix D.2.

E Experimental instructions

E.1 Experiment 1

Survey flow for Experiment 1. Figures A6 -A25 reproduce the survey materials used in Experiment 1. Respondents first completed a set of data-quality checks, including consent, bot-detection tasks, and an instructed-response attention check. These checks were also used in Experiments 6 and 7. They then answered the main ranking task, in which they ranked three voting strategies in each of five firm scenarios constructed from actual proxy-ballot items: Alphabet, Microsoft, Amazon, Meta, and Berkshire Hathaway. After completing the ranking tasks, each respondent was randomly assigned to one of the five scenarios for willingness-to-pay elicitation. In that module, respondents made incentivized choices between having the researchers cast a shareholder vote according to a higher-ranked strategy and receiving a personal cash bonus while the vote was cast according to a lower-ranked strategy. The module elicited willingness to pay for the first-ranked over the third-ranked strategy and for the second-ranked over the third-ranked strategy, with verification screens allowing respondents to confirm or revise their implied switching points.

Before we begin, please confirm that you are not a robot.

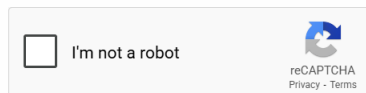
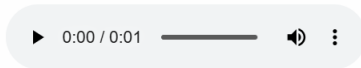


Figure A6: Bot check.

Please follow the instructions in the audio to answer the question below.

This is to identify bots, as they cannot interpret audio easily.



Your answer:

Figure A7: Bot check (audio check).

What is your favorite month of the year? Please explain in about 15 to 30 words.

Figure A8: Bot check (typing speed and pattern).

The next question is about the following problem. In questionnaires like ours, sometimes there are participants who do not carefully read the questions and just quickly click through the survey. This means that there are a lot of random answers which compromise the results of research studies. To show that you read our questions carefully, please choose both "Very strongly interested" and "Not at all interested" as your answer in this question.

How interested are you in sports?

☐ Very strongly interested

☐ Very interested

☐ A little bit interested

☐ Almost not interested

☐ Not at all interested

Figure A9: Attention check.

How would you describe your political ideology?

☐ Strongly right-wing

☐ Right-wing

☐ Centrist

☐ Left-wing

☐ Strongly left-wing

☐ Prefer not to say

Figure A10: Political ideology.

Note: Half of respondents were shown this and the next question at the end of the survey.

What is the total value of your investments in stocks and mutual funds?

- ☐ \$0
- ☐ Between \$0 and \$10,000
- ☐ Between \$10,000 and \$100,000
- ☐ Between \$100,000 and \$1,000,000
- ☐ More than \$1,000,000
- ☐ Prefer not to say

Figure A11: Value of investments

In the following questions, you will be asked about shareholder voting at five major U.S. companies. At shareholder meetings, investors can vote on proposals submitted by other shareholders. The company's management, including the board of directors, typically recommends how shareholders should vote on each proposal. For each company, we will describe two shareholder proposals and ask you to rank **three voting strategies**.

Important: These are not the only possible voting strategies. Other combinations may exist. For the purposes of this study, however, we ask you to rank only the three strategies shown.

Figure A12: Introduction to scenarios

Imagine you own shares in Alphabet (Google). At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Human rights:** Conduct a human rights impact assessment of Alphabet's AI-driven targeted advertising policies.
- **Climate:** Provide enhanced disclosure on Alphabet's climate goals.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

Prioritize human rights (Vote FOR human rights, AGAINST climate)
Prioritize climate (Vote FOR climate, AGAINST human rights)
Support management (Vote AGAINST both proposals)

Figure A13: Alphabet scenario

Imagine you own shares in Microsoft. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Human rights:** Report on Microsoft's data operations in human rights hotspots.
- **Climate:** Report on the climate and financial risks of providing AI tools for oil and gas development.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

Prioritize human rights (Vote FOR human rights, AGAINST climate)
Prioritize climate (Vote FOR climate, AGAINST human rights)
Support management (Vote AGAINST both proposals)

Figure A14: Microsoft scenario

Imagine you own shares in Amazon. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Worker conditions:** Conduct an independent audit on warehouse working conditions.
- **Climate:** Disclose how data center growth affects Amazon's climate goals.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

Prioritize worker conditions (Vote FOR worker conditions, AGAINST climate)
Prioritize climate (Vote FOR climate, AGAINST worker conditions)
Support management (Vote AGAINST both proposals)

Figure A15: Amazon scenario

Imagine you own shares in Meta Platforms. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Anti-hate:** Issue a report on hate targeting marginalized communities on Meta's platforms.
- **Climate:** Disclose a transition plan to reduce greenhouse gas emissions despite data-center growth.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

Prioritize anti-hate (Vote FOR anti-hate, AGAINST climate)

Prioritize climate (Vote FOR climate, AGAINST anti-hate)

Support management (Vote AGAINST both proposals)

Figure A16: Meta scenario

Imagine you own shares in Berkshire Hathaway. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **AI governance:** Create an independent board committee focused on oversight of artificial intelligence.
- **Climate:** Report on the “clean energy supply financing ratio” versus fossil-fuel supply financing.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

Prioritize AI governance (Vote FOR AI governance, AGAINST climate)
Prioritize climate (Vote FOR climate, AGAINST AI governance)
Support management (Vote AGAINST both proposals)

Figure A17: Berkshire Hathaway scenario

In this part of the study, we want to understand **how much you value** having a **shareholder vote cast** according to your preferred voting strategy.

Everyone will make several decisions that involve a trade-off between ***having a higher-ranked voting choice implemented*** and ***receiving a personal cash bonus*** through Prolific. To make these decisions real, we will **randomly select one participant** and **one of their decisions**, and implement the option chosen in that decision.

These decisions concern **Microsoft**, where the voting strategies you ranked earlier involved **Human rights** and **Climate**.

Figure A18: WTP introduction

Note: Respondents were randomly assigned to one of the five scenarios above; this example shows the Microsoft scenario.

In the next screen, you will see a table with two options in each decision.

- One option offers no cash bonus, and the shareholder vote is cast according to your higher-ranked voting choice from earlier.
- The other option offers a cash bonus, and the shareholder vote is cast according to your lower-ranked voting choice from earlier.

Figure A19: WTP introduction

We implement the selected participant's choice by purchasing one share of the firm and exercising its voting rights at the next shareholder meeting. If the relevant proposal does not appear on the Microsoft 2026 ballot, the voting cannot be implemented, but the randomly selected participant will still receive the cash bonus from the randomly selected decision.

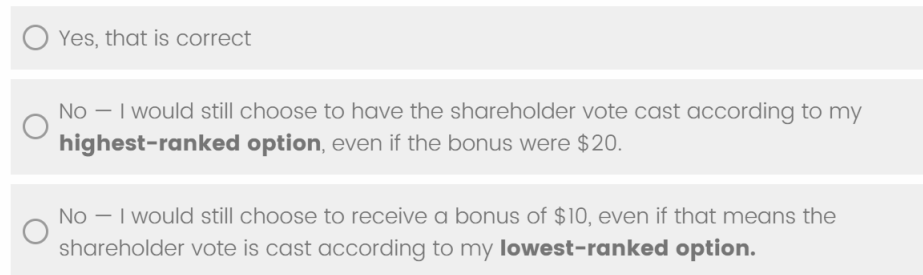
Figure A20: WTP explanation

For each row, select which option you prefer:

We vote for your highest-ranked choice	☐ ☐	\$0 bonus and we vote for your lowest-ranked choice
We vote for your highest-ranked choice	☐ ☐	\$1 bonus and we vote for your lowest-ranked choice
We vote for your highest-ranked choice	☐ ☐	\$2 bonus and we vote for your lowest-ranked choice
We vote for your highest-ranked choice	☐ ☐	\$3 bonus and we vote for your lowest-ranked choice
We vote for your highest-ranked choice	☐ ☐	\$10 bonus and we vote for your lowest-ranked choice
We vote for your highest-ranked choice	☐ ☐	\$20 bonus and we vote for your lowest-ranked choice

Figure A21: WTP elicitation for first versus third.

Based on your answers, you prefer no bonus (and we vote your highest-ranked strategy) when the bonus is \$10 or less, but you prefer taking the bonus (and we vote your lowest-ranked strategy) when the bonus is \$20 or more. Is that correct? If not, you will have an opportunity to revise your response on the next page.



