Voting Choice

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JEL Classification: D72, D82, D83, G34, K22

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Abstract

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The tremendous growth of institutional investors, particularly large passive funds, has drawn attention to their expanding role in corporate governance. Major asset managers such as BlackRock, Vanguard, and State Street are now among the largest shareholders in many public

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firms. By casting votes on behalf of millions of investors, they have substantial voting power and are often pivotal in key corporate votes (Bebchuk and Hirst 2019; Brav et al. 2024). At the same time, shareholder disagreements are becoming increasingly salient, particularly given the prominence of environmental and social (E&S) proposals and growing polarization.

These trends have generated an intense academic and political debate about whether fund managers should vote their investors' shares.[1] The growing heterogeneity of investor preferences has raised concerns about whether a single fund manager can adequately represent such diverse interests, prompting policy makers and the industry to explore ways for investors to express their own preferences. In particular, large asset managers have begun shifting toward "pass-through voting," in which fund investors cast their own votes rather than delegating them to the fund. In 2021, BlackRock became the first mover with its "Voting Choice" program, which gives its investors a choice: delegate their votes to BlackRock, as had been the default before, or exercise their voting rights directly. By 2025Q3, investors representing more than 20% of BlackRock's eligible assets—over $800 billion—have opted to cast their votes directly, and the program has expanded from institutional to retail investors. Vanguard, State Street, and others have followed.[2] Regulators have been considering an even more drastic change: The INvestor Democracy is EXpected (INDEX) Act, introduced in 2022 and reintroduced in 2025, would require passively managed funds to collect voting instructions from all individual investors, effectively making pass-through voting mandatory rather than voluntary.[3]

Our paper develops a framework to analyze these developments and their implications for corporate governance. Voting choice is a unique form of representation, not seen in political settings, because it allows each voter to decide whether to vote directly or delegate to a rep-

[1] According to Kerber (2023), large asset managers' "influential votes have drawn much criticism, both from activists urging them to push portfolio companies harder on issues such as climate change or workforce diversity and, this year, from right-wing U.S. politicians who say the firms focus too much on ESG matters." See also Au-Yeung (2022). See Lund (2018); Bebchuk and Hirst (2019); Griffin (2020); and Fisch and Schwartz (2023) for the legal debate.

[2] For BlackRock, see here; for Vanguard, see here; and for State Street, see here. In June 2023, the first U.K. asset manager CIRCA5000 introduced voting choice for its clients.

[3] Specifically, the 2022 Act proposed that the fund "cannot vote without instructions from fund investors, except for routine matters" if it holds more than 1% of a firm's shares. See also Kaissar (2025), who reports that "the White House is reportedly exploring an executive order that would require funds to vote the way their investors want."

resentative (fund manager). We study how this system affects voting outcomes and investor welfare, and how it compares to two natural alternatives: complete delegation, in which the fund votes all investors' shares (the status quo until recently), and mandatory pass-through voting, in which all investors vote directly (as envisioned by the INDEX Act).

While policy and industry discussions of pass-through voting emphasize its ability to reflect investors' heterogeneous preferences, our key insight is that it also shapes the informational content of the vote, and these two considerations can conflict. Allowing investors to retain their votes not only incorporates diverse preferences but also changes whose information enters the vote and how much information is acquired. We show that when investors' interests are perfectly aligned, voting choice is unambiguously beneficial and improves information aggregation relative to both complete delegation and mandatory pass-through voting. However, once interests become misaligned—because investors differ in their preferences or because information is costly to acquire—voting choice can instead reduce their collective welfare.

In our baseline model, a fund manager owns the firm on behalf of fund investors and acts in their best interests. A proposal is up for a vote, and its value to each investor has two components: a common value and an investor-specific private value. For example, the common value may reflect the proposal's impact on cash flows, while private values may reflect differing stances on E&S issues. The common value is uncertain and depends on the unknown state. The fund manager receives a signal about this state, and investors may also have private information. Under complete delegation, all investors delegate their voting rights to the fund manager. Under mandatory pass-through voting, all investors vote directly. Under voting choice, investors independently decide whether to delegate or vote themselves, creating a hybrid system.[4] Investors may choose to retain their votes for two reasons: to express their preferences (private values) or to bring their private information into the vote.

We first consider the benchmark setting where investors' interests are perfectly aligned.

[4]In practice, fund investors can delegate to the fund manager, cast their own vote, or follow a customized voting policy offered by proxy advisors that best matches their preferences (Hu, Malenko, and Zytnick 2025). For simplicity, we group the latter two options together and treat both as the investor casting his own vote: in many cases, either option yields a vote that reflects the investor's preferences. See Section 5 for a discussion.

In this case, voting choice achieves the efficient level of delegation—the one that maximizes expected investor welfare. Because investors share the same objective, they delegate precisely when doing so improves the quality of the vote: those with little or no information delegate to the better informed fund manager, while better informed investors vote directly. Such information-based endogenous delegation places greater weight on more informative signals and yields more effective information aggregation than either complete delegation or mandatory pass-through voting. In this fully aligned environment, voting choice creates no inefficiencies and dominates the alternatives (McLennan 1998).

This benchmark highlights a benefit of voting choice that is largely absent from current debates, which tend to focus on preference aggregation: voting choice also brings the heterogeneous information of fund investors into the vote. Large institutional clients, such as pension funds with specialized or local knowledge, may hold value-relevant insights, and voting choice allows this information to be used while letting uninformed investors rely on the fund manager. Importantly, this benefit requires that pass-through voting remain voluntary: a mandate like the INDEX Act would force uninformed investors to cast uninformed votes. When pass-through voting is voluntary, uninformed investors simply do not opt in, and efficiency is preserved. In settings where investors differ primarily in information rather than preferences, such as votes on standard corporate governance issues, this informational benefit can be first-order.

The optimality of voting choice, however, can break down once investors' interests diverge. We show that the very feature that motivated the recent push for voting choice—growing heterogeneity in investor preferences—is also what can make it inefficient. When preferences diverge, the informational quality of the vote can worsen, reversing the benchmark result, and this loss can outweigh the gains from preference aggregation. The core reason is a collective action problem: each fund investor considers only the effect of his delegation choice on his own payoff and ignores its impact on others. As a result, equilibrium delegation can be either too high or too low relative to what maximizes collective investor welfare, and voting choice can become inferior to alternative voting systems.

To illustrate this mechanism, we consider a setting in which fund investors are uninformed, so only the fund manager receives an informative signal. Investors' private values, which represent their individual preferences over the proposal, are drawn from a known distribution and are privately observed by each investor. In this setting, investor welfare is maximized when the vote both reflects realized private values and remains sufficiently informed; the welfare-optimal degree of delegation balances these two goals. From an individual investor's perspective, delegation means giving up the ability to vote according to his own preferences in exchange for a more informed vote based on the fund manager's signal (Dessein 2002). In equilibrium, investors delegate only when their private values are sufficiently moderate, while those with more extreme preferences vote themselves.

Inefficiencies arise because each investor balances this trade-off solely for himself, without accounting for its effect on others. When an investor delegates, the proposal is decided using the fund manager's information rather than by an uninformed vote, creating a positive externality that the investor does not internalize. The investor considers this informational benefit only for his own holdings and ignores its benefit to others, a force we call the "information effect." As a result, delegation can be inefficiently low: uninformed investors with strong preferences prioritize their preferences over information and retain their votes—a choice that is individually optimal but collectively inefficient—so the fund manager's information is underutilized. In such environments, investors as a whole may be better off under complete delegation, sacrificing preference aggregation to preserve the information quality of the vote.[5]

This logic raises a natural question: given the large number of E&S proposals on corporate ballots and the growing heterogeneity in investor preferences, does this greater heterogeneity make voting choice more attractive relative to delegation? Put differently, as investors' preferences become more diverse, should we expect the benefits of preference aggregation to dominate and justify the shift toward voting choice observed in practice? We show that the answer is not straightforward, precisely because of the information effect. As preferences become more

[5] This echoes the concern raised by Fisch and Schwartz (2023), who note that "even if fund investors could be nudged to vote, there are reasons to question whether their votes would be informed ... [and that] pass-through voting ... fails to account for the significant loss of sophistication, expertise, and efficiency that institutional intermediaries provide." See also Brav et al. (2025) and Gomtsian and Gosling (2026).

heterogeneous, two forces move in opposite directions. On the one hand, differences in private values become more pronounced, making their aggregation more important. This force favors voting choice over complete delegation, which offers no preference aggregation at all. On the other hand, greater heterogeneity means that more investors place high weight on expressing their own preferences and therefore choose to retain their votes. This amplifies the information effect: fewer votes are delegated, and the fund manager's information becomes increasingly underutilized. The resulting informational loss can dominate, so as preferences become more heterogeneous, requiring delegation of all votes to the fund can be optimal.

Which of these forces dominates depends on how heterogeneity increases, specifically, on the nature of polarization. If *all* investors become more polarized, so that even previously moderate investors develop stronger views, then a large share of investors retain their votes. The fund manager's information is then substantially underutilized, and complete delegation eventually dominates, despite the greater dispersion in preferences. By contrast, if polarization occurs primarily in the tails of the distribution—investors with strong preferences become even more committed to them, while moderates remain moderate—then moderate investors continue to delegate. Therefore, a substantial block of shares remains voted based on the fund manager's information, while investors with stronger preferences can still express their private values. In this case, voting choice improves preference aggregation without a large loss of information, and thus dominates complete delegation.

Moreover, when polarization is concentrated in the tails of the distribution, voting choice can generate the opposite inefficiency: too much delegation. This occurs because, in addition to the information effect, there is a second externality, which we call the "preference" effect. When an investor delegates, the decision reflects the fund manager's preferences rather than the investor's own. We show that this creates a negative externality: other investors' payoffs are, on average, adversely affected by delegation through the private-value channel. To build intuition, it is helpful to focus on investors with strong preferences—who do not delegate—as they are the ones who drive the preference effect. An investor's choice only matters in states where the vote is close enough that his switch from retaining the vote to delegating can change the outcome. In such pivotal situations, the votes of nondelegating investors must offset, on average, the block cast by the fund manager, which implies that there are more nondelegating investors whose preferences oppose the fund manager's position than those who are aligned with it—otherwise, the vote would not be close. Delegation thus shifts the outcome toward the manager's preferences and away from the preferences of this larger opposing group. Because the delegating investor does not internalize this adverse effect on others, the preference effect can lead to excessive delegation. As a result, when the tails of the preference distribution are sufficiently heavy, voting choice can be dominated not only by complete delegation but even by mandatory pass-through voting.

Overall, unless investors' interests are perfectly aligned, offering choice can reduce investor welfare by lowering the vote's information content. Heterogeneous preferences are not the only force that can create misalignment. A second source of misalignment comes from costly information acquisition: an investor's delegation decision affects both his own and the fund manager's incentives to acquire information, and thus the vote's information content, but the investor does not internalize the resulting effects on other investors. We show that this, in turn, can create coordination failure and reduce the informativeness of the vote even when private values are absent. The reason is that the fewer votes the fund manager casts on behalf of investors, the weaker are her incentives to acquire information. This generates a negative feedback loop: as fewer votes are delegated, the fund manager acquires less precise information, which in turn leads investors to delegate even fewer votes, reinforcing the cycle. Consequently, even with fully aligned preferences, voting choice can lead to an equilibrium with no delegation and no information acquisition by the fund—an outcome that is self-fulfilling, even though it can be collectively optimal for investors to delegate both voting rights and information acquisition to the fund.

We consider several extensions that build on these mechanisms and generate additional implications. First, we allow the fund manager to care not only about investor welfare but also about her own private value, for example, due to a pro-E&S bias. This can distort her voting, causing her decisions to reflect her private value rather than the information she receives. Voting choice then affects not only which information enters the vote but also how the fund manager votes. Under complete delegation, she internalizes the welfare of all her investors, which constrains opportunistic behavior and encourages information-based voting. Under voting choice, only investors whose preferences are relatively aligned with the fund manager delegate. As a result, her concern for investor welfare now reinforces, rather than offsets, her bias, tilting her further away from information-based voting.