☐ Yes, that is correct

☐ No — I would still choose to have the shareholder vote cast according to my **highest-ranked option**, even if the bonus were \$20.

☐ No — I would still choose to receive a bonus of \$10, even if that means the shareholder vote is cast according to my **lowest-ranked option**.

Figure A22: WTP verification

Note: This example illustrates the verification screen for a respondent who switches from the vote option to the bonus option between \$10 and \$20.

In the previous questions, we examined how much you were willing to give up in order for us to cast a shareholder vote based on your highest-ranked choice rather than your lowest-ranked choice.

We will now focus on a similar comparison, but instead between your second-ranked choice and your lowest-ranked choice, for the same investment issue.

In each question below, you will decide between receiving a personal bonus and having us vote according to your lowest-ranked choice, or receiving no bonus and having us vote according to your second-ranked choice.

Reminder: For your assigned company Microsoft, the voting strategies you ranked involved Human rights and Climate.

Figure A23: WTP for second vs third

Which option do you prefer?

We vote for your second-ranked choice	☐ ☐	\$0 bonus and we vote for your lowest-ranked choice
We vote for your second-ranked choice	☐ ☐	\$1 bonus and we vote for your lowest-ranked choice
We vote for your second-ranked choice	☐ ☐	\$2 bonus and we vote for your lowest-ranked choice
We vote for your second-ranked choice	☐ ☐	\$3 bonus and we vote for your lowest-ranked choice
We vote for your second-ranked choice	☐ ☐	\$10 bonus and we vote for your lowest-ranked choice
We vote for your second-ranked choice	☐ ☐	\$20 bonus and we vote for your lowest-ranked choice

Figure A24: WTP elicitation for second vs third.

Based on your answers, you prefer no bonus (and we vote your second-ranked strategy) when the bonus is \$2 or less, but you prefer taking the bonus (and we vote your lowest-ranked strategy) when the bonus is \$3 or more. Is that correct? If not, you will have an opportunity to revise your response on the next page.

☐ Yes, that is correct

☐ No – I would still choose to have the shareholder vote cast according to my **second-ranked option**, even if the bonus were \$3.

☐ No – I would still choose to receive a bonus of \$2, even if that means the shareholder vote is cast according to my **lowest-ranked option**.

Figure A25: WTP verification

Note: This example illustrates the verification screen for a respondent who switches from the vote option to the bonus option between \$2 and \$3.

E.2 Experiment 2: Translated respondent instructions

This section reproduces an English translation of the respondent-facing instructions used in Experiment 2. The translation follows the Norwegian Sovereign Wealth Fund (referred to

as the Government Pension Fund Global or the Oil Fund in Norway) framing used in the original survey, while retaining the simplified descriptions of the shareholder proposals used elsewhere.

Introduction. In this section, you will be asked to consider shareholder votes in five large publicly listed companies.

As a resident of Norway, you are an indirect co-owner of the Government Pension Fund Global (the Oil Fund), which is the world's largest sovereign wealth fund. The Oil Fund is a large shareholder in many international companies, including the companies in this survey, and votes at shareholder meetings on proposals that may affect companies' priorities and strategy.

For each company, we ask you to rank three possible voting strategies according to which strategy you think the Oil Fund should follow. Rank the strategies by dragging them into your preferred order, with the strategy you prefer most at the top.

Important: Other voting strategies also exist, but in this study we ask you to rank only the three strategies shown. In this task, please assume that the Oil Fund can support maximum one of the proposals in order to indicate what you prioritize most.

Alphabet. The Oil Fund is a large shareholder in Alphabet (Google), and we want to know how you think the Oil Fund should use its voting rights.

Suppose that shareholders will vote on two proposals that Alphabet's board recommends voting against:

- **Human rights:** Conduct a human rights impact assessment of Alphabet's AI-driven targeted advertising policies.
- **Climate:** Provide enhanced disclosure on Alphabet's climate goals.

Rank the strategies according to the voting choice you would most want the Oil Fund to follow. Place the strategy you prefer most at the top.

- Support the human-rights proposal.
- Support the climate proposal.
- Vote against both proposals.

Microsoft. The Oil Fund is a large shareholder in Microsoft, and we want to know how you think the Oil Fund should use its voting rights.

Suppose that shareholders will vote on two proposals that Microsoft's board recommends voting against:

- **Human rights:** Report on Microsoft's data operations in human rights hotspots.
- **Climate:** Report on the climate and financial risks of providing AI tools for oil and gas development.

Rank the strategies according to the voting choice you would most want the Oil Fund to follow. Place the strategy you prefer most at the top.

- Support the human-rights proposal.
- Support the climate proposal.
- Vote against both proposals.

Amazon. The Oil Fund is a large shareholder in Amazon, and we want to know how you think the Oil Fund should use its voting rights.

Suppose that shareholders will vote on two proposals that Amazon's board recommends voting against:

- **Worker conditions:** Conduct an independent audit on warehouse working conditions.
- **Climate:** Disclose how data center growth affects Amazon's climate goals.

Rank the strategies according to the voting choice you would most want the Oil Fund to follow. Place the strategy you prefer most at the top.

- Support the worker-conditions proposal.
- Support the climate proposal.
- Vote against both proposals.

Meta Platforms. The Oil Fund is a large shareholder in Meta Platforms, and we want to know how you think the Oil Fund should use its voting rights.

Suppose that shareholders will vote on two proposals that Meta's board recommends voting against:

- **Anti-hate:** Issue a report on hate targeting marginalized communities on Meta's platforms.
- **Climate:** Disclose a transition plan to reduce greenhouse gas emissions despite data-center growth.

Rank the strategies according to the voting choice you would most want the Oil Fund to follow. Place the strategy you prefer most at the top.

- Support the anti-hate proposal.
- Support the climate proposal.
- Vote against both proposals.

Berkshire Hathaway. The Oil Fund is a large shareholder in Berkshire Hathaway, and we want to know how you think the Oil Fund should use its voting rights.

Suppose that shareholders will vote on two proposals that Berkshire Hathaway's board recommends voting against:

- **AI governance:** Create an independent board committee focused on oversight of artificial intelligence.
- **Climate:** Report on the “clean energy supply financing ratio” versus fossil-fuel supply financing.

Rank the strategies according to the voting choice you would most want the Oil Fund to follow. Place the strategy you prefer most at the top.

- Support the AI-governance proposal.
- Support the climate proposal.
- Vote against both proposals.

E.3 Experiment 3

This section reports the respondent-facing materials used in Experiment 3. The text below reproduces the full wording of the ranking scenarios and willingness-to-pay questions. The screenshots provide examples of the survey interface.

Respondents first completed the consent screen and an instructed-response attention check. They were then introduced to a set of shareholder-ranking tasks. The introductory screen explained that shareholders can vote on the types of investments companies should pursue, and that the purpose of the section was to understand respondents’ preferences over different investment options.

E.3.1 Hypothetical scenarios

Respondents were randomly assigned to two of four hypothetical scenarios. Each scenario asked respondents to imagine owning shares in a company facing a trade-off between a climate-oriented option, a non-climate social or stakeholder-oriented option, and a profit-oriented option. In every scenario, respondents ranked the three options by dragging and

dropping them into their preferred order, with the most preferred option at the top and the least preferred option at the bottom.

Scenario H1: Battery production. Respondents saw the following text:

Imagine you own shares in a company that is considering investing in battery production for electric vehicles and renewable energy. Shareholders will soon vote on the direction the company should take. Some shareholders believe the company should stop the investment due to concerns about harmful labor practices, including child labor, in the supply chain. Others believe the company should continue with the investment to help reduce carbon emissions and combat climate change, even if the project is only marginally unprofitable. A third group believes the company should proceed with the investment only if it remains profitable.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Stop the investment due to concerns about harmful labor practices.
- Continue the investment to help combat climate change, even if unprofitable.
- Continue the investment only if it is profitable.

Scenario H2: Irrigation in a water-scarce region. Respondents saw the following text:

Imagine you own shares in an agricultural company that is deciding on irrigation methods for large-scale farming in a water-scarce region. Shareholders will soon vote on how to proceed. Some shareholders advocate for implementing a highly

efficient irrigation system, which conserves water but requires more energy and results in higher carbon emissions. Others argue that the company should use traditional irrigation, which consumes more water but requires less energy and produces lower emissions. A third group believes the company should move forward with the project only if it is profitable.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Conserve water with an efficient irrigation system, even though it produces more emissions.
- Use traditional irrigation, which consumes more water but produces lower emissions.
- Choose the irrigation system that is most profitable.

Scenario H3: Hydroelectric power and indigenous rights. Respondents saw the following text:

Imagine you own shares in a company that is considering investing in a hydroelectric power plant on a river that flows through indigenous lands. Shareholders will soon vote on how to proceed. Some shareholders believe the company should halt the project to avoid infringing on indigenous rights and disrupting their traditional way of life. Others argue that the company should continue with the project to generate clean energy and reduce carbon emissions, even if it negatively impacts the indigenous communities. A third group believes the company should move forward with the project only if it is profitable.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the

bottom.

The three options were:

- Stop the project to protect indigenous rights.
- Continue the project to generate clean energy, even if not profitable.
- Continue the project only if profitable.

Scenario H4: Environmentally friendly production process. Respondents saw the following text:

Imagine you own shares in a manufacturing company that is considering investing in a new type of environmentally-friendly production process. Shareholders will soon vote on how to proceed. Some shareholders advocate for implementing the new process, which significantly reduces carbon emissions, but there are concerns about the potential health and safety risks for workers due to the use of untested chemicals. Others argue that the company should continue using the existing production process, which is safer for workers but produces higher emissions. A third group believes the company should move forward with the project only if it is profitable.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Implement the new process to lower carbon emissions despite the health and safety risks.
- Continue with the existing process to ensure worker safety.
- Choose the process that is most profitable.

E.3.2 Potentially consequential Equinor scenarios

After the hypothetical scenarios, respondents were told that the study would transition to decisions that could have real-world consequences. The respondent-facing text was:

Now, we will transition from hypothetical scenarios to decisions that could have real-world consequences. The researchers have purchased shares in the oil company Equinor and will cast a vote at the upcoming shareholder meeting based on the answers of one randomly selected respondent. To encourage honest rankings, please note that while the first choice of the selected individual will most likely be implemented, there is a small chance that the second choice may be chosen instead. The selected respondent's third choice will not be implemented.

Respondents were then randomly assigned to two of four Equinor scenarios. Each scenario asked respondents to rank three options by dragging and dropping them into their preferred order, with the most preferred option at the top and the least preferred at the bottom.

Scenario E1: New gas fields. Respondents saw the following text:

If you are randomly selected, you will decide how to vote if there is a shareholder vote on whether Equinor should explore new gas fields. Some shareholders advocate for stopping the development of new gas fields due to the environmental harm and long-term impact on climate change. However, with Europe facing an energy crisis linked to the ongoing war in Ukraine, other shareholders believe the company should continue exploring new gas fields to support Europe's energy needs. Another group believes the company should proceed with developing all profitable gas fields, even if the war in Ukraine and the energy crisis eventually end.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Develop all profitable gas fields.
- Stop the development of all new gas fields.
- Develop new gas fields only during the crisis.

Scenario E2: Oil exports to developing countries. Respondents saw the following text:

If you are randomly selected, you will decide how to vote if there is a shareholder vote on whether Equinor should reduce its exports of oil to developing countries. Some shareholders advocate for reducing oil exports to align with global climate goals and reduce carbon emissions. However, other shareholders are concerned that reducing exports could lead to increased poverty and economic hardship in countries that rely heavily on affordable energy from oil imports, so they want to export even if this becomes less profitable than other projects. A third group believes the company should continue exporting oil to these countries as long as it remains profitable.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Reduce oil export to align with climate goals.
- Keep oil exports to poor countries, even if it is less profitable than other projects.
- Export oil only as long as it is profitable.

Scenario E3: Electrification of oil production. Respondents saw the following text:

If you are randomly selected, you will have the opportunity to decide how to vote in a shareholder meeting on whether Equinor should electrify its oil production. Some shareholders support moving forward with electrification to help combat climate change and reduce the carbon footprint of oil production, even if it might be unprofitable. Others are concerned that the increased demand for electricity could drive up energy costs for households, particularly in regions already facing high electricity prices. A third group believes that the company should only proceed with electrification if it proves to be a profitable investment.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Electrify oil production to help combat climate change, even if unprofitable.
- Electrify oil production only if profitable.
- Do not electrify oil production to avoid higher energy costs for households.

Scenario E4: Offshore wind. Respondents saw the following text:

If you are randomly selected, you will have the opportunity to decide how to vote in a shareholder meeting on whether Equinor should develop offshore wind farms. Some shareholders are concerned about the potential negative impact on local fishing communities and biodiversity and believe the project should be stopped. Others argue that the company should proceed with the offshore wind farm to help reduce carbon emissions and combat climate change, even if it disrupts the local fishing industry. A third group supports moving forward with the project, but only if it proves to be profitable.

Please rank the three options by dragging and dropping them into your preferred order, with the most preferred option at the top and the least preferred at the bottom.

The three options were:

- Stop all wind farms due to concerns about the impact on local fishing communities and biodiversity.
- Develop wind farms even if they are not profitable to support climate goals.
- Develop wind farms only if they are profitable.

E.3.3 Willingness-to-pay elicitation

After the ranking tasks, willingness to pay was elicited for a randomly chosen Equinor scenario. Respondents first saw the following introduction:

The following questions are designed to assess how much you value us voting for your top-ranked option among the three previously described. We have acquired an additional Equinor share, and one randomly selected person will decide how we should vote if this issue comes up at the next shareholder meeting. This person will choose between receiving a personal bonus or ensuring that we vote for their highest-ranked option.

Depending on which Equinor scenario was selected for WTP elicitation, respondents then saw one of the following scenario-specific prompts:

E1: New gas fields. We want to understand how much you value your preferred choice regarding whether Equinor should explore new gas fields—an action that could have harmful effects on the climate but also help address Europe’s energy crisis.

E2: Oil exports to developing countries. We want to understand how much you value your preferred choice regarding whether Equinor should stop exporting oil to poorer countries—an action that could benefit the climate but negatively impact people in those countries who depend on energy access.

E3: Electrification of oil production. We want to understand how much you value your preferred choice regarding whether Equinor should electrify its oil production—an action that could benefit the climate but may lead to higher energy costs for households.

E4: Offshore wind. We want to understand how much you value your preferred choice regarding whether Equinor should develop wind farms—an action that could benefit the climate but might negatively impact fisheries and biodiversity.

The first elicitation measured willingness to give up a personal bonus in order to have the researchers vote for the respondent's highest-ranked option rather than the respondent's lowest-ranked option. For each bonus amount, respondents answered the question “Which option do you prefer?” and chose between the following two options:

- Receive a \$1 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your highest-ranked choice.
- Receive a \$3 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your highest-ranked choice.
- Receive a \$5 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your highest-ranked choice.
- Receive a \$10 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your highest-ranked choice.

Figure A26 shows an example of this first-versus-third elicitation.

Which option do you prefer?

☐ Receive a \$1 bonus, and we will vote for your lowest-ranked choice.

☐ Receive no bonus, and we will vote for your highest-ranked choice.

Figure A26: Example of the WTP elicitation for the first-ranked versus third-ranked choice.

The second elicitation compared the respondent's second-ranked option to the respondent's lowest-ranked option. Respondents saw the following transition text:

We now have acquired an additional Equinor share, and we will assign voting rights to one randomly selected respondent. We want to understand how much you value having us vote for your second-ranked choice versus your lowest-ranked choice on the same investment issue as in the previous questions. If selected, we will vote for your lowest-ranked choice if you choose the personal bonus, or your second-ranked choice if you do not. Regardless of your answer, we will not vote for your top-ranked choice.

For each bonus amount, respondents again answered the question "Which option do you prefer?" and chose between the following two options:

- Receive a \$1 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your second highest-ranked choice.
- Receive a \$3 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your second highest-ranked choice.
- Receive a \$5 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your second highest-ranked choice.
- Receive a \$10 bonus, and we will vote for your lowest-ranked choice; or receive no bonus, and we will vote for your second highest-ranked choice.

Figure A27 shows an example of this second-versus-third elicitation.

Which option do you prefer?

- ☐ Receive a \$1 bonus, and we will vote for your lowest-ranked choice.
- ☐ Receive no bonus, and we will vote for your **second highest-ranked** choice.

Figure A27: Example of the WTP elicitation for the second-ranked versus third-ranked choice.

E.3.4 Other questions

At the end of the survey, respondents answered the following political-ideology question:

How would you describe your political ideology?

The response options were:

- Strongly right-wing.
- Right-wing.
- Centrist.
- Left-wing.
- Strongly left-wing.
- Prefer not to say.