When investors' preferences differ from the fund manager's, they can withdraw their money from the fund—an option we introduce in another extension by allowing costly exit. We show that the fund manager's desire to preserve assets under management (AUM) can then lead her to offer voting choice even when doing so reduces investor welfare. The information effect is key. Without voting choice, some investors exit, but because exit is costly, only those with the most extreme preferences do so. The remaining AUM is still sizable and delegated to the manager, so a large, well-informed voting block remains. Voting choice changes this: it allows investors to stay in the fund while voting according to their preferences at no cost, thereby eliminating the need to exit. But because retaining a vote is costless, even relatively moderate investors choose to do so, reducing the block delegated to the informed fund manager and weakening information aggregation. As a result, investors as a whole may be better off without voting choice, yet the fund manager chooses to offer it to prevent withdrawals.

Finally, we relax the assumption that the fund fully owns the firm and consider a setting with multiple funds, one large and several small. In this more general ownership structure, voting choice at a large fund creates spillovers for the information-acquisition decisions of other, smaller funds. Under complete delegation, these smaller funds invest little in information, anticipating that the large fund's block vote will be decisive and that their own votes are unlikely to be pivotal. Introducing voting choice disperses the large fund's votes, making close outcomes more likely and strengthening smaller funds' incentives to become informed. If these smaller funds have efficient information-acquisition technologies, their increased information production can outweigh the negative effects identified in our baseline model. Hence, evaluating the effects of voting choice requires considering the entire ownership structure, not just the behavior of the large fund. When the remaining shareholders include sophisticated investors, such as hedge funds, capable of generating high-quality signals, voting choice can perform much better than when the rest of the ownership base consists of small passive funds or retail owners.

Overall, our paper provides a comprehensive analysis of the costs and benefits of pass-through voting systems. The key design trade-off for regulators and practitioners is between aggregating investors' heterogeneous preferences and preserving the informational content of votes. Voluntary pass-through voting systems, such as those currently offered by large fund managers, generally outperform mandatory schemes like the INDEX Act, and are particularly effective when investors' preferences are broadly aligned but information is dispersed. Yet voluntary systems can also create inefficiencies by underutilizing the fund manager's information, weakening information-acquisition incentives, and allowing the fund manager's own preferences to play a larger role. In Section 5, we discuss the policy implications of these results and consider how tools such as thematic voting policies offered by proxy advisors, menu design, and issue bundling can be used to improve the aggregation of both preferences and information.

Related literature. Voting choice is a distinct representation mechanism in which multiple individuals endogenously decide whether to vote directly or delegate to a single agent. This system has not been examined in the political-economy literature, which focuses on the two extremes observed in political settings: direct democracy (corresponding to mandatory pass-through voting in our setting) and voting through representatives (corresponding to complete delegation). The presence of decentralized choice is central to our results. A related form of decentralized delegation has recently appeared in digital governance. Decentralized autonomous organizations (DAOs) are one of the few real-world settings that implement "liquid democracy"—a system where voters can choose whether to vote directly or delegate to another voter.

Only a small set of papers studies systems in which voting rights are delegated endogenously. In contemporaneous work, Campbell et al. (2023) and Dhillon et al. (2023) analyze liquid democracy, in which voters may delegate to other voters. Feddersen and Pesendorfer (1996) and McMurray (2013) examine endogenous abstention, and Eso, Hansen, and White (2014) analyze vote trading; although not delegation systems per se, abstention and vote trading allow voters to effectively pass their votes to others. As in our model, delegation is beneficial when the voter expects the delegate (an expert voter in "liquid democracy" or a random voter under abstention) to vote more informatively. However, these papers differ from ours in two key ways. First, they focus solely on information aggregation, whereas we focus on the trade-off between aggregating diverse preferences and vote informativeness.[6] This leads to different results: in these papers, liquid democracy improves efficiency under the best equilibrium (Campbell et al. 2023; Dhillon et al. 2023), and equilibria with abstention or zero-price vote trading are efficient (Feddersen and Pesendorfer 1996; McMurray 2013; Eso et al. 2014), whereas in our model voting choice can lead to inefficient outcomes. Second, we study delegation to an intermediary—the fund manager, rather than to other voters. This matters because the intermediary can accumulate a block of votes, affecting both the strength of the preference effect and voters' incentives to acquire information—forces that are not examined in these papers. In addition, the intermediary's incentives differ fundamentally from those of voters, which yields different implications and allows us to study when the fund will endogenously offer voting choice.

It would be interesting to study how the forces in our model operate in liquid-democracy and abstention settings with preference aggregation. Several of our results, such as greater delegation to better-aligned agents and the central role of the information effect, are likely to carry over to these environments as well. In recent work, Fan, Shu, and Xie (2025) test our model's predictions in a DAO and find supportive evidence using granular delegation data.

The literature on shareholder voting examines how effectively voting aggregates heterogeneous information and preferences.[7] Our contribution is to study how delegating voting

[6] In McMurray (2013) and Campbell et al. (2023), all voters have common interests. In Feddersen and Pesendorfer (1996) and Dhillon et al. (2023), voters are either independent (have common interests) or partisan, but partisans have extreme preferences and vote the same way regardless of information. Eso et al. (2014) focus on weak partisans, who prefer the vote to be cast according to the state, while we account for the welfare of investors with strong preferences, who prefer the vote to align with their preferences and not the state.

[7] For example, Maug (1999); Bond and Eraslan (2010); Levit and Malenko (2011); Malenko and Malenko (2019); and Bouton et al. (2024) focus on the aggregation of heterogeneous information, whereas Van We-

rights affects both. As we show, under endogenous delegation, heterogeneous preferences have first-order implications for information aggregation, shaping how much of the fund manager's signal enters the vote, how often the fund manager votes based on information rather than preferences, and how much information it chooses to acquire. Even with homogeneous preferences, delegation affects information aggregation by changing the size and relative weight of different voters and, in turn, their incentives to become informed. Bar-Isaac and Shapiro (2020) analyze strategic voting with a blockholder and small shareholders. Our result that in the benchmark setting with fully aligned interests voting choice dominates delegation is related to their insight that the blockholder abstains on part of his votes: in both cases, information aggregation improves by avoiding over-reliance on one signal.

An emerging governance literature studies pass-through voting. Persico and Ravina (2025) show that when some investors vote their own shares rather than delegating them, corporate outcomes are more extreme. Dottling et al. (2026) examine how pass-through voting affects the representation of small investors under wealth inequality. Malenko et al. (2026) show that competition among asset managers can give rise to pass-through voting in industry equilibrium. These papers do not analyze investors' endogenous choice between delegating and retaining voting rights and abstract from the role of information—issues that are central to our results. Empirically, Brav et al. (2025); Hu, Malenko, and Zytnick (2025); and Montagnes, Peskowitz, and Sridharan (2025) analyze proxy advisors' menus, which play a key role in the practical implementation of pass-through voting. Our theoretical results have implications for these menus (see Section 5).

Our paper also relates to the literature on delegation, started by Holmstrom (1984).[8] The trade-off faced by the principal in this literature is similar to that faced by fund investors in our setting: delegating to an informed agent (fund manager) improves decisions but comes

sep (2014); Cvijanovic, Groen-Xu, and Zachariadis (2020); Matsusaka and Shu (2021); Meirowitz, Pi, and Ringgenberg (2023); and Levit, Malenko, and Maug (2024, 2026) focus on the aggregation of heterogeneous preferences.

[8]See, for example, Aghion and Tirole (1997); Dessein (2002); Harris and Raviv (2008); and Chakraborty and Yilmaz (2017). See Bendor, Glazer, and Hammond (2001) and Gibbons, Matouschek, and Roberts (2013) for surveys.

with preference misalignment. Geelen, Hajda, and Starmans (2025) analyze this trade-off in the context of prosocial preferences and show that a more prosocial agent does not always benefit the organization's sustainability. The key difference of our paper from this literature is that we study multiple principals (fund investors), who independently decide whether to delegate to a single agent, without internalizing the effect of their delegation decisions on each other. Related work on delegation with externalities (e.g., Alonso, Dessein, and Matouschek 2008, 2015; Rantakari 2008) examines very different environments in which a single principal delegates to multiple agents who do not interact through voting.

Our paper is an example of "common agency" (Bernheim and Whinston 1986), in which multiple principals interact with a single agent. This literature focuses on environments where principals contract with the agent allowing for transfers. By contrast, we study common agency in delegation decisions, where multiple principals decide whether to delegate authority to the agent without transfers. Our analysis emphasizes the externalities that an investor's delegation decision imposes on other investors. Common-agency models of contracting also feature externalities and distinguish between *direct* externalities, where a principal's contract directly affects another principal's payoff (e.g., Martimort and Stole 2003), and *indirect* externalities, where a principal's contract affects others only through the agent's behavior (Bernheim and Whinston 1986). Our model is an example of indirect externalities: when one investor delegates his vote, he affects other investors only through the fund manager's actions and the resulting voting outcome. However, the externalities in our setting—the information effect and the preference effect—are specific to voting and do not arise in the literature on common agency in contracts. The focus on heterogeneous preferences also relates our paper to the law literature on common agency in public corporations, which highlights conflicts among shareholders with heterogeneous interests (Anabtawi 2005; Rose 2010; Griffin 2020; Fisch and Schwartz 2023). Our analysis identifies new forces that are not considered in that work.

Finally, the paper contributes to the large literature on socially responsible investing, which studies how investors' social preferences shape their decisions on investment and voice (Heinkel, Kraus, and Zechner 2001; Broccardo, Hart, and Zingales 2022; Oehmke and Opp 2025). Our paper analyzes voice (voting). Unlike this literature, which typically models a socially responsible fund as a single agent, we focus on the collective decision making within funds: funds own shares on behalf of many small investors with heterogeneous prosocial preferences. Carlson, Fisher, and Lazrak (2025) also study collective decision making within an institution, focusing on the political implications of divestment decisions.

1. Model

Consider a firm fully owned by a fund (we relax this assumption in Section 3.3). The fund has N clients (fund investors) with equal ownership, where N is odd. We normalize the number of shares in the firm to N, so each fund investor owns exactly one share through the fund.

There is a proposal up for a vote, which is approved if at least $\frac{N+1}{2}$ votes are cast in favor. Investors' preferences have two components: a common value and a private value. The common value is $u(d,\theta)$, where $d \in \{0,1\}$ denotes the decision to accept ($d=1$) or reject ($d=0$) the proposal, and $\theta \in \{0,1\}$ is the uncertain state. Function $u(d,\theta)$ is given by

$$u(1,\theta) = \begin{cases} 1 & \text{if } \theta = 1, \\ -1 & \text{if } \theta = 0, \end{cases} \tag{1}$$

$$u(0,\theta) = 0. \tag{2}$$

Thus, approving the proposal increases (decreases) common value if $\theta = 1$ ($\theta = 0$), while rejecting it and maintaining the status quo leaves value unchanged. For example, the vote could represent a proxy fight, with shareholders deciding whether to elect an activist's director nominees. If incumbent management wins and its nominees stay in place ($d = 0$), firm value remains unchanged, whereas if the activist wins ($d = 1$), common value increases only if the activist's strategy is better than management's ($\theta = 1$). The ex ante probability that the proposal increases common value is $\Pr(\theta = 1) = \frac{1}{2}$.

Investor i's overall utility is the sum of common value and investor-specific private value, captured by the preference parameter x_i:

$$v(x_i, d, \theta) = u(d, \theta) + dx_i. \tag{3}$$

In the proxy fight example, if the activist promotes environmentally friendly policies (as in the case of Engine No. 1 at Exxon in 2021; see Phillips 2021), investors may differ in their preferences over environmental issues and thus value the activist's strategy differently. Such heterogeneity and its effect on voting outcomes is well documented (e.g., Bolton et al. 2020; Bubb and Catan 2022). Each investor's private value is an independent and identically distributed draw from a known distribution $F(\cdot)$ with density $f(\cdot)$, which has mean zero. The assumption of zero mean is a normalization: what matters for the analysis is the distance between the mean of the distribution and the private value of the fund manager. For simplicity, we assume that F is symmetric around the mean (see footnote 16 for a discussion).