Respondents were also asked:

What is the total value of your investments in stocks and mutual funds?

The response options were:

- \$0.

- Between \$0 and \$10,000.
- Between \$10,000 and \$100,000.
- Between \$100,000 and \$1,000,000.
- More than \$1,000,000.
- Prefer not to say.

E.4 Experiment 4

This section reports the respondent-facing materials used in Experiment 4. The text below reproduces the full wording of the board-candidate ranking scenarios. The screenshots provide examples of the survey interface.

Respondents first completed the consent screen and an instructed-response attention check. They were then introduced to a set of board-election ranking tasks. The introductory screen explained that, for respondents who invest in mutual funds or ETFs, their fund represents ownership in a wide range of companies. Respondents were asked to think of their “main fund” as the mutual fund or ETF in which they had the largest investment, or the one they considered most important. They were told that shareholders of the companies in which their fund invests make key decisions each year, including voting on who will serve on the board of directors. Instead of voting directly, respondents were told that their main fund votes on their behalf at these meetings. The introduction further explained that board candidates can have different priorities and goals for the company, and that the way the fund votes can significantly influence the direction these companies take in the future. Respondents were then asked whether this was clear before proceeding.

E.4.1 Board-candidate ranking scenarios

Respondents evaluated six board-election scenarios. In each scenario, respondents were told that their main fund may each year vote in several large companies of a given type, and

that the candidates running for the board have different priorities and focus areas if elected. Respondents then ranked the three candidates from 1 (most preferred) to 3 (least preferred). Figure A28 shows an example of the board-candidate ranking task.

Scenario B1: Artificial intelligence. Respondents saw the following text:

Your main fund may each year vote in several large technology companies that develop artificial intelligence (AI). The candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives to reduce carbon footprints, such as greener data centers.

Candidate AI-Risk: Will combine profit with initiatives to reduce risks associated with artificial intelligence.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

Your main fund may each year vote in several large technology companies that develop artificial intelligence (AI). The candidates running for the board have different priorities and focus areas if elected:

- Candidate Profit: Will focus on maximizing profit.
- Candidate Climate: Will combine profit with initiatives to reduce carbon footprints, such as greener data centers.
- Candidate AI-Risk: Will combine profit with initiatives to reduce risks associated with artificial intelligence.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

Candidate Climate
Candidate AI-Risk
Candidate Profit

Figure A28: Example of a board-candidate ranking scenario: Scenario B1.

Scenario B2: Unions. Respondents saw the following text:

Your main fund may each year vote in several large manufacturing companies operating factories in low-cost countries. The candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives for carbon-neutral production.

Candidate Union: Will combine profit with initiatives to improve opportunities for factory workers to organize through unions.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

Scenario B3: Gender quotas. Respondents saw the following text:

Your main fund may each year vote in several large financial companies. The candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives for green investments.

Candidate Gender Quotas: Will combine profit with the introduction of policies to increase the proportion of women in the company's leadership.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

Scenario B4: Medicine access. Respondents saw the following text:

Your main fund may each year vote in several large biotechnology companies. The candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives to reduce the environmental impact of medical production.

Candidate Medicine Access: Will combine profit with initiatives to improve global access to medicine, including in low-income countries.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

Scenario B5: Data security. Respondents saw the following text:

Your main fund may each year vote in several large technology companies that face criticism for their handling of user data. The candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives to reduce the company's carbon footprint, such as sustainable data centers.

Candidate Data Security: Will combine profit with initiatives to secure user data through strict privacy policies and investments in security systems.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

Scenario B6: Animal welfare. Respondents saw the following text:

Your main fund may each year vote in several large food companies that rely on intensive animal farming for meat and dairy production. The candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives to reduce carbon emissions from agricultural production, such as transitioning to plant-based foods.

Candidate Animal Welfare: Will combine profit with initiatives to improve animal welfare, including less intensive farming and humane slaughter practices.

How should your main fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred).

E.4.2 Other question

At the end of the board-candidate ranking task, respondents answered the following political-ideology question:

How would you describe your political ideology?

The response options were:

- Strongly right-wing.
- Moderately right-wing.
- Centrist.
- Moderately left-wing.
- Strongly left-wing.
- Uncertain or prefer not to say.

E.5 Experiment 5

This section reports an English translation of the respondent-facing materials used in Experiment 5. The experiment was fielded in Norwegian. The text below provides the full translated instructions and scenario wording. To illustrate the original survey interface, I reproduce two screenshots from Scenario N1: one before any ranking was made and one after two candidates had been ranked.

E.5.1 Political ideology

Before the board-candidate ranking scenarios, respondents answered the following political ideology question:

Where would you place yourself on a traditional political scale from right to left?

The response options were:

- Right-wing.

- Moderately right-wing.
- Center.
- Moderately left-wing.
- Left-wing.
- Do not know.

E.5.2 Introduction

Respondents then saw the following introduction:

The Norwegian Sovereign Wealth Fund owns shares in many of the world's largest companies. As a Norwegian citizen, you therefore indirectly own a small part of these companies. Each year, company owners gather to make important decisions, such as voting on who should sit on the board. Board members may have different priorities and goals for the company, and how the Norwegian Sovereign Wealth Fund exercises its voting rights can have a significant impact on the future of these companies.

This survey aims to find out how Norwegians want the Norwegian Sovereign Wealth Fund to use its ownership power on behalf of the people. We will ensure that the survey results are heard by sharing them with the fund and by publishing the findings in Norwegian newspapers.

E.5.3 Board-candidate ranking scenarios

Respondents evaluated three board-election scenarios. In each scenario, they were told that the Norwegian Sovereign Wealth Fund votes each year in several large companies of a given type. They were then asked to assume that three candidates are running for the board and that the candidates have different priorities and focus areas if elected.

Respondents were asked to rank the three candidates from 1 (most preferred) to 3 (least preferred). In the survey interface, respondents could also select “Do not know” instead of submitting a complete ranking. Because “Do not know” responses do not provide a strict ranking of all three candidates, they are excluded from the ranking-based analyses. This is why the number of valid ranking observations varies across the three scenarios.

Scenario N1: Unions. Respondents saw the following text:

The Norwegian Sovereign Wealth Fund each year votes in several large manufacturing companies operating factories in low-cost countries. Assume that the three candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives for carbon-neutral production.

Candidate Union: Will combine profit with initiatives to improve opportunities for factory workers to organize through unions.

How should the fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred), or select “Do not know.”

Figures A29 and A30 show the original Norwegian interface for Scenario N1. The first screenshot shows the task before any ranking was made, while the second shows an example after two candidates had been placed in the ranking.

Oljefondet stemmer hvert år i flere store produksjonsbedrifter som driver fabrikker i lavkostland. Anta at de tre kandidatene som står på valg til styret har ulike prioriteringer, og at de vil fokusere på følgende saker dersom de blir valgt.

Hvordan mener du Oljefondet bør stemme? Rangér kandidatene fra 1 (mest foretrukket) til 3 (minst foretrukket).

Dra dine valg over til de nummererte boksene til venstre for å rangere alternativene.

1 2 3	Kandidat Klima : Vil kombinere profitt med tiltak for karbonnøytral produksjon. Kandidat Profitt : Vil prioritere maksimal profitt. Kandidat Fagforening : Vil kombinere profitt med bedre muligheter for de ansatte i fabrikkene til å organisere seg gjennom fagforeninger.
--	---

☐ Vet ikke

Figure A29: Scenario N1 in the original Norwegian survey interface, before any rankings were made.

Oljefondet stemmer hvert år i flere store produksjonsbedrifter som driver fabrikker i lavkostland. Anta at de tre kandidatene som står på valg til styret har ulike prioriteringer, og at de vil fokusere på følgende saker dersom de blir valgt.

Hvordan mener du Oljefondet bør stemme? Rangér kandidatene fra 1 (mest foretrukket) til 3 (minst foretrukket).

Dra dine valg over til de nummererte boksene til venstre for å rangere alternativene.

1 Kandidat Profitt : Vil prioritere maksimal profitt. 2 Kandidat Klima : Vil kombinere profitt med tiltak for karbonnøytral produksjon. 3	Kandidat Fagforening : Vil kombinere profitt med bedre muligheter for de ansatte i fabrikkene til å organisere seg gjennom fagforeninger.
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☐ Vet ikke

Figure A30: Scenario N1 in the original Norwegian survey interface, after two candidates had been ranked.

Scenario N2: Gender quotas. Respondents saw the following text:

The Norwegian Sovereign Wealth Fund each year votes in several large financial companies. Assume that the three candidates running for the board have different

priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives for green investments.

Candidate Gender Quotas: Will combine profit with the introduction of policies to increase the proportion of women in the company's leadership.

How should the fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred), or select "Do not know."

Scenario N3: Animal welfare. Respondents saw the following text:

The Norwegian Sovereign Wealth Fund each year votes in several large food companies that rely on intensive animal farming for meat and dairy production. Assume that the three candidates running for the board have different priorities and focus areas if elected:

Candidate Profit: Will focus on maximizing profit.

Candidate Climate: Will combine profit with initiatives for green investments.

Candidate Animal Welfare: Will combine profit with initiatives to improve animal welfare, including less intensive farming and more humane slaughter practices.

How should the fund vote? Rank the candidates from 1 (most preferred) to 3 (least preferred), or select "Do not know."

E.6 Experiment 6

This section reports the respondent-facing materials used in Experiment 6. The experiment used the same five firm scenarios as Experiment 1, but added a fourth voting strategy: supporting both shareholder proposals. The text below reproduces the full wording of the ranking scenarios. The screenshots provide examples of the survey interface.

Respondents first completed consent and data-quality checks, including bot-detection and attention-check tasks. The order of the ranking task and demographic questions was randomized, so that some respondents answered the demographic questions before the ranking scenarios and others answered them after the ranking scenarios.

E.6.1 Introduction

Respondents saw the following introduction to the ranking task:

In the following questions, you will be asked about shareholder voting at five major U.S. companies. At shareholder meetings, investors can vote on proposals submitted by other shareholders. The company's management, including the board of directors, typically recommends how shareholders should vote on each proposal. For each company, we will describe two shareholder proposals and ask you to rank four voting strategies.

E.6.2 Ranking scenarios

Respondents ranked four voting strategies in each of the five firm scenarios. In each case, the four strategies were: supporting only the non-climate proposal, supporting only the climate proposal, supporting neither proposal by following management, and supporting both proposals. Figure A31 shows the Alphabet scenario as a representative example of the ranking interface.

Alphabet. Respondents saw the following text:

Imagine you own shares in Alphabet (Google). At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Human rights:** Conduct a human rights impact assessment of Alphabet's AI-driven targeted advertising policies.
- **Climate:** Provide enhanced disclosure on Alphabet's climate goals.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

The four strategies were:

- Prioritize human rights (Vote FOR human rights, AGAINST climate).
- Prioritize climate (Vote FOR climate, AGAINST human rights).
- Support management (Vote AGAINST both proposals).
- Prioritize both issues (Vote FOR human rights, FOR climate).

Imagine you own shares in Alphabet (Google). At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Human rights:** Conduct a human rights impact assessment of Alphabet's AI-driven targeted advertising policies.
- **Climate:** Provide enhanced disclosure on Alphabet's climate goals.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

Support management (Vote AGAINST both proposals)
Prioritize both issues (Vote FOR human rights, FOR climate)
Prioritize climate (Vote FOR climate, AGAINST human rights)
Prioritize human rights (Vote FOR human rights, AGAINST climate)

Figure A31: Example of a four-strategy ranking scenario: Alphabet.

Microsoft. Respondents saw the following text:

Imagine you own shares in Microsoft. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Human rights:** Report on Microsoft's data operations in human rights hotspots.
- **Climate:** Report on the climate and financial risks of providing AI tools for oil and gas development.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

The four strategies were:

- Prioritize human rights (Vote FOR human rights, AGAINST climate).
- Prioritize climate (Vote FOR climate, AGAINST human rights).
- Support management (Vote AGAINST both proposals).
- Prioritize both issues (Vote FOR human rights, FOR climate).

Amazon. Respondents saw the following text:

Imagine you own shares in Amazon. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Worker conditions:** Conduct an independent audit on warehouse working conditions.

- **Climate:** Disclose how data center growth affects Amazon's climate goals.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

The four strategies were:

- Prioritize worker conditions (Vote FOR worker conditions, AGAINST climate).
- Prioritize climate (Vote FOR climate, AGAINST worker conditions).
- Support management (Vote AGAINST both proposals).
- Prioritize both issues (Vote FOR worker conditions, FOR climate).

Meta Platforms. Respondents saw the following text:

Imagine you own shares in Meta Platforms. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **Anti-hate:** Issue a report on hate targeting marginalized communities on Meta's platforms.
- **Climate:** Disclose a transition plan to reduce greenhouse gas emissions despite data-center growth.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

The four strategies were:

- Prioritize anti-hate (Vote FOR anti-hate, AGAINST climate).

- Prioritize climate (Vote FOR climate, AGAINST anti-hate).
- Support management (Vote AGAINST both proposals).
- Prioritize both issues (Vote FOR anti-hate, FOR climate).

Berkshire Hathaway. Respondents saw the following text:

Imagine you own shares in Berkshire Hathaway. At the upcoming shareholder meeting, investors will vote on how the company should respond to two shareholder proposals. The management (Board) recommends voting AGAINST both proposals below:

- **AI governance:** Create an independent board committee focused on oversight of artificial intelligence.
- **Climate:** Report on the “clean energy supply financing ratio” versus fossil-fuel supply financing.

Rank the strategies according to the voting choice you would most want taken as an owner of the company, by dragging them into your preferred order.

The four strategies were:

- Prioritize AI governance (Vote FOR AI governance, AGAINST climate).
- Prioritize climate (Vote FOR climate, AGAINST AI governance).
- Support management (Vote AGAINST both proposals).
- Prioritize both issues (Vote FOR AI governance, FOR climate).

E.6.3 Other questions

Respondents answered the following political-ideology question:

How would you describe your political ideology?

The response options were:

- Strongly right-wing.
- Right-wing.
- Centrist.
- Left-wing.
- Strongly left-wing.
- Prefer not to say.

Respondents were also asked:

What is the total value of your investments in stocks and mutual funds?

The response options were:

- \$0.
- Between \$0 and \$10,000.
- Between \$10,000 and \$100,000.
- Between \$100,000 and \$1,000,000.
- More than \$1,000,000.
- Prefer not to say.

E.7 Experiment 7

Experiment 7 included several modules. The paper reports only the six-option policy-ranking module and the universal-proxy board-election module. Accordingly, this section reproduces only the respondent-facing instructions for those parts of the experiment.

E.7.1 Six-option policy-ranking module

Respondents first saw the following introduction:

Energy companies often decide whether to explore and develop new gas fields.

These decisions can involve three main goals:

Profit: earning financial returns for shareholders.

Emission reduction: cutting CO₂ emissions and methane leaks.

Geopolitical stability: improving energy security.

Companies cannot fully prioritize all three goals at the same time. Placing greater emphasis on one goal typically means placing less emphasis on the others. On the next pages, you will be asked to rank different approaches an energy company could take when deciding whether to explore new gas fields.

Respondents then completed the six-option ranking task. Figure A32 shows the ranking interface. The respondent-facing text was:

In practice, companies often need to balance multiple goals at the same time. Below are different possible approaches an energy company could take when deciding whether to explore and develop new gas fields.

Please rank the following six approaches from most preferred (1) to least preferred (6).

When an approach lists two goals, assume the company gives similar priority to those two goals, while giving less priority to the third goal.

Below are different possible approaches an energy company could take when deciding whether to explore and develop new gas fields.

Please rank the following six approaches from most preferred (1) to least preferred (6).

When an approach lists two goals, assume the company gives similar priority to those two goals, while giving less priority to the third goal.

Only profit
Only geopolitical stability
Emission reduction + geopolitical stability
Only emission reduction
Emission reduction + profit
Geopolitical stability + profit

Figure A32: Six-option policy-ranking task.

After the ranking task, respondents evaluated the same six approaches on a cardinal scale.

Figure A33 shows the rating interface. The respondent-facing text was:

How good or bad do you think each approach below would be for the energy company? Please rate each approach on a scale from 0 to 10, where: 0 = extremely bad, 10 = extremely good.

How good or bad do you think each approach below would be for the energy company? Please rate each approach on a scale from 0 to 10, where: 0 = extremely bad, 10 = extremely good.