In the baseline model, we abstract from agency conflicts between the fund manager and investors; this assumption is relaxed in several extensions in Section 3.3. In particular, the fund manager maximizes the utilitarian welfare of her investors:

$$u(d, \theta) + d\left(\frac{1}{N}\sum_{i=1}^{N} x_i\right). \tag{4}$$

We assume that the fund manager does not observe the realizations of x_i and knows only their distribution; each x_i is privately observed by the corresponding investor (see Section 3.3.4 for discussion and robustness).

The information about the common value is as follows. The fund manager observes a private signal $s \in \{0, 1\}$ about state θ with precision $p \in [\frac{1}{2}, 1]$:

$$\Pr(s = 1|\theta = 1) = \Pr(s = 0|\theta = 0) = p, \tag{5}$$

and each fund investor observes a private signal $\sigma_i \in \{0, 1\}$ with precision $\pi \in [\frac{1}{2}, 1]$:

$$\Pr(\sigma_i = 1|\theta = 1) = \Pr(\sigma_i = 0|\theta = 0) = \pi. \tag{6}$$

All signals are independent conditional on the state. We begin with the case where all agents are endowed with signals and later endogenize information acquisition in Sections 3.3.3 and 4.

We assume that investors do not abstain from voting (see Section 5 for a discussion). We also assume that the fund manager cannot split votes, that is, she votes all shares in the same direction, which corresponds to the observed voting practices of asset managers.

We are interested in comparing the following three voting systems:

Complete delegation. The fund manager votes on behalf of all N investors. This corresponds to the proxy voting system that has been the status quo until recently.

Mandatory pass-through voting. All investors are required to vote themselves. This corresponds to the system proposed under the INDEX Act.

Voting choice. At the first stage, given the realization of his private value x_i, each investor i decides whether to delegate to the fund manager or to vote himself. Delegation decisions are made simultaneously and noncooperatively. At the second stage, the nondelegating investors and fund manager cast their votes based on the signals they observe. This timeline is consistent with practice: under voting choice, delegation decisions are made at the beginning of the proxy season and before investors observe specific proposals on firms' agendas and their private signals about these proposals. For simplicity, we assume that the fund manager casts her vote not knowing the exact number of investors that delegated (see Section 3.3.4 for a discussion).

One vs. multiple fund investors. When the fund has a single investor ($N = 1$), the comparison among the three systems is straightforward: voting choice always weakly dominates. The investor optimally decides whether to delegate, so having a choice cannot make him worse off. With multiple investors, however, an individually optimal delegation decision need not maximize aggregate investor welfare, because it imposes externalities on others. Thus, whether voting choice improves welfare becomes a nontrivial question. As we show, the answer depends critically on whether investors' interests are aligned or not. To show this distinction most clearly, we separately consider two settings:

1. **Heterogeneous preferences**. Investors differ in x_i, while their private signals are uninformative ($\pi = \frac{1}{2}$), so only the fund manager can be informed ($p \geq \frac{1}{2}$).

2. **Heterogeneous information**. Investors have aligned preferences ($x_i = 0$ for all i) but may be heterogeneously informed ($\pi \geq \frac{1}{2}$, $p \geq \frac{1}{2}$). Misalignment in this case arises from costly information acquisition.

These settings map directly into the structure of our analysis. Section 2 studies the benchmark case where interests are fully aligned ($x_i = 0$ and agents are endowed with information) and shows that in this case, voting choice always dominates and implements the optimal amount of delegation. We then examine the two sources of misalignment: heterogeneous preferences (different x_i) in Section 3 and costly information acquisition (endogenous p and π) in Section 4. We show that under either source of misalignment, voting choice can reduce investor welfare.

Interpretation. Our model is general and maps into many sources of shareholder heterogeneity. The preference parameter x_i can capture differences not only in investors' environmental, social, or political ideologies but also heterogeneity arising from other dimensions. For example, differences in tax characteristics are central in the context of payout policies (Desai and Jin 2011; Allen and Michaely 2003), and differences in portfolio composition can shape shareholder votes in M&A transactions (Matvos and Ostrovsky 2008).

We adopt differences in E&S and political preferences as our leading application for two reasons. First, these differences have been a primary motivation for the development of pass-through voting (Gomtsian and Gosling 2026). Second, they represent a large share of issues that appear on corporate ballots. Most votes concern director elections and say-on-pay—traditionally governance items where investor interests are broadly aligned, but even on these issues, recent evidence shows that investors increasingly incorporate their views on climate and diversity issues (Aggarwal, Dahiya, and Yilmaz 2023; Carter, Pawliczek, and Zhong 2023). Shareholder proposals similarly concentrate on governance and E&S topics, so ideological heterogeneity is central in practice.

Within this context, the two settings introduced above have straightforward interpretations. The heterogeneous-preferences setting captures cases where a fund's clients are retail investors or small institutions voting on E&S-related proposals: given their size and the fund's broad portfolio, such clients are unlikely to have meaningful private information. The heterogeneous-information setting fits traditional governance votes, where interests tend to be aligned. If the fund's clients are large institutional investors, they may hold specialized or local information about the firm, making $\pi > \frac{1}{2}$ plausible. In practice, investors may differ in both their preferences and their information. A model incorporating both features would combine the forces in the two settings, and which force dominates would depend on their relative magnitudes.

Given our focus on E&S preferences, it is important to note that negative private values ($x_i < 0$) arise naturally in this context. First, ideological polarization can directly generate such heterogeneity (e.g., Wu and Zechner 2025). Second, and more generally, what matters for our results is not whether an investor is "anti-ESG" in an absolute sense, but whether he places less weight on the prosocial component of the decision relative to the average investor. We formally show this in Internet Appendix A.5.1, where we map our framework into standard models of socially responsible investing. In that mapping, the common value $u(d, \theta)$ captures the sum of cash-flow effects and the average component of prosocial preferences. The private values x_i then capture deviations from this average, so financially motivated investors have $x_i < 0$, whereas socially responsible investors have $x_i > 0$.

Finally, other proposals—involving different sources of heterogeneity—occasionally appear on corporate ballots as well. As we note in Section 5, current voting-choice programs do not allow investors to unbundle proposal types, so even shareholders whose preferences differ only on narrow, purely financial questions, such as payout policy, cannot retain votes on those issues while delegating the rest. We discuss the implications of this constraint in that section.

Equilibrium concept and selection. The equilibrium concept is a symmetric Bayes-Nash equilibrium:[9]

Voting stage. At the voting stage, we focus on equilibria that are symmetric around zero. In the model with heterogeneous preferences, this restriction means that investor i with preference $x_i = x$ follows the opposite voting strategy from investor j with preference $x_j = -x$. In the model with heterogeneous information, this restriction means that investor i with signal $\sigma_i = \sigma$ follows the opposite voting strategy from investor j with signal $\sigma_j = 1-\sigma$. We make the symmetry assumption because it helps eliminate "uninformative" equilibria, in which no fund investor delegates his vote and all investors vote "for" (or all vote "against"), so the decision aggregates neither preferences nor information.[10]

Delegation stage under "voting choice." In the model with heterogeneous preferences, we look for equilibria in which investor i with preference $x_i = x$ follows the same delegation strategy as investor j with preference $x_j = -x$. In addition, we look for equilibria with a nonzero probability of retention of voting rights, which can be justified by a "trembling hand" refinement. Without this refinement, there is always an equilibrium in which all investors delegate.[11] In the model with heterogeneous information, we look for equilibria in which all investors play the same delegation strategy; that is, each investor i delegates his vote to the fund manager with the same probability $q_d \in [0, 1]$.

[9] We only focus on symmetric equilibria in the setting with an unbiased fund manager. In the extension to a biased fund manager in Section 3.3.1, the equilibrium is asymmetric.

[10] Without the symmetry assumption, these "uninformative" equilibria would always exist. This is because, in such equilibria, an investor's vote is never pivotal for the outcome, so voting "for" (or "against") regardless of one's preferences and information, as well as not delegating the vote, is an equilibrium strategy.

[11] Indeed, if investor i expects all other investors to delegate with certainty, he expects his vote to never be pivotal, which means that his delegation decision is irrelevant for his utility. Thus, he finds it optimal to delegate, no matter how high or low x_i is. A "trembling hand" refinement eliminates this equilibrium because it makes investor i's vote pivotal with positive, even if negligible, probability. Then, an investor with very high $|x_i|$ will prefer to retain his voting right, as formally follows from the analysis below.

2. Benchmark: Fully aligned interests

When all investors have the same preferences ($x_i = 0$), the equilibrium is characterized by probability q_d with which each investor delegates his vote. The following result shows that with fully aligned interests, voting choice implements the efficient level of delegation and thus dominates both complete delegation and mandatory pass-through voting.

Proposition 1. *The equilibrium probability of delegation coincides with the probability of delegation that maximizes expected investor welfare.*

The intuition is as follows. With aligned interests, the key purpose of voting is to aggregate dispersed information held by investors and the fund manager, giving greater weight to more precise signals. When investors' signals are more precise than the fund manager's, they retain their votes, achieving efficient information aggregation. This efficiency arises both because investors' signals are more precise and because they are conditionally independent, allowing a "wisdom-of-the-crowd" effect. When investors have less precise signals, they are more likely to delegate, since their own information adds little to firm-value maximization. In the extreme case where investors are completely uninformed, they always delegate, making voting choice irrelevant. This parallels the swing-voter logic in Feddersen and Pesendorfer (1996) and McMurray (2013), where uninformed voters abstain in order to let informed voters determine the outcome. In our setting, however, voting choice provides a better alternative than abstention: investors can delegate to the fund manager, thereby increasing the number of votes cast on the basis of an informed signal. As a result, for all parameter values, the equilibrium under voting choice implements exactly the level of delegation that maximizes information aggregation.

The broader intuition is that fund investors have common interests: their preferences are fully aligned, and they face no private cost of either delegating or voting themselves. This connects our result to a general property of common-interest games: a strategy profile that maximizes players' combined ex ante utility is a Nash equilibrium (McLennan 1998). In our setting, it implies that the efficient combination of investors' private signals and the fund manager's signal is sustained in equilibrium.

This result contrasts with the literature on information aggregation in financial markets, where information externalities can lead to suboptimal outcomes. In financial markets, traders compete and have conflicting interests, which can generate inefficiencies in information aggregation (see Goldstein and Yang 2017 for a review). By contrast, in our benchmark setting voters have fully aligned objectives—they all seek to maximize the value of their shares—so incentives are naturally coordinated.

Thus, a central advantage of voting choice is its ability to aggregate information—an aspect largely absent from discussions of pass-through voting, which emphasize preference aggregation. In a recent paper, Gomtsian and Gosling (2026, p. 44) highlight this aspect as well, noting that pass-through voting could "add more flexibility to shareholder stewardship if it is primarily adopted by asset owners that are local investors with better knowledge of companies and their needs. Local investors may also be more willing to listen to corporate boards than a foreign investor who may ignore relatively small and remote companies in its global portfolio."

Importantly, this benefit requires that pass-through voting be voluntary. A mandate such as the INDEX Act, which would require funds to pass all votes to underlying investors, eliminates uninformed investors' ability to delegate. When pass-through voting is voluntary, by contrast, uninformed investors never choose to retain their votes, and efficiency is preserved. In Section 3, we show that once investors' preferences diverge, even uninformed investors may retain voting rights to act on those preferences, breaking the efficiency of voting choice.

3. Heterogeneous preferences

In this section, we analyze the case in which investors are uninformed and differ in their private values: $x_i \sim F(\cdot)$, $\pi = \frac{1}{2}$. We first characterize the equilibrium under the three regimes.