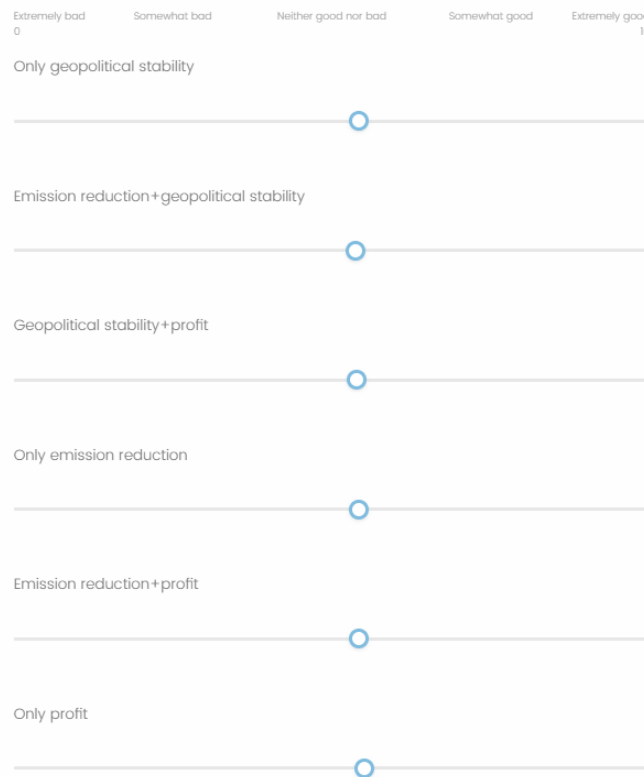


Figure A33: Six-option cardinal rating task.

E.7.2 Universal-proxy board-election module

Respondents then completed a stylized board-election task based on a real contested board election at Exxon. The introduction stated:

At the annual meeting, shareholders vote on who will serve on the company's board of directors. We will next present a scenario based on a real contested board election at Exxon, where an activist shareholder group nominated alternative director candidates. To keep the task simple, we use a stylized version of that election.

Respondents next received the following description of the election:

In this election, there are 4 open board seats and 8 candidates running for those seats. The four candidates with the most votes win.

The company nominated four incumbent directors, which we label Company nominee A, B, C, and D. These candidates broadly support the company's current strategy.

An activist shareholder group nominated four alternative candidates:

Goff (Oil Operations) focuses on improving efficiency and capital discipline in traditional oil and gas operations.

Hietala (Biofuels) focuses on developing and scaling low-carbon fuels such as renewable diesel.

Karsner (Clean Tech) focuses on clean-energy technology, innovation, and long-term transition planning.

Runevad (Wind) focuses on scaling wind power and managing large renewable-energy businesses.

Respondents were then asked to select up to four candidates. Figure A34 shows the candidate-level voting interface:

We are now interested in which candidates you would have voted for. *Please select up to four nominees you prefer most.*

☐	Karsner (Clean Tech)
☐	Company nominee A
☐	Company nominee C
☐	Company nominee B
☐	Company nominee D
☐	Goff (Oil Operations)
☐	Hietala (Biofuels)
☐	Runevad (Wind)

Figure A34: Candidate-level voting task in the universal-proxy board-election module (candidates presented in random order).

Finally, respondents ranked three board-composition proposals. Figure A35 shows the board-bundle ranking interface:

In this election, a firm that gives voting recommendations to investors proposed a **compromise proposal**. Specifically, this firm *recommended voting for two of the four activist-nominated candidates*: Goff (Oil Operations) and Karsner (Clean Tech) and two of the company nominees.

Now please rank the following three possible proposals for the open board seats, from 1 = Most preferred to 3 = Least preferred.

Company proposal (no activist-nominated candidates)
Compromise proposal (two activist-nominated candidates)
Activist proposal (four activist-nominated candidates)

Figure A35: Board-bundle ranking task.

E.7.3 Other questions

At the end of the survey, respondents answered the following political-ideology question:

How would you describe your political ideology?

The response options were:

- Strongly right-wing.
- Right-wing.
- Centrist.
- Left-wing.
- Strongly left-wing.
- Prefer not to say.

Respondents were also asked:

What is the total value of your investments in stocks and mutual funds?

The response options were:

- \$0.
- Between \$0 and \$10,000.
- Between \$10,000 and \$100,000.
- Between \$100,000 and \$1,000,000.
- More than \$1,000,000.
- Prefer not to say.

E.8 Experiment 8

Experiment 8 was fielded in Norwegian. The figures below reproduce English translations of the respondent-facing materials. Note that the option labels in these translated materials reproduce the labels shown to respondents. In the survey materials, Option A denotes the profit-maximizing alternative, Option B the geopolitical-stability alternative, and Option C the no-export alternative. In the main-text discussion and harmonized result tables for Experiments 8–10, I use the notation from the rest of the paper: (C) denotes the profit-oriented alternative, (A) the geopolitical-stability alternative, and (B) the no-export alternative. Thus, respondent-facing Options A, B, and C correspond to the main-text labels (C), (A), and (B), respectively.

Imagine now that you are responsible for the money of three people (Anne, Kari, and Knut), all of whom have invested the same amount of money with you.

You hold shares in a company that is considering investing in coal for export, with three possible approaches:

Option A: Export coal as long as it is profitable.

Option B: Export coal as long as it can contribute to geopolitical stability by reducing dependence on Russia.

Option C: No coal exports under any circumstances.

Your three clients have different priorities:

Anne prefers Option A the most, followed by Option B, and lastly Option C.

Kari prefers Option B the most, followed by Option C, and lastly Option A.

Knut prefers Option C the most, followed by Option A, and lastly Option B.

How would you vote on behalf of your clients?

☐ **Option A:** Export coal as long as it is profitable.

☐ **Option B:** Export coal only if it contributes to geopolitical stability by reducing dependency on Russia.

☐ **Option C:** No coal exports under any circumstances.

☐ Unsure/ I would abstain from voting.

Figure A36: Description of the cyclical-preference scenario.

Which of the following strategies would you use to decide how to vote on behalf of the owners in such cases?

☐	If it is difficult to determine what the majority truly prefers, it feels right to vote for the option that provides the highest profitability.
☐	If it is difficult to determine what the majority truly prefers, I would abstain from voting
☐	If it is difficult to determine what the majority truly prefers, I would choose the option I personally prefer.
☐	If it is difficult to determine what the majority truly prefers, I would try to assess the strength of the owners' preferences and choose the option with the highest average.

Figure A37: Question on approaches for resolving cyclical preferences.

Now assume that you voted for either Option A, B, or C and were later asked why you voted the way you did. How would you rationalize your decision?

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Figure A38: Open-ended question asking respondents to justify their aggregation choice.

E.9 Experiment 9

Experiment 9 was fielded in Norwegian. This section reports an English translation of the two respondent-facing questions.

E.9.1 Cyclical-preference scenario

Respondents first saw the following scenario:

When one invests in an equity fund, one buys units in the fund. The fund uses the money to buy shares in different companies. As an investor, one therefore owns a small part of the fund and, indirectly, a small part of the companies in which the fund has invested.

The fund manager manages the fund and exercises voting rights and other ownership rights on behalf of the owners.

Imagine that you are a fund manager and that three people—Anne, Kari, and Knut—have invested equal amounts in the fund you manage.

The fund you manage owns shares in a company that is considering investing in coal for export, with three possible approaches:

Alternative A: Export coal as long as it is profitable.

Alternative B: Export coal as long as it can contribute to geopolitical stability by reducing dependence on Russia.

Alternative C: No coal exports under any circumstances.

Your three clients have different priorities:

Anne prefers Alternative A the most, followed by Alternative B, and lastly Alternative C.

Kari prefers Alternative B the most, followed by Alternative C, and lastly Alternative A.

Knut prefers Alternative C the most, followed by Alternative A, and lastly Alternative B.

How would you vote on behalf of your clients?

Respondents could select one of the following options:

- Alternative A: Export coal as long as it is profitable.
- Alternative B: Export coal as long as it can contribute to geopolitical stability by reducing dependence on Russia.
- Alternative C: No coal exports under any circumstances.
- Unsure / would not vote.

E.9.2 Aggregation principle

Respondents were then asked:

Which of the following strategies would you use to decide how to vote on behalf of the owners in such cases?

The response options were:

- If it is difficult to know what the majority really thinks, it feels right to vote for the alternative that gives the highest profitability.
- If it is difficult to know what the majority really thinks, I would abstain from voting.
- If it is difficult to know what the majority really thinks, I would choose the alternative I personally prefer.
- If it is difficult to know what the majority really thinks, I would try to assess the strength of the owners' preferences and choose the alternative with the highest average.