Equilibrium under complete delegation to the fund. The fund manager chooses d to maximize the welfare of fund investors, $u(d, \theta) + d\left(\frac{1}{N}\sum_{i=1}^{N} x_i\right)$. Hence, if she could perfectly observe all investors' private values, complete delegation would implement the utilitarian first best given the available information (see Internet Appendix A.5.2). For example, if fund investors strongly favor the proposal ($\frac{1}{N}\sum_{i=1}^{N} x_i > 1$), investor welfare is maximized when the proposal passes even if $\theta = 0$. However, the fund manager does not observe the realizations of x_i; she only knows that, on average, investors are unbiased ($\mathbb{E}[x_i] = 0$). Hence, she votes for the proposal if and only if she gets a positive signal about the common value. The expected common value of each investor is thus

$$\Pr(\theta = 1)\Pr(s = 1|\theta = 1) - \Pr(\theta = 0)\Pr(s = 1|\theta = 0) = p - \frac{1}{2}, \tag{7}$$

and the expected welfare of all investors is $N\left(p - \frac{1}{2}\right)$.

Equilibrium under mandatory pass-through voting. Since all investors are uninformed about common value, each investor votes solely based on his private value: in favor (against) if $x_i > 0$ ($x_i < 0$).

Equilibrium with voting choice. Consider investor i with private value x_i deciding whether to vote himself or delegate his vote to the fund. This delegation decision only matters if the investor's vote is pivotal, that is, the remaining votes are split. Suppose first that $x_i > 0$. If the investor does not delegate, he votes in favor; that is, in line with his private value.[12] The investor's expected payoff in the pivotal state is then x_i. If the investor delegates, the fund manager votes on his behalf. The fund manager casts all the votes delegated to her according to her signal s.[13] Hence, the investor's expected payoff from delegation in the pivotal state is

$$\Pr(s = 1)\left(\mathbb{E}\left[u(1, \theta)|s = 1\right] + x_i\right) = \frac{1}{2}\left(2p - 1 + x_i\right). \tag{8}$$

[12] Even though the investor rationally conditions his vote on the event of being pivotal (i.e., the votes of the fund manager and the nondelegating investors being split), this event does not convey any information about θ because the fund manager's voting strategy, the investors' delegation strategies, and the distribution of investors' preferences are all symmetric around zero.

[13] This is because, given the symmetry of the delegation strategies and the symmetry of the distribution around zero, the fact that the fund manager's vote is pivotal for the decision does not convey information about whether investors' private values are more likely to be positive or negative. Thus, the fund manager's conditional (on the pivotal event) expectation of investors' private values is zero.

Comparing the two, the investor delegates his vote if and only if

$$\frac{1}{2}(2p-1+x_i) \geq x_i \Leftrightarrow 2p-1 \geq x_i. \tag{9}$$

The case $x_i \leq 0$ is analogous by symmetry. Hence, investor i delegates his vote if and only if

$$|x_i| \leq 2p-1. \tag{10}$$

This strategy reflects the standard trade-off between information and bias in the delegation literature (e.g., Dessein 2002). Delegation lets investors benefit from the fund manager's superior information, but sufficiently extreme investors instead vote themselves, as their preferences diverge too far from the fund manager's. Figure 1 illustrates this strategy. The x-axis shows realizations of investors' private values, with the shaded region indicating those who delegate. Black dots represent moderate investors satisfying (10), while the brown and green dots outside the shaded region represent more extreme investors, who prioritize their preferences over information: "brown" investors always vote against, and "green" investors always vote in favor.

Investor welfare. The equilibrium under all three systems has a cutoff form: investors delegate if and only if $|x_i| \leq \hat{x}$ for some cutoff $\hat{x}$. Complete delegation corresponds to $\hat{x} = \infty$, mandatory pass-through voting to $\hat{x} = 0$, and voting choice to $\hat{x} = 2p-1$. To compare these systems, we characterize the expected (utilitarian) welfare of fund investors, $U(\hat{x})$, for any given cutoff $\hat{x} \in [0, \infty]$.

Lemma 1. *Suppose that each investor delegates to the fund manager if and only if $|x_i| \leq \hat{x}$ for some cutoff $\hat{x}$. Then the expected investor welfare, $U(\hat{x})$, satisfies*

$$\frac{U(\hat{x})}{N} = \left(2\sum_{k=\frac{N+1}{2}}^{N} P(F(\hat{x}), N, k) - 1\right)(p-\frac{1}{2}) + P(F(\hat{x}), N-1, \frac{N-1}{2}) \int_{\hat{x}}^{\infty} x f(x)\, dx, \tag{11}$$

where $P(z, N, k) = \frac{N!}{k!(N-k)!} z^k (1-z)^{N-k}$. The first component of (11) increases in $\hat{x}$, whereas *the second component decreases in $\hat{x}$.*

Equation (11) shows that investor welfare is the sum of two components. The first captures investors' expected common value, which is determined by the probability of approving the proposal exactly when $\theta = 1$. This component is the product of two terms. The term $p - \frac{1}{2}$, which coincides with (7), captures the expected common value if the outcome follows the fund manager's signal. It is multiplied by the (rescaled) probability that the voting outcome coincides with the fund manager's signal. This probability increases in the delegation cutoff $\hat{x}$, because a higher $\hat{x}$ means more investors delegate and the fund manager controls more votes. In the limit of complete delegation ($\hat{x} \to \infty$), this probability converges to one, and the entire first component converges to (7). Under mandatory pass-through voting, it equals zero because the fund manager has no influence on the vote. The second component in (11) captures the expected private value of investors and depends on the extent to which the voting outcome aggregates their preferences. This component is larger if there is less delegation, that is, $\hat{x}$ is smaller.

Lemma 1 highlights the central trade-off created by delegation. More delegation (higher $\hat{x}$) increases the likelihood that the vote follows the fund manager's information and thus improves common value. At the same time, more delegation reduces the extent to which the outcome reflects investors' heterogeneous preferences, reducing the private-value component of welfare. The welfare-maximizing cutoff $\hat{x}$ balances these two forces.

3.1. Is there too much or too little delegation?

To compare voting choice with the other systems, it is useful to compare the equilibrium delegation cutoff under voting choice, $2p - 1$, with the cutoff that maximizes investor welfare. We therefore consider the following problem: Suppose we could optimally choose a cutoff $\hat{x}^* \in [0, \infty]$ such that an investor delegates if and only if $|x_i| \leq \hat{x}^*$, to maximize expected investor welfare. If $\hat{x}^* > 2p - 1$, the equilibrium with voting choice features "underdelegation:" it would be optimal for more investors to delegate than they do in equilibrium. If $\hat{x}^* < 2p - 1$, voting choice leads to "overdelegation:" welfare would be higher if fewer investors delegated.

How does the optimal $\hat{x}^*$ compare to the equilibrium cutoff $2p-1$? Consider an increase in the cutoff from $\hat{x}$ to $\hat{x}+\varepsilon$ for a small ε. This change affects delegation decisions only if some investors have private values x satisfying $|x| \in (\hat{x}, \hat{x}+\varepsilon)$. Since ε is infinitesimal, we can focus on the case where only one investor's private value falls within this interval. Without loss of generality, suppose this investor's private value is negative (i.e., $-\hat{x}-\varepsilon < x < -\hat{x}$), so absent delegation, he votes against the proposal. The increase in the delegation cutoff induces him to delegate his vote to the fund manager, which has two effects on overall investor welfare:

1. **Information effect** (effect on common values): The decision is now made based on the fund manager's information. This increases the common-value component by $2p-1>0$ for each investor and therefore improves other investors' welfare.

2. **Preference effect** (effect on private values): The decision now reflects the preferences of the fund manager rather than the delegating investor. This hurts investors whose preferences are closer to the delegating investor and benefits those closer to the fund manager. As we show next, the negative effect dominates. The reason is that, in the scenarios where *delegation changes the voting outcome*, more investors tend to be aligned with the delegating investor than with the fund manager, so the preference effect lowers other investors' welfare.

To illustrate the intuition behind the information and preference effects, we begin with an example with $N=3$ investors.

Example 1: $N=3$. Suppose investor 1 has $x_1 \in (-\hat{x}-\varepsilon, -\hat{x})$ and switches to delegation; that is, from voting "against" to voting with the fund manager. Without loss of generality, suppose the two other investors' private values are ordered as $x_2 \le x_3$. If both have moderate views and thus delegate (i.e., $|x_2| < \hat{x}$ and $|x_3| < \hat{x}$), the fund manager's vote fully determines the outcome, so investor 1's switch to delegation has no effect. For the switch to matter, at least one of investors 2 and 3 must not delegate, and their votes must be split. This implies two possible scenarios:

1. In the first scenario, exactly one of investors 2 and 3 has strong preferences and does not

delegate ($|x_i| > \hat{x}$), voting *differently* from the fund manager, while the other is moderate and delegates ($|x_j| < \hat{x}$). Investor 1's switch—from always voting "against" to delegating and voting with the fund manager—affects the outcome only if the fund manager receives a positive signal and votes "for" (otherwise investor 1's vote is cast "against" in either case). Thus, a split vote implies that among investors 2 and 3, the moderate investor's vote is cast "for" by the fund manager, while the investor with strong preferences votes "against." That is, it is precisely the investor with strong preferences ($x_2 < -\hat{x}$) who is hurt by investor 1's delegation: he would prefer investor 1 to continue voting against, like himself, rather than delegate to the neutral fund manager.

- More precisely, this scenario implies $x_2 < -\hat{x}$, $|x_3| < \hat{x}$, and $s = 1$. Since delegation changes the decision from "reject" (in which case everyone gets zero) to "accept" (in which case private values are realized), the combined effect of delegation on the private values of investors 2 and 3 is strictly negative:

$$\mathbb{E}\left[x_2 + x_3 \mid x_2 < -\hat{x},\ |x_3| < \hat{x}\right] = \mathbb{E}\left[x_2 | x_2 < -\hat{x}\right] < 0. \tag{12}$$

  At the same time, the decision now reflects the fund manager's information (rather than two uninformed votes), so each investor's common value rises by $2p - 1$.

2. In the second scenario, investors 2 and 3 do not delegate and vote differently from each other, which implies $x_i < -\hat{x}$ for one of them, and $x_j > \hat{x}$ for the other. Thus, their private values sum to zero on average, yielding a neutral effect.

   - More precisely, as in the first scenario, investor 1's switch to delegation matters only if his original vote ("against") differs from the fund manager's; that is, the fund manager receives signal $s = 1$ and casts investor 1's share "for." Then, the combined effect on the private values of investors 2 and 3 is zero: $\mathbb{E}\left[x_2 + x_3 \mid x_2 < -\hat{x},\ x_3 > \hat{x}\right] = 0$, while each investor's common value increases by $2p - 1$.

We summarize these two scenarios in Table 1. Taken together, they show that delegation has a strictly negative effect on the private values of investors 2 and 3 (the preference effect) and a strictly positive effect on their common values (the information effect). Investor 1, however, internalizes only the impact on his own utility, shown in column (3).

Table 1. Example with three investors.

Scenario	Effect on outcome	Effect on investor 1	Effect on investors 2 and 3
(1)	(2)	(3)	(4)
$x_2 < -\hat{x}$, $\lvert x_3 \rvert < \hat{x}$, $s = 1$	Reject $\rightarrow$ Accept	$(2p-1) + x_1$	$2\,(2p-1) + \mathbb{E}\,[x_2 \vert\ x_2 < -\hat{x}]$
$x_2 < -\hat{x}$, $x_3 > \hat{x}$, $s = 1$	Reject $\rightarrow$ Accept	$(2p-1) + x_1$	$2\,(2p-1) + 0$

The table summarizes the two scenarios in which investor 1's switch from voting "against" to delegating affects the outcome. Investor 1 internalizes how this switch influences his own utility, reported in column (3), but not its impact on investors 2 and 3, reported in column (4). The terms $2(2p-1) > 0$ in column (4) reflect the combined effect of delegation on the common values of investors 2 and 3 (the information effect). The terms $\mathbb{E}[x_2 \mid x_2 < -\hat{x}]$ and 0 in column (4) reflect the combined effect on their private values, which is on average negative (the preference effect).