E.10 Experiment 10

This section reports the respondent-facing materials used in Experiment 10. The experiment was fielded in English and asked respondents to imagine making voting decisions on behalf of a mutual fund whose owners have cyclical preferences.

E.10.1 Introduction

Respondents first saw the following introduction:

When people own stocks, they own a portion of the companies those stocks represent. This principle also applies to stocks owned through mutual funds. However, in the case of mutual funds, it is typically the company managing the fund that exercises the ownership rights on behalf of the owners.

Now, imagine you work for a mutual fund and are responsible for deciding how to use these ownership rights. To simplify, let us assume that only three owners—Anne, Mary, and Peter—have invested in your mutual fund, with each contributing the same amount of money.

E.10.2 Cyclical-preference scenario

Respondents then saw the following scenario:

The mutual fund you work for has purchased shares in a company that is evaluating whether to invest in coal production for export. The company is considering three possible approaches:

- **Option A:** Export coal as long as it is profitable.
- **Option B:** Export coal only if it contributes to geopolitical stability in Europe by reducing dependency on Russia.
- **Option C:** No coal exports under any circumstances.

The three owners who have invested equally in your mutual fund—Anne, Mary, and Peter—have different preferences regarding these options:

- Anne prefers Option A the most, followed by Option B, and lastly Option C.
- Mary prefers Option B the most, followed by Option C, and lastly Option A.
- Peter prefers Option C the most, followed by Option A, and lastly Option B.

At the upcoming shareholder meeting, the owners will vote on which approach the company should implement. Based on the preferences of the three investors, how would you cast the vote on their behalf?

Respondents could select one of the following options:

- Option A: Export coal as long as it is profitable.
- Option B: Export coal only if it contributes to geopolitical stability in Europe by reducing reliance on Russia.
- Option C: No coal exports under any circumstances.
- I would abstain from voting.

E.10.3 Aggregation principle

Respondents were then asked:

Which of the following strategies would you use to decide how to vote on behalf of the owners in such cases?

The response options were:

- If it is difficult to determine what the majority truly prefers, it feels right to vote for the option that provides the highest profitability.
- If it is difficult to determine what the majority truly prefers, I would abstain from voting.
- If it is difficult to determine what the majority truly prefers, I would choose the option I personally prefer.
- If it is difficult to determine what the majority truly prefers, I would try to assess the strength of the owners' preferences and choose the option with the highest average.

E.10.4 Open-ended justification

Finally, respondents saw the following open-ended question:

Now assume that you voted for either Option A, B, or C and were later asked why you voted the way you did. How would you rationalize your decision?

F Pre-analysis plans

F.1 Experiment 1



Algorithmic Shareholder Voting Experiment (#267097)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on:
2026/01/09 04:34 (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This study tests two pre-specified questions:

H1 (Preference structure).

Do shareholder preferences over three algorithmically constructed outcomes (A: non-climate social priority, B: climate priority, C: board-aligned/profit priority) satisfy the single-crossing condition when respondents are classified into left, center, and right political groups?

H2 (Aggregation performance).

How do common ordinal voting rules (plurality, Borda, Condorcet, runoff) perform in aggregating these preferences relative to a cardinal benchmark based on willingness-to-pay (WTP)?

All scenarios used in this experiment are generated mechanically by a pre-specified algorithm applied to real shareholder ballots, with no discretionary scenario selection.

3) Describe the key dependent variable(s) specifying how they will be measured.

The primary dependent variables are:

1. Ordinal rankings of three alternatives (A, B, C) for each of five scenarios.

2. WTP measures elicited for one randomly selected scenario per respondent:

a)WTP to secure the first-ranked alternative over the third-ranked alternative.

b)WTP to secure the second-ranked alternative over the third-ranked alternative.

WTP is elicited using a multiple price list consisting of six binary choices between having the researchers vote for a higher-ranked alternative or receiving a monetary bonus of \$0, \$1, \$2, \$3, \$10, or \$20.

4) How many and which conditions will participants be assigned to?

All respondents rank the three alternatives in five scenarios.

To limit respondent burden, each respondent is randomly assigned to provide WTP valuations for one of the five scenarios they ranked.

The order of demographic questions (including political ideology) is randomized such that approximately half of respondents answer demographics before the ranking tasks and half after.

No other treatments are used.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Respondents are classified into three political groups:

-Left (L): "left-wing" or "strongly left-wing"

-Middle (M): all other responses

-Right (R): "right-wing" or "strongly right-wing"

For each scenario, alternatives are ordered on a left-right dimension as B-A-C, where:

-B (climate priority) is defined as the most left-wing alternative,

-C (board-aligned/profit) is defined as the most right-wing alternative,

-A lies between B and C.

Version of AsPredicted Questions: 2.00
PDF generated: 2026/01/21 04:17 (PT)

Available at <https://aspredicted.org/kn7k58.pdf>

1/2

Single-crossing is tested by evaluating all 18 pairwise implications implied by this ordering (six for each unordered pair of alternatives).

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

All respondents who pass attention checks and bot-detection checks are included.

Bot checks include reCAPTCHA, an audio-based task, and a short writing task used to detect automated responses.

No trimming or winsorization of WTP responses is performed.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

1500

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

All scenarios are generated by a deterministic algorithm that maps real shareholder proposals into outcomes A, B, and C. The algorithm, including keyword dictionaries, support thresholds, and random seed for scenario selection, is fixed prior to data collection.

F.2 Experiment 2



Norway Experiment (follow up to #267097). (#276348)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on:
2026/03/02 04:56 (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This data collection replicates central parts of data collection #267097.

The main hypothesis is that individual preference rankings over shareholder voting strategies exhibit structured preferences consistent with single-crossing.

3) Describe the key dependent variable(s) specifying how they will be measured.

The dependent variables are respondents' complete rankings of three voting strategies in each of five company scenarios.

For each scenario, rankings will be coded as ordinal rankings (1 = most preferred, 3 = least preferred).

4) How many and which conditions will participants be assigned to?

There are no experimental treatment conditions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

For each scenario separately and pooled across scenarios, we will:

Describe the distribution of rankings.

Test whether observed rankings satisfy single-crossing restrictions using the same procedure as in data collection #267097.

Compare aggregate patterns to those observed in #267097.

No additional hypothesis tests will be conducted.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

No outliers will be excluded. Data collection is conducted by Ipsos using standard quality controls.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

The target sample size is 3,000 completed responses.

Data collection stops when 3,000 complete responses have been obtained.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

No

BUNDLE

This pre-registration is part of a bundle which includes:

#276,378 - <https://aspredicted.org/vi9i7w.pdf> - Title: 'Strategic Voting Aggregation of Information and Preferences' #276,414 -

<https://aspredicted.org/ge5mh9.pdf> - Title: 'Shareholder Power (Norway)'

F.3 Experiment 3



ESGpreferences (#188348)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on: 08/31/2024 11:55 AM (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

The main goal is to investigate whether people's preferences are single-peaked in the ESG domain, and if there are natural ways of aggregating preferences (such as through a Condorcet winner)

Specifically, respondents are asked to rank three outcomes: prioritizing climate, prioritizing a social dimension (across 8 different social issues), and prioritizing profit.

In the second part, I will explore respondents' willingness to pay (WTP) for us to vote for their first and second-ranked choices over their third-ranked choice.

3) Describe the key dependent variable(s) specifying how they will be measured.

The key dependent variable is the individual ranking of the three outcomes.

In the second part, the focus is on measuring WTP (Willingness to Pay) using a multiple price list. The largest personal bonus a respondent is willing to forgo for us to vote for one policy over another is used to quantify their WTP.

4) How many and which conditions will participants be assigned to?

There are no treatments, but participants complete 4 hypothetical rankings followed by 4 rankings with real stakes. Each respondent is randomly assigned 2 issues for the hypothetical rankings and 2 issues for the rankings with real stakes.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

The analysis is primarily exploratory, aiming to determine if respondents' preferences exhibit single-peakedness and to identify any Condorcet winners in each of the 8 cases. Subsequently, I will compare these Condorcet winners (if they exist) to the second stage involving WTP to assess how well the WTP (which seeks to measure preferences cardinally) aligns with the ranking-based approach.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

I will not exclude any outliers that pass the attention check.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

I aim to have 2,500 respondents. If there are fewer than 2,500 respondents by September 10th, 23:59 CET, I will close the data collection.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.

F.4 Experiment 4



Board member ranking (#208601)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on: 01/20/2025 03:42 AM (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This data collection aims to evaluate whether the single-crossing property holds when aggregating shareholder preferences. Respondents will be presented with six scenarios in which they rank three distinct outcomes: a Profit outcome, a Climate outcome, and a third outcome unrelated to profit or climate. All six scenarios pertain to preferences regarding how the fund in which the respondent is investing should vote on board candidates with differing priorities.

In addition to this primary focus, the analysis will include supplementary examinations of preference aggregation methods, comparing Borda, Condorcet, plurality, and runoff voting systems. Furthermore, the study will explore the structure of preferences, specifically investigating the presence of single-peakedness.

3) Describe the key dependent variable(s) specifying how they will be measured.

The ranking of the three alternatives results in six distinct values based on their relative positions.

4) How many and which conditions will participants be assigned to?

No conditions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

I will then test whether the single-crossing property holds when respondents are classified into three political groups: left, middle, and right. To assign respondents to these groups, I will use a Likert scale question. Respondents who select "right-wing" or "strongly right-wing" will be placed in the "right" category, those selecting "left-wing" or "strongly left-wing" will be placed in the "left" category, and others will be categorized as "middle."

To analyze single-crossing, I will establish a ranking of the three alternatives from left to right. "Profit" will be designated as the most right-leaning alternative. "Climate" will be considered the most left-leaning alternative if more respondents with left political preferences rank "climate" as their first choice over the third alternative. Otherwise, "climate" will be considered the middle alternative, and the third alternative will be deemed the most left-leaning.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

All respondents who pass the attention check will be included in the analysis, and no special treatment will be applied to outliers. Since all primary questions involve rankings, no outliers are expected.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

I plan to collect responses from 1,500 US participants on Prolific before excluding those who fail the attention check. Participants will be selected from a pool of individuals who have made investments in mutual funds or ETFs. Data collection will conclude on January 27th at 23:59 CET, unless the target of 1,500 respondents is reached earlier.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

No

F.5 Experiment 5



BoardNorway (#210314)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on: 01/30/2025 07:10 AM (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This data collection serves as a follow-up to studies #188348 and #208601. Specifically, it replicates the question from study #208601 in a Norwegian context, where respondents are indirect owners of the world's largest sovereign wealth fund.

3) Describe the key dependent variable(s) specifying how they will be measured.

As in study #208601, this data collection examines the same question but with a reduced set of ranking scenarios-three instead of six. These three scenarios are a subset of those in #208601, focusing on climate, profit, and the themes of 1) labor unions, 2) gender quotas, and 3) animal welfare.

4) How many and which conditions will participants be assigned to?

No conditions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Same as in #208601

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

The data will be collected through YouGov Norway, which will handle all respondent communication and provide a representative sample of the Norwegian population. No outliers will be excluded or treated differently.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

I aim for 1500 respondents.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

No

F.6 Experiment 6



Experiment with four options (#275061)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on:
2026/02/23 06:17 (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This study is a follow-up to data collection #267097. Participants are assigned to the same five scenarios as in that study. The only change is that each scenario now includes four alternatives to be ranked rather than three. The additional alternative allows participants to vote in favor of both the climate proposal and the non-climate social proposal simultaneously.

Unlike #267097, this data collection does not include a willingness-to-pay (WTP) elicitation task following the scenarios.

3) Describe the key dependent variable(s) specifying how they will be measured.

The key dependent variables are the same as in #267097. Specifically, the primary outcome is the ranking assigned to each alternative within each scenario.

4) How many and which conditions will participants be assigned to?

There are no substantive treatment conditions. Participants are randomly assigned to one of two survey-order conditions:

- Demographic questions before the main scenarios
- Demographic questions after the main scenarios

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

The analyses will follow the same procedures specified in #267097.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

All respondents who pass the predefined strict attention and bot checks will be included in the analysis.

No additional outlier exclusions will be applied. Because the primary outcome is a ranking variable, extreme-value outliers are not applicable.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

The target sample size is 1,000 respondents. Participants will be recruited from Prolific and restricted to U.S.-based individuals who self-report being equity market investors.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

No

F.7 Experiment 7



Shareholder preferences January 2026 (#269073)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on:
2026/01/21 04:16 (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This study examines how institutional design affects shareholder voting. The preregistered analyses address three questions:

-How making it easier to use voting choice (delegation to predefined voting profiles) affects voting outcomes relative to costly issue-by-issue voting, and how this effect can be decomposed into participation (turnout/selection) and delegation (coarsening) components.

-How expanding the choice set from three to six policy alternatives affects preference structure and aggregate voting outcomes.

-Whether voting in a contested board-election setting concentrates at binary extremes or instead exhibits interior, mixed choices, and whether preferences over board bundles remain sufficiently structured to permit aggregation.

3) Describe the key dependent variable(s) specifying how they will be measured.

The key dependent variables include:

-Binary FOR/AGAINST votes on individual shareholder proposals and implied votes based on delegation to voting profiles.

-Ordinal rankings of policy objectives, policy alternatives, and board proposals.

-Preference-intensity measures (measured on scale 0-10 and by allocating points across alternatives)

4) How many and which conditions will participants be assigned to?

Participants are randomly assigned to one of four between-subject conditions:

-Voting Choice (delegation to voting profiles).

-Costly issue-by-issue voting with low participation cost.

-Costly issue-by-issue voting with high participation cost.

-Forced issue-by-issue voting (full-participation benchmark).

Furthermore, the presentation order is randomized across tasks: the three- versus six-alternative rankings and the corresponding point-allocation questions are counterbalanced across participants.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

The first part of the analysis examines how participation costs and voting choice affect voting outcomes, and decomposes differences between Voting Choice and costly issue-by-issue voting into participation/selection and delegation (coarsening) effects. All treatment effects will be estimated using ordinary least squares (OLS) regressions with robust standard errors.

In addition, I examine how expanding the choice set from three to six alternatives affects aggregation, including how different aggregation rules perform as the choice set expands, and analyze voting behavior and preference structure in a contested board-election setting, including whether choices exhibit regularities consistent with structured preferences

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

All respondents who pass attention checks and bot-detection checks are included in the analysis.

Bot-detection checks include reCAPTCHA, an audio-based task, and a short writing task designed to identify automated responses.

No trimming or winsorization of responses is performed. The main outcome variables are rankings, binary variables, or variables that are naturally bounded.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

I will collect 2,000 completed observations.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.

F.8 Experiment 9



Norway Aggregation Rule (#276586)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on:
2026/03/03 03:50 (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This study is a follow-up data collection intended to replicate data collection #206840 in a Norwegian setting.

The main objective is to examine how respondents choose to vote when acting as a fund manager on behalf of investors with cyclical preference profiles, and which decision principles they report using in such situations.

3) Describe the key dependent variable(s) specifying how they will be measured.

The primary dependent variables are:

The selected voting alternative (A, B, C, or abstain).

The selected decision principle.

4) How many and which conditions will participants be assigned to?

There are no experimental conditions. All respondents receive the same scenario and questions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

I will report simple descriptive statistics, such as frequency distributions for the chosen voting alternative and for the selected decision principle.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

No outliers will be excluded.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

The target sample size is 500 respondents, collected by Norstat Norway. Data collection stops once 500 completed responses have been obtained.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.

F.9 Experiment 10



Voting under cyclical preferences (#206840)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has one author.

Pre-registered on: 01/07/2025 12:24 PM (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

This study examines how individuals approach the aggregation of shareholder preferences in situations where cyclical preferences arise, resulting in the absence of a Condorcet winner.

3) Describe the key dependent variable(s) specifying how they will be measured.

The first dependent variable is a voting variable with four possible outcomes: voting for Option A, Option B, Option C, or abstaining. After casting their vote, respondents are asked to justify their choice by indicating their level of agreement with four statements and providing a response to an open-ended question.

4) How many and which conditions will participants be assigned to?

No treatments.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

The analysis is exploratory. An open-ended question is included to capture how individuals justify their mapping of preferences into voting decisions. Responses to this question will be analyzed using large language models (LLMs) to classify respondents into distinct categories.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

No outliers will be excluded from the analysis. All responses that pass the attention check will be included.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

The sample size is set at 1,000 participants, drawn from Prolific. Participants who do not pass the attention check will be excluded. The sample is designed to be representative of the U.S. population in terms of age, gender, and political affiliation.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

No