This example illustrates the broader intuition behind the preference effect. An investor's delegation choice matters only when the vote is split, which happens when the votes of nondelegating (i.e., more extreme) investors offset, on average, the block cast by the fund manager. In such cases, the number of nondelegating investors who oppose the fund manager's position must exceed those who support it; otherwise, the vote would not be close.

Figure 1 illustrates this in the context of an environmental proposal. Black dots represent "moderate" investors, who delegate their votes, while brown and green dots represent "brown" and "green" investors whose preferences are strong enough that they do not delegate. The preference effect is neutral for moderate investors, as their preferences are, on average, zero: $\mathbb{E}\,[x_i \mid \lvert x_i \rvert < \hat{x}] = 0$ (these investors are similar to investor 3 in the first scenario of Example 1). As a result, the preference effect is driven by the balance between "brown" and "green" investors with strong preferences.

The red arrow shows a marginal "brown" investor switching from voting "against" to delegating and voting with the neutral fund manager. This switch changes the outcome only when the fund manager votes "for" and the vote is split. In the left panel, there are more "brown" investors than "green." As a result, the delegation decision is pivotal: the fund manager's block of three favorable votes, together with the few "green" voters, is exactly offset by the large number of "brown" voters (yielding five votes "for" and five "against"). In contrast, in the right panel, where there are more "green" investors than "brown," the fund manager's block of favorable votes produces a clear majority regardless of the focal investor's delegation decision. Thus, only the left panel represents the pivotal scenario. Conditional on this scenario, the private values of other investors aggregate to a preference against the proposal.[14] Delegation thus shifts the decision toward the fund manager's neutral position and away from the larger group of opposing investors, exactly as in Example 1 and capturing the negative externality central to the preference effect. In other words, when delegation makes a difference, there are more "brown" than "green" investors, and the former would prefer the focal investor to keep voting against the environmental proposal rather than delegate, since delegation can lead to its acceptance. This logic also implies that the magnitude of the preference effect depends on the proportion of investors who have strong preferences and do not delegate, and, more generally, on the distribution of investor preferences.

If only the information effect were present, an investor's decision to delegate would impose a positive externality on other investors, so voting choice would feature underdelegation. If only the preference effect were present, the externality would on average be negative, leading to overdelegation. Because both forces operate simultaneously, either outcome is possible. The next section examines how the balance between these forces, and thus whether voting choice leads to under- or overdelegation, depends on the distribution of investors' preferences.

3.2. Does greater preference heterogeneity justify voting choice?

The growing polarization of investor preferences on climate and other E&S issues might appear to strengthen the case for voting choice. When preferences are diverse, letting investors retain their votes helps better reflect this diversity than delegating all votes to the fund manager. We

[14] Formally, the combined private values of delegating investors are zero (since $\mathbb{E}[x \mid -\hat{x} < x < \hat{x}] = 0$), and those of nondelegating investors are negative (as in the left panel).

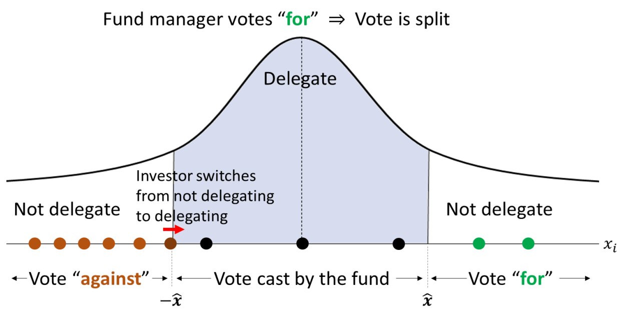

Figure 1
Delegation and the preference effect
The x-axis reflects investors' realized private values. The left (right) panel illustrates realizations of private values that are consistent (not consistent) with the fund manager voting "for" and the vote being split. The black dots stand for private values of delegating investors, the brown dots stand for private values of nondelegating investors who vote "against," and the green dots stand for private values of nondelegating investors who vote "for."
ALT TEXT: Two-panel diagram illustrating investor delegation decisions along a private-value axis. Each panel shows regions where investors delegate or retain their votes, with black dots for delegating investors, brown dots for nondelegating investors with negative private values (voting against), and green dots for nondelegating investors with positive private values (voting for). The left panel shows a split vote outcome when the fund manager votes for; the right panel shows a nonsplit vote outcome when the fund manager votes for.

show, however, that this logic is incomplete: once the information effect is taken into account, greater preference heterogeneity does not necessarily make voting choice more attractive.

Intuitively, as preferences become more heterogeneous, more investors hold strong positions and choose to retain their votes. Although individually optimal, this reduces the use of the fund manager's information and can be collectively inefficient. This force can outweigh the benefit of aggregating diverse preferences, at which point complete delegation becomes preferable. We illustrate this using a simple numerical example.

Example 2. Consider $N = 5$; $p = 0.75$; and two preference distributions, F and G, symmetric around zero, with densities

$$f(x) = \begin{cases} 0.6 & x \in (-0.5, 0.5) \\ 0.2 & x \in [-1.5, -0.5] \cup [0.5, 1.5] \end{cases} \tag{13}$$

$$g(x) = \begin{cases} 0.3 & x \in (-0.5, 0.5) \\ 0.35 & x \in [-1.5, -0.5] \cup [0.5, 1.5] \end{cases} \tag{14}$$

Distribution G is a mean-preserving spread of F and thus features greater preference heterogeneity. Under voting choice, the equilibrium delegation cutoff is $\hat{x} = 2p - 1 = \frac{1}{2}$ for both distributions. Greater heterogeneity affects investor welfare under voting choice through two channels. First, heavier tails raise the value of aggregating preferences. Second, the share of investors who delegate, $F(2p-1)$, declines as more investors hold strong preferences: the delegation rate falls from 60% under F to 30% under G, reducing the use of the fund manager's information. As a result, expected per-share welfare under voting choice (expression (11) for $\hat{x} = \frac{1}{2}$) is 0.2518 under F and 0.2411 under G, so greater heterogeneity reduces welfare. Under complete delegation ($\hat{x} = \infty$), expected welfare is $p - \frac{1}{2} = 0.25$ under both distributions. Thus, voting choice dominates complete delegation under F, but once preferences become more dispersed, as under G, complete delegation becomes the superior system.[15]

To isolate the preference-aggregation and information forces, it is useful to consider changes

[15] Mandatory pass-through voting is, in this example, dominated by both voting choice and complete delegation under both F and G.

in the distribution that keep the middle of the distribution unchanged while varying the tails. This limits the information effect (moderate investors remain moderate and continue to delegate) and yields the following comparative statics.

Proposition 2. *Let $\hat{x}^*(F)$ denote the optimal delegation cutoff given distribution F.*

(i) Consider distribution G, symmetric around zero, such that $G(x) = F(x)$ for $x \in [-\hat{x}^*(F), \hat{x}^*(F)]$ but $G(x|x \geq \hat{x}^*(F))$ dominates $F(x|x \geq \hat{x}^*(F))$ in the sense of first-order stochastic dominance. Then, the optimal amount of delegation is lower under G: $\hat{x}^*(G) < \hat{x}^*(F)$.

(ii) Consider a class of symmetric-around-zero distributions that coincide with F for $x \in [1-2p, 2p-1]$ but differ in the tails, $\int_{2p-1}^{\infty} xf(x)\,dx$. If the tails are sufficiently heavy ($\int_{2p-1}^{\infty} xf(x)\,dx$ is sufficiently high), there is overdelegation in equilibrium. In contrast, if the tails are sufficiently thin ($\int_{2p-1}^{\infty} xf(x)\,dx$ is sufficiently low), there is underdelegation.

In part (i), distribution G features greater preference dispersion than F in the tails but is identical in the middle. Since moderate investors continue to delegate, the information effect remains limited, while the value of aggregating the stronger tail preferences rises. As a result, the optimal degree of delegation is lower. In part (ii), when the tails are heavy, nondelegating investors hold very strong preferences. A delegating investor therefore imposes a large negative externality on them, leading to overdelegation. When the tails are thin, this preference effect is limited, the information effect dominates, and the equilibrium features underdelegation.

We now use this logic to compare voting choice with the other two systems. The next result shows that heavy tails make voting choice superior to complete delegation, and, if strong enough, favor mandatory pass-through voting. When tails are thin, preference aggregation is less important, the information effect dominates, and delegation yields higher welfare.

Proposition 3. *Consider a class of symmetric around zero distributions that coincide with F for $x \in [1-2p, 2p-1]$ but differ in the tails, $\int_{2p-1}^{\infty} xf(x)\,dx$.*

(*i*) *If the tails are sufficiently heavy ($\int_{2p-1}^{\infty} xf(x)\,dx$ is sufficiently high), voting choice yields higher expected investor welfare than complete delegation. If the tails are sufficiently thin ($\int_{2p-1}^{\infty} xf(x)\,dx$ is sufficiently low), complete delegation yields higher expected investor welfare than voting choice.*

(*ii*) *If the tails are sufficiently heavy, mandatory pass-through voting yields higher expected investor welfare than either voting choice or complete delegation.*

The intuition is straightforward. Voting choice improves on complete delegation by aggregating heterogeneous preferences. When the tails are thin, this benefit is small, and voting choice suffers from underdelegation and insufficient use of the fund manager's information, making complete delegation the better system. When the tails are sufficiently heavy, preference aggregation becomes the dominant concern and voting choice outperforms complete delegation. However, as Proposition 2 shows, voting choice may still involve overdelegation because delegating investors impose negative externalities on those with extreme preferences. Mandatory pass-through voting alleviates this inefficiency and aggregates investors' private values. Although this sacrifices the fund manager's information, the gain from preference aggregation outweighs the informational loss when the tails are important enough.

Together, these results show that greater heterogeneity can have very different effects depending on its source. In Example 2, some moderate investors develop strong preferences (as when all investors become polarized on E&S issues), reducing delegation and worsening information aggregation. By contrast, in Propositions 2–3, only the preferences of already-extreme investors intensify. This raises the value of preference aggregation without substantially impairing information use, reversing the welfare comparison.

3.3. Extensions and discussion

So far, we have abstracted from agency conflicts between the fund manager and investors, assuming that the manager maximizes investors' welfare. This allowed us to focus on conflicts arising solely from investors' heterogeneous preferences. In this section, we relax this assumption through several extensions: (1) a fund manager who places some weight on her own preferences in Section 3.3.1, (2) a fund manager concerned with retaining AUM in Section 3.3.2, and (3) costly information acquisition by the fund manager in Section 3.3.3. While the information and preference effects remain central, these agency frictions introduce additional forces that interact with them. Finally, Sections 3.3.4 and 3.3.5 discuss the information assumptions of the model, as well as communication between the fund manager and investors.

3.3.1. Biased fund manager

In practice, a fund manager's preferences may diverge from those of her investors (Zytnick 2024; Herrmann et al. 2025). To capture this, the extension in Internet Appendix A.1 allows the fund manager to derive an additional private value when a proposal passes; for example, due to personal support for ESG issues or concerns about preserving business ties with the firm (Davis and Kim 2007; Cvijanovic et al. 2016; Kumar, Tang, and Wei 2023).

Because of this bias, the fund manager does not always follow her information even under complete delegation: she always votes in favor when her signal is positive, but sometimes also when it is negative. Under voting choice, investors anticipate this behavior when deciding whether to delegate. Those who share the fund manager's preference are comfortable delegating unless their support is extremely strong. In contrast, those who oppose the proposal retain their votes, even when their opposition is only moderate. This effect is illustrated in Figure 2.

This asymmetry affects how the fund manager uses her information. Her vote only matters when the votes cast by nondelegating investors are close enough that she can sway the outcome, as in the figure. In such scenarios, she infers that investors who retained their votes and favor the proposal must care more strongly than those who oppose it. Thus, conditional on being pivotal, the fund manager expects investors' average private value to be positive, even though its unconditional average is zero (Figure 2 provides a visual illustration of this intuition). This inference leads her to vote in favor even more often than under complete delegation.[16]

[16] Similar learning arises if the fund manager is unbiased but faces an asymmetric distribution of investor preferences. Such a setting parallels the biased-manager extension: the preference and information effects remain, but an additional learning channel emerges. See Internet Appendix A.1.2 for details.

This comparison highlights the disciplining role of delegation. Under complete delegation, the fund manager votes on behalf of a representative set of investors with average private value zero, so her concern for their welfare leads her to rely more on her signal and less on her bias. Under voting choice, only investors relatively aligned with her delegate, and a close vote reveals that non-delegators are, on average, more supportive. This feedback amplifies the fund manager's underlying bias: she is more likely to ignore negative information and support the proposal under voting choice than under complete delegation.

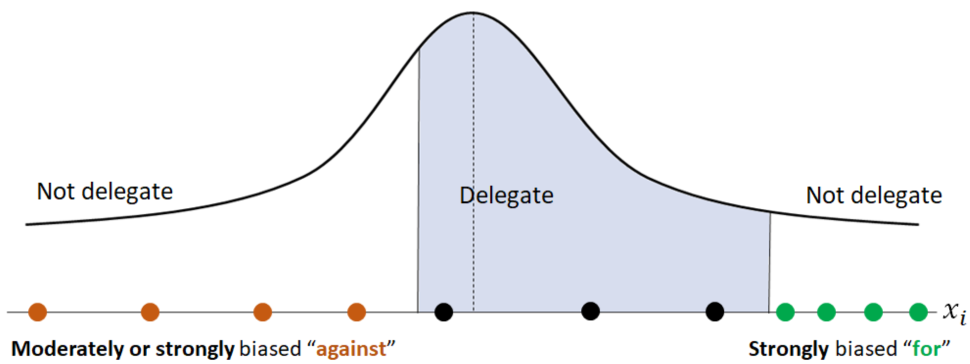

Figure 2
The case of a biased fund manager
The figure shows a typical realization of investors' private values conditional on the fund manager being pivotal. Black dots represent delegating investors; brown and green dots represent non-delegators with negative and positive private values, respectively. The figure shows that the sum of investors' realized private values is positive.
ALT TEXT: Diagram showing the distribution of investors' realized private values conditional on the fund manager being pivotal. The central region marks delegating investors (black dots), while nondelegating investors with negative and positive private values are shown as brown and green dots respectively on the tails, illustrating that the sum of realized private values is positive.

3.3.2. Investor exit and the fund's incentive to offer voting choice

We have so far assumed that investors cannot exit the fund, even if they disagree with the fund manager's stance. In the extension in Internet Appendix A.2, we allow investors to withdraw their money from the fund at a cost. When voting choice is not available, only investors with very strong preferences find it worthwhile to exit: the cost makes exit attractive only when disagreement with the fund manager is strong. The remaining investors stay and delegate, leaving the manager with a large voting block that she casts based on her signal. As a result, information continues to play a substantial role in the voting outcome.

Offering voting choice changes these incentives. Once investors can stay in the fund while voting according to their preferences at no cost, the motive to exit disappears. But costless retention of voting rights also leads many relatively moderate investors to keep their votes rather than to delegate. The pool of delegated votes shrinks, and the fund manager's information is used less effectively than in the scenario where voting choice was not offered and only extreme investors withdrew. Aggregate investor welfare can therefore decline under voting choice, even though investors avoid paying withdrawal costs.

Nevertheless, the fund manager may prefer to offer voting choice because it helps retain AUM. She does not internalize the loss in informational efficiency, as her objective depends only on the investors who remain in the fund. Thus, allowing withdrawal creates an agency conflict: the fund manager may offer voting choice even when doing so harms investors collectively.

3.3.3. Fund manager's information acquisition

Another potential source of conflict between the fund manager and her investors arises from the fund manager's information-acquisition decisions. The fund manager bears the costs of acquiring information, while the resulting benefits are shared by all investors. Internet Appendix A.3 introduces costly information acquisition by the fund manager, effectively endogenizing p in the baseline model. We show that when fewer votes are delegated to the fund manager, her incentive to invest in more precise information declines. This can generate a negative feedback loop: reduced delegation leads the fund manager to acquire less precise information, which in turn further weakens investors' incentives to delegate. Section 4 analyzes this feedback loop in a setting with heterogeneous information and shows that it can lead to coordination failure, even when interests are otherwise aligned. Overall, these results imply that voting choice may not only underutilize the fund manager's information but also decrease her incentives to acquire information in the first place.

3.3.4. Information available to the fund manager

Here, we discuss the role of two simplifying assumptions about the information available to the fund manager regarding investors' private values.

First, we assume that when casting her vote, the fund manager does not observe the realized number of votes delegated to her. This assumption is not material in the baseline model with an unbiased fund manager: given the symmetry of that setting, the equilibrium characterized above will also be an equilibrium in a game where the manager observes the delegation count. With a biased fund manager, however, observability would introduce an additional channel through which she could infer investors' preferences. As explained in Section 3.3.1, this learning effect is already present even without the fund manager observing the exact realization of delegation count, because the equilibrium delegation interval is asymmetric. In Internet Appendix A.1.1, we discuss in more detail why abstracting from observability greatly simplifies the analysis while preserving the key learning insights.

Second, we assume that the fund manager knows the distribution of investors' private values but not their individual realizations. While this assumption is strong, the opposite extreme—full knowledge of each investor's preferences—is also unlikely in practice. Fund managers typically observe only coarse information, such as an investor's directional stance (e.g., pro-E&S), rather than the intensity of that stance. Assuming that the fund manager does not observe realized x_i at all captures this uncertainty in the simplest form. For retail investors, this assumption is plausible given their large number and small stakes; it is also consistent with the emergence of platforms such as Iconik that help funds learn about retail clients' preferences. For institutional clients, fund managers may know the direction of preferences (e.g., whether a public pension fund tends to support E&S proposals) but not their strength. Although the baseline model does not incorporate this intermediate case, Internet Appendix A.5.2 analyzes it. There, the fund manager observes the direction of each investor's private value, but not its magnitude. We show that both the information and preference effects, which are central to our results, continue to operate, with intuition similar to the baseline model. Thus, unless the fund manager perfectly knows her investors' preferences—an extreme case in which complete delegation achieves the first best—our core forces remain intact.

3.3.5. Communication between the fund manager and investors

An alternative to voting choice is a system in which the fund manager publicly announces a message and investors then vote themselves. This essentially is a form of mandatory pass-through voting, but with the added element of communication from the fund manager. In the setting of Section 3, if the fund manager is unbiased, there is an equilibrium in which she truthfully reveals her signal, and investors vote according to this signal if their bias is not strong enough and in line with their bias otherwise. Interestingly, the equilibrium in this game is equivalent to the equilibrium under voting choice. This is because the investors who optimally vote with the signal are exactly those who optimally delegate under voting choice, namely, those with $|x_i| \leq 2p - 1$. Thus, the same advantages and disadvantages relative to complete delegation also apply to mandatory pass-through voting with communication. In practice, however, regulatory constraints limit funds' ability to share information, making voting choice the more feasible way to implement this outcome.[17]

If the fund manager is biased, as in Section 3.3.1, communication may no longer be truthful (Crawford and Sobel 1982), and the two systems are no longer equivalent. Incentives for strategic communication also arise in systems where the fund polls investors about their preferences x_i: investors may then have incentives to exaggerate their biases, as in cheap-talk models with multiple senders (Austen-Smith 1993; Battaglini 2004).

4. Costly information acquisition

In the benchmark setting of Section 2, fund investors and the fund manager are endowed with information. Relaxing this assumption introduces a new source of misalignment: when information is costly to acquire, an investor's choice of whether to delegate his vote affects both his own and the fund manager's information acquisition, and thus the informativeness of

[17] Asset managers rarely disclose how they are going to vote or what their views are prior to the vote, partly due to fear that such communication can be considered as "solicitation" or "forming a group" and trigger costly disclosure and filings (e.g., Puchniak and Varottil 2023).

the vote, yet the investor does not internalize the resulting impact on other investors. This section therefore examines voting choice when information acquisition is costly. To isolate this channel, we return to the setting with no private values ($x_i = 0$), so all fund investors are identical.

The timeline is as follows. At date 1, the fund manager chooses precision $p \in \left[\frac{1}{2}, 1\right]$ of her signal at a cost $c(p)$, and simultaneously each investor chooses whether to delegate his vote. Let q_d denote the probability with which each investor delegates. Any investor who does not delegate chooses precision $\pi \in \left[\frac{1}{2}, 1\right]$ of his private signal σ_i at cost $\gamma(\pi)$ (only nondelegating investors have incentives to acquire information). The cost function $c(p)$ is twice differentiable and satisfies $c\left(\frac{1}{2}\right) = 0$, $c'(p) > 0$, $\lim_{p \to \frac{1}{2}} c'(p) = 0$, $\lim_{p \to 1} c'(p) = \infty$, and $c''(p) > 0$. Fund investors' cost function $\gamma(\pi)$ satisfies the same properties as $c(p)$. At date 2, all agents observe their private signals and votes are cast. The fund manager maximizes a fraction $f \in (0, 1]$ of expected investor value minus her information acquisition costs (we can think of f as the management fee).

In this setting, an investor's delegation decision creates a new externality: it affects the fund manager's information acquisition. Less delegation lowers the manager's incentives to become informed because her vote matters less when she expects to vote on behalf of fewer investors. This generates a feedback loop between investors' delegation choices and the manager's information acquisition. If an investor expects others to delegate with high probability, he anticipates that the manager will acquire information and largely determine the outcome. The investor's incentive to retain his vote and become informed is therefore small, both because the fund manager's vote is informed and because the likelihood of the investor being pivotal is low. Conversely, if he expects others not to delegate, he correctly infers that the manager will not produce information, making delegation unattractive. This feedback loop gives rise to multiple equilibria, characterized in the next result.

Proposition 4. *The set of equilibria under voting choice is as follows.*

(i) There always exists an equilibrium in which all investors delegate to the fund manager,

$q_d = 1$. *In this case,* $\pi = \frac{1}{2}$ *and* $p = (c')^{-1}(Nf)$.

(*ii*) *There always exists an equilibrium in which no investor delegates,* $q_d = 0$. *In this case,* $p = \frac{1}{2}$ *and* π *satisfies (A49) in the Appendix.*

(*iii*) *There may also exist an equilibrium with partial delegation,* $q_d \in (0, 1)$. *In this case,* $\pi \in \left(\frac{1}{2}, 1\right)$, $p \in \left(\frac{1}{2}, 1\right)$, *and the equilibrium values* q_d, π, *and* p *satisfy (A43), (A44), and (A47) in the Appendix.*

The system with complete delegation corresponds to the equilibrium with $q_d = 1$. Thus, voting choice coincides with complete delegation if this equilibrium is selected. If either of the other two equilibria is played, voting choice changes investor welfare. If investors can coordinate on the welfare-maximizing equilibrium, voting choice weakly dominates delegation, mirroring the conclusion of the benchmark model without costly information acquisition. But if coordination fails, voting choice can lead to worse outcomes:

Proposition 5. *Let* $\tau \in (\underline{\tau}, \bar{\tau})$ *parameterize the cost function* $\gamma(\pi, \tau)$ *such that (i) for any fixed* τ, $\gamma(\pi, \tau)$ *as a function of* π *satisfies all properties of the cost function introduced above; (ii)* $\frac{\partial^2}{\partial \pi \partial \tau} \gamma(\pi, \tau) > 0$ *for any* $\pi \in \left(\frac{1}{2}, 1\right)$ *and* $\tau \in (\underline{\tau}, \bar{\tau})$; *(iii)* $\lim_{\tau \to \underline{\tau}} \frac{\partial}{\partial \pi} \gamma(\pi, \tau) = 0$, *and* $\lim_{\tau \to \bar{\tau}} \frac{\partial}{\partial \pi} \gamma(\pi, \tau) = \infty$ *for any* $\pi \in \left(\frac{1}{2}, 1\right)$. *Then,*

(*i*) *if* τ *is sufficiently low, there exists an equilibrium under voting choice that Pareto-dominates the equilibrium under complete delegation, in the sense of delivering both higher investor welfare and higher expected utility for the fund manager.*

(*ii*) *if* τ *is sufficiently high, there exists an equilibrium under voting choice that is Pareto-inferior to the equilibrium under complete delegation, in the sense of delivering both lower investor welfare and lower expected utility to the fund manager.*

Intuitively, when τ is low, investors' information acquisition technology is efficient relative to that of the fund manager. In this case, the equilibrium in which all investors collect their own signals leads to more informed voting outcomes than complete delegation, where the vote relies on a single, relatively imprecise signal of the fund manager. By contrast, if τ is high, the fund acquires information more efficiently than individual investors, so delegation yields more informed decisions. However, under voting choice, there is a potential coordination failure: if investors expect no one else to delegate, the fund will not invest in information even when doing so is efficient. Proposition 4(ii) shows that such an equilibrium always exists.

4.1. Multiple funds and information acquisition

So far, we have assumed that the fund fully owns the firm on behalf of its investors. In Internet Appendix A.4, we analyze a broader ownership structure, which includes both this large fund and multiple smaller shareholders. This introduces a new strategic channel: the fund manager's voting-choice policy affects not only her own incentives to acquire information but also those of other shareholders, shaping the overall information environment.

Under complete delegation, the large fund is highly likely to cast the decisive vote, while small shareholders face a low probability of being pivotal. Anticipating this limited influence, they rationally invest little or nothing in information. As a result, even if the fund manager is well informed, the final vote reflects her signal alone, with almost no contribution from the rest of the ownership base. The aggregation benefit of having many independent information producers—the "wisdom of the crowd" effect—does not materialize.

Voting choice changes these incentives. When fund investors retain their votes, the large block of delegated votes breaks into many smaller votes that may go in different directions, making close outcomes more likely. This raises the probability that each small shareholder's vote is pivotal, strengthening his incentive to acquire information.

The consequences depend on how efficiently these small shareholders can produce information. If their information acquisition technology is weak, the voting-choice equilibrium suffers the same drawback as in Proposition 5 (ii): the fund manager does not acquire information, and the information produced by fund investors and small shareholders is too imprecise to offset this loss. Shareholder welfare is then lower than under complete delegation. But if small shareholders can acquire information efficiently, voting choice generates strong informational spillovers. The prospect of being pivotal motivates them to produce high-precision signals, and the aggregation of many such signals restores, and can even improve, the accuracy of the vote.

This extension highlights that the effects of voting choice depend not only on the large fund's behavior but also on how the rest of the ownership structure responds. When other shareholders, such as hedge funds, have efficient information-acquisition technologies, voting choice can be far less detrimental than when ownership is dominated by small passive funds or retail investors with weaker information capabilities. Evaluating the impact of voting choice therefore requires considering the ownership structure as a whole.

5. Implications

Voter participation. A natural concern with pass-through voting is that if voting is costly, allowing investors to vote directly may lead to insufficient participation. In practice, however, several features of current pass-through voting programs substantially mitigate this concern. One such feature is that most fund clients that exercise voting choice are institutional investors, and unlike retail investors, institutional investors rarely abstain.[18] A second feature is that both institutional and retail clients typically participate in voting choice through proxy-advisor policies rather than through direct voting. The two major proxy advisors offer tailored policies for larger fund clients—as well as menus of thematic policies, such as "climate," "socially responsible investing," or "faith-based"—that investors can opt into (Hu, Malenko, and Zytnick 2025). Once enrolled, the proxy advisor casts votes on the investor's behalf across all firms and proposals using the guidelines in that policy.[19]

Coarse menus and bundling of issues. Current voting-choice menus offered by proxy advisors are coarse. While full customization exists, it is costly and therefore unavailable to

[18] The likely reason is fiduciary duty: abstaining can expose institutions to criticism that they failed to act in their clients' interests. For example, based on our calculations using ISS Voting Analytics, mutual funds abstain in less than 1% of proposals.

[19] For example, retail investors in BlackRock's iShares Core S&P 500 ETF (IVV) must either delegate to BlackRock or choose one of proxy advisors' thematic policies; direct voting is not offered.

many smaller fund clients (Hu et al. 2025). Most investors instead choose from a limited set of broad thematic policies that do not capture the full heterogeneity of investor preferences. Despite this coarseness, the implications of our model continue to hold, as the key factor for our mechanisms is the underlying distribution of investor preferences. For example, in the setting of Section 3, even a very simple menu—such as two options, "always vote for pro-ES proposals" ($x > 0$) and "always vote against pro-ES proposals" ($x < 0$)—would reproduce the equilibrium of the baseline model. Indeed, investors with $x > \hat{x}$ would select the former, those with $x < -\hat{x}$ the latter, and moderate investors with $x \in [-\hat{x}, \hat{x}]$ would still delegate, where $\hat{x} = 2p - 1$. Delegation and voting outcomes would thus remain exactly as in our analysis.

At the same time, coarse menus have further implications because they bundle many issues together (Montagnes et al. 2025). This is compounded by a second rigidity in current systems: investors cannot exercise voting choice issue-by-issue. Instead, they must either retain their votes across all firms and proposals or delegate entirely. From a preference-aggregation perspective, this bundling—both in the form of coarse menus and the inability to delegate selectively across issues—may appear suboptimal. Yet, from the perspective of our results, it can mitigate a different problem: excessive retention of voting rights and the resulting underutilization of the fund manager's information. Investors who care strongly about a narrow set of topics, such as animal-welfare proposals, but are otherwise moderate, cannot express their views only on those issues. This constraint weakens the incentive to retain voting rights and can help preserve the role of the fund manager's information.

Other sources of preference heterogeneity. These two limitations, coarse menus and the inability to unbundle issues, relate to a broader question about the dimensions along which investors differ. Although the most visible application of pass-through voting concerns E&S preferences, heterogeneity can arise along other dimensions, such as tax status in the context of payout decisions or investor horizon and portfolio composition in the context of M&A votes. Current systems cannot finely capture most of these differences. As technology evolves and menus expand, voting-choice systems may begin to unbundle issues and allow preferences to be expressed along multiple dimensions, potentially making voting choice effectively vote-by-vote. Whether such evolution is beneficial depends on the relative informativeness of investors and fund managers on these additional types of proposals and on the distribution of preferences—the key forces highlighted by our model.

6. Conclusion

The growing concentration of voting power among large asset managers, combined with increasing disagreements over E&S issues, has motivated a major shift toward pass-through voting. This paper develops a theory to evaluate the welfare implications of these developments and the trade-offs they create. Our key insight is that voting choice affects not only how investor preferences are aggregated but also the informational content of the vote, and these two considerations can conflict. Allowing investors to retain their votes incorporates diverse preferences, yet it also changes whose information enters the vote and how much information is produced. As a result, voting choice can sometimes enhance both representation and information aggregation, but it can also weaken informed decision making, create coordination failures in delegation and information acquisition, and reduce collective investor welfare.

A full understanding of pass-through voting involves many forces beyond those captured in our simple model, and much remains to be explored. One important dimension is dynamics. While our analysis is static, in practice both fund managers and investors learn about one another over time: fund managers infer investors' preferences from observed pass-through behavior, and investors update about the fund manager's information quality and voting tendencies. Analyzing voting choice in a dynamic setting, where beliefs evolve and delegation and information-acquisition decisions adjust accordingly, is a natural direction for future research.

Code Availability: No new code was generated in support of this research.

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Appendix

Proof of Proposition 1. We first note that if $p < \pi$, i.e., the fund manager's signal is less precise than investors' signals, then voting choice is equivalent to mandatory pass-through voting and both dominate complete delegation. This is because no investor chooses to delegate voting to the fund manager, $q_d^* = 0$, and the system where all investors vote themselves dominates the one where the fund manager casts all the votes for two reasons. First, each individual investor's signal is more informative than that of the fund manager. Second, since investors' signals are conditionally independent, such system features the "wisdom of the crowd" effect, whereby the idiosyncratic errors in individual investors' signals cancel out in the aggregate vote outcome.

Suppose now that $p > \pi$, so that investors have a reason to delegate votes to the fund manager. Consider a symmetric equilibrium in which each investor delegates voting to the fund manager with probability q_d and votes based on his own signal with probability $1 - q_d$. For a given q_d, we can calculate the investor's value from delegating and not delegating, $V_{nd}(q_d)$ and $V_d(q_d)$, assuming that each other investor delegates with probability q_d:

$$
\begin{aligned}
V_{nd}(q_d) &= \left(\pi - \frac{1}{2}\right)(p\Omega_1(q_d) + (1-p)\Omega_0(q_d)) + v_{np}, \\
V_d(q_d) &= \frac{1}{2}(p\Omega_1(q_d) - (1-p)\Omega_0(q_d)) + v_{np},
\end{aligned}
$$

where v_{np} is the component of the investor's value coming from the events when his vote is not pivotal (which is the same upon delegation and non-delegation), and $\Omega_1(q_d)$ and $\Omega_0(q_d)$ are the probabilities that investor i is pivotal when $s = \theta$ (the fund manager's signal is correct) and $s \neq \theta$, respectively:

$$
\begin{aligned}
\Omega_1(q_d) &= P\left(q_d + (1-q_d)\pi, N-1, \frac{N-1}{2}\right), \\
\Omega_0(q_d) &= P\left((1-q_d)\pi, N-1, \frac{N-1}{2}\right).
\end{aligned}
$$

In equilibrium, q_d is such that each investor is indifferent between delegating his vote to the fund manager and voting himself, $V_{nd}(q_d) = V_d(q_d)$. The equilibrium probability of delegation q_d^* thus satisfies:

$$
p\Omega_1(q_d^*) + (1-p)\Omega_0(q_d^*) = \frac{1}{2\pi - 1}(p\Omega_1(q_d^*) - (1-p)\Omega_0(q_d^*)). \tag{A1}
$$

Malenko and Malenko (2019) show that holding the probability of pivotal constant, investor welfare is maximized when $\Omega_1 = \Omega_0$. Simplifying this expression, we get:

$$
p(2\pi - 2)\Omega_1(q_d^*) + (1-p)(2\pi - 1)\Omega_0(q_d^*) + (1-p)\Omega_0(q_d^*) = 0, \tag{A2}
$$

$$
(1-p)\pi\Omega_0(q_d^*) = p(1-\pi)\Omega_1(q_d^*) \Leftrightarrow \frac{\Omega_1(q_d^*)}{\Omega_0(q_d^*)} = \frac{(1-p)\pi}{p(1-\pi)}. \tag{A3}
$$

Next consider the optimal q_d, which maximizes expected investor welfare. Expected investor welfare is given by

$$\sum_{k=\frac{N+1}{2}}^{N} \left(pP\left(p_a, N, k\right) + \left(1-p\right) P\left(p_d, N, k\right)\right) - \frac{1}{2}, \tag{A4}$$

where

$$p_a = q_d + \left(1 - q_d\right)\pi; \qquad p_d = \left(1 - q_d\right)\pi. \tag{A5}$$

We can think about maximization over p_a and p_d subject to the constraint:

$$\begin{aligned} 1 - \frac{p_d}{\pi} &= \frac{p_a - \pi}{1 - \pi} \Leftrightarrow \pi\left(1-\pi\right) - p_d\left(1-\pi\right) = \pi\left(p_a - \pi\right) \\ &\Leftrightarrow \pi - p_d + \pi p_d = \pi p_a \Leftrightarrow \pi p_a + \left(1-\pi\right) p_d = \pi. \end{aligned} \tag{A6}$$

Consider the following optimization problem:

$$\max_{p_a, p_d} \sum_{k=\frac{N+1}{2}}^{N} \left(pP\left(p_a, N, k\right) + \left(1-p\right) P\left(p_d, N, k\right)\right) \tag{A7}$$

$$\text{s.t. } \pi p_a + \left(1-\pi\right) p_d \leq \pi \tag{A8}$$

The Lagrangian is

$$\mathcal{L} = \sum_{k=\frac{N+1}{2}}^{N} \left(pP\left(p_a, N, k\right) + \left(1-p\right) P\left(p_d, N, k\right)\right) + \lambda\left(\pi - \pi p_a - \left(1-\pi\right) p_d\right), \tag{A9}$$

and the first-order conditions are

$$\begin{array}{c} \sum_{k=\frac{N+1}{2}}^{N} P_p\left(p_a, N, k\right) = \lambda \frac{\pi}{p}, \\ \sum_{k=\frac{N+1}{2}}^{N} P_p\left(p_d, N, k\right) = \lambda \frac{1-\pi}{1-p}. \end{array} \tag{A10}$$

Since $p > \pi$, we have $\frac{\pi}{p} < 1$, and $\frac{1-\pi}{1-p} > 1$. Therefore, $p_a > p_d$. Dividing the two first-order conditions by each other,

$$\frac{\sum_{k=\frac{N+1}{2}}^{N} P_p\left(p_a, N, k\right)}{\sum_{k=\frac{N+1}{2}}^{N} P_p\left(p_d, N, k\right)} = \frac{\pi\left(1-p\right)}{p\left(1-\pi\right)}. \tag{A11}$$

Recall that the equilibrium satisfies

$$\frac{P\left(p_a, N-1, \frac{N-1}{2}\right)}{P\left(p_d, N-1, \frac{N-1}{2}\right)} = \frac{\left(1-p\right)\pi}{p\left(1-\pi\right)}. \tag{A12}$$

Recall also that $P(p,N,k) = C_N^k p^k (1-p)^{N-k}$ and $P_p(p,N,k) = P(p,N,k)\frac{k-Np}{p(1-p)}$, so

$$\sum_{k=\frac{N+1}{2}}^{N} P_p(p,N,k) = \sum_{k=\frac{N+1}{2}}^{N} \frac{N!}{k!\,(N-k)!} p^{k-1}(1-p)^{N-k-1}(k-Np). \tag{A13}$$

From Malenko and Malenko (2019),

$$\begin{aligned} L'(x) = \textstyle\sum_{k=\frac{N+1}{2}}^{N} P_x(x,N,k) = -\sum_{k=0}^{\frac{N-1}{2}} P_x(x,N,k) = -\frac{1}{x(1-x)}\left(\sum_{k=0}^{\frac{N-1}{2}} P(x,N,k)(k-Nx)\right) \\ = -\frac{1}{x(1-x)}\left(\textstyle\sum_{k=0}^{\frac{N-1}{2}} kP(x,N,k) - Nx\sum_{k=0}^{\frac{N-1}{2}} P(x,N,k)\right). \end{aligned} \tag{A14}$$

Note that $\sum_{k=0}^{\frac{N-1}{2}} P(x,N,k) = I_{1-x}\left(\frac{N+1}{2},\frac{N+1}{2}\right)$, where $I_x(a,b)$ is the regularized incomplete beta function. In addition, according to the proof of Auxiliary Lemma A1,

$$\begin{aligned} \sum_{k=0}^{\frac{N-1}{2}} kP(x,N,k) &= NxI_{1-x}\left(\frac{N+1}{2},\frac{N-1}{2}\right) \\ &= Nx\left[I_{1-x}\left(\frac{N+1}{2},\frac{N+1}{2}\right) - \frac{(1-x)^{\frac{N+1}{2}}x^{\frac{N-1}{2}}}{\frac{N-1}{2}B\left(\frac{N+1}{2},\frac{N-1}{2}\right)}\right], \end{aligned} \tag{A15}$$

where $B(a,b)$ is the beta function. Hence,

$$\begin{aligned} x(1-x)L'(x) = Nx\frac{(1-x)^{\frac{N+1}{2}}x^{\frac{N-1}{2}}}{\frac{N-1}{2}B\left(\frac{N+1}{2},\frac{N-1}{2}\right)} = \frac{((1-x)x)^{\frac{N+1}{2}}N!}{\left(\frac{N-1}{2}\right)!\left(\frac{N-1}{2}\right)!} = Nx(1-x)P\left(x,N-1,\frac{N-1}{2}\right) \\ \Leftrightarrow L'(x) = NP\left(x,N-1,\frac{N-1}{2}\right). \end{aligned} \tag{A16}$$

Therefore,

$$\frac{\sum_{k=\frac{N+1}{2}}^{N} P_p(p_a,N,k)}{\sum_{k=\frac{N+1}{2}}^{N} P_p(p_d,N,k)} = \frac{P\left(p_a,N-1,\frac{N-1}{2}\right)}{P\left(p_d,N-1,\frac{N-1}{2}\right)}. \tag{A17}$$

Hence, the equilibrium under voting choice implements the level of delegation that is optimal for investors as a whole.

Proof of Lemma 1.

We derive the expected welfare of investors for the more general case, which also applies to the case of a biased fund manager in Section 3.3.1 and Internet Appendix A.1. Suppose each investor delegates his vote to the fund manager if and only if $x_i \in (x_l, x_h)$, and the fund manager votes against the proposal upon receiving a negative signal with probability α. We derive the expected welfare of fund investors, $U(x_l, x_h, \alpha)$ for any possible x_l, x_h, and α. The case of an unbiased fund manager corresponds to $x_l = -x_h$ and $\alpha = 1$. Denote v_{FM} the vote of the fund manager: $v_{FM} = 1$ ($v_{FM} = 0$) corresponds to voting for (against) the proposal.

Recall that $\Pr(\theta=1)=\frac{1}{2}$ and that F is symmetric around zero. Note that

$$\Pr(\theta=1|v_{FM}=1)=\frac{\Pr(v_{FM}=1,\theta=1)}{\Pr(v_{FM}=1)}=\frac{\Pr(v_{FM}=1|\theta=1)}{\Pr(v_{FM}=1|s=1)+\Pr(v_{FM}=1|s=0)} \tag{A18}$$

$$=\frac{\Pr(v_{FM}=1|s=1)\,p+\Pr(v_{FM}=1|s=0)\,(1-p)}{\Pr(v_{FM}=1|s=1)+\Pr(v_{FM}=1|s=0)}=\frac{p+(1-\alpha)(1-p)}{2-\alpha}=\frac{1-\alpha(1-p)}{2-\alpha}.$$

First, consider the expected welfare of investors conditional on $v_{FM}=1$. In this case, the fund manager votes for the proposal, and hence a randomly drawn investor with preference parameter x votes for the proposal either if he delegates his vote to the fund manager—that is, $x_l\le x\le x_h$—or if he does not delegate and his private value is $x>x_h$. Hence, a randomly drawn investor votes in favor if and only if $x\ge x_l$, that is, with probability $\Pr(x\ge x_l)=1-F(x_l)$. The proposal is accepted if at least $\frac{N+1}{2}$ votes are cast in favor. Conditional on k votes in favor, and since only the fund manager's vote is based on a signal about θ, the common value to each of N investors is

$$\begin{aligned}2\Pr(\theta=1|v_{FM}=1)-1 &= 2\frac{1-(1-p)\alpha}{2-\alpha}-1 \\ &= \frac{2-2\alpha+2p\alpha-2+\alpha}{2-\alpha}=\frac{\alpha(2p-1)}{2-\alpha}.\end{aligned} \tag{A19}$$

The sum of all investors' private values is $k\mathbb{E}[x|x\ge x_l]+(N-k)\,\mathbb{E}[x|x<x_l]$, where the first term comes from k investors who vote for (with $x_i\ge x_l$) and the second term comes from $N-k$ investors who vote against (with $x_i<x_l$). If the proposal is rejected, then all investors' common values and private values are zero. Hence, the expected investor welfare in this case, denoted by $U(x_l,x_h,\alpha|v_{FM}=1)$, is given by

$$\sum_{k=\frac{N+1}{2}}^{N}\frac{N!}{k!\,(N-k)!}(1-F(x_l))^k F(x_l)^{N-k}\begin{pmatrix} N\frac{\alpha(2p-1)}{2-\alpha}+k\mathbb{E}[x|x\ge x_l] \\ +(N-k)\,\mathbb{E}[x|x<x_l]\end{pmatrix}, \tag{A20}$$

where

$$\mathbb{E}[x|x\ge x_l] = \frac{1}{1-F(x_l)}\int_{x_l}^{\infty}xf(x)\,dx, \tag{A21}$$

$$\mathbb{E}[x|x<x_l] = \frac{1}{F(x_l)}\int_{-\infty}^{x_l}xf(x)\,dx. \tag{A22}$$

Hence,

$$\begin{aligned}U(x_l,x_h,\alpha|v_{FM}=1) &= \left(\textstyle\sum_{k=\frac{N+1}{2}}^{N}P(1-F(x_l),N,k)\right)N\frac{\alpha(2p-1)}{2-\alpha} \\ &+N\left(\textstyle\int_{x_l}^{\infty}xf(x)\,dx\right)\left(\textstyle\sum_{k=\frac{N+1}{2}}^{N}\frac{(N-1)!}{(k-1)!(N-k)!}(1-F(x_l))^{k-1}F(x_l)^{N-k}\right) \\ &+N\left(\textstyle\int_{-\infty}^{x_l}xf(x)\,dx\right)\left(\textstyle\sum_{k=\frac{N+1}{2}}^{N-1}\frac{(N-1)!}{k!(N-k-1)!}(1-F(x_l))^{k}F(x_l)^{N-k-1}\right).\end{aligned} \tag{A23}$$

Note that

$$\int_{x_l}^{\infty} xf(x)\,dx = \int_{x_l}^{-x_l} xf(x)\,dx + \int_{-x_l}^{\infty} xf(x)\,dx = \int_{-x_l}^{\infty} xf(x)\,dx = -\int_{-\infty}^{x_l} xf(x)\,dx, \quad \text{(A24)}$$

and hence,

$$\begin{array}{r} U(x_l, x_h, \alpha | v_{FM} = 1) = \left(\sum_{k=\frac{N+1}{2}}^{N} P(1 - F(x_l), N, k)\right) N \frac{\alpha(2p-1)}{2-\alpha} \\ -N\left(\int_{-\infty}^{x_l} xf(x)\,dx\right)\left(\sum_{k=\frac{N+1}{2}}^{N} \frac{(N-1)!}{(k-1)!(N-k)!} (1 - F(x_l))^{k-1} F(x_l)^{N-k}\right) \\ +N\left(\int_{-\infty}^{x_l} xf(x)\,dx\right)\left(\sum_{k=\frac{N+1}{2}}^{N-1} \frac{(N-1)!}{k!(N-k-1)!} (1 - F(x_l))^{k} F(x_l)^{N-k-1}\right). \end{array} \quad \text{(A25)}$$

Consider the last two terms:

$$N\left(\int_{-\infty}^{x_l} xf(x)\,dx\right)\left(\begin{array}{c} \sum_{k=\frac{N+1}{2}}^{N-1} \frac{(N-1)!}{k!(N-k-1)!} (1 - F(x_l))^{k} F(x_l)^{N-k-1} \\ -\sum_{k=\frac{N+1}{2}}^{N} \frac{(N-1)!}{(k-1)!(N-k)!} (1 - F(x_l))^{k-1} F(x_l)^{N-k} \end{array}\right) \quad \text{(A26)}$$

$$= N\left(\int_{-\infty}^{x_l} xf(x)\,dx\right)\left(\begin{array}{c} \sum_{k=\frac{N+1}{2}}^{N-1} \frac{(N-1)!}{k!(N-k-1)!} (1 - F(x_l))^{k} F(x_l)^{N-k-1} \\ -\sum_{k-1=\frac{N-1}{2}}^{N-1} \frac{(N-1)!}{(k-1)!(N-1-(k-1))!} (1 - F(x_l))^{k-1} F(x_l)^{(N-1)-(k-1)} \end{array}\right)$$

$$\begin{array}{r} = N\left(\int_{-\infty}^{x_l} xf(x)\,dx\right)\left(\begin{array}{c} \sum_{k=\frac{N+1}{2}}^{N-1} \frac{(N-1)!}{k!(N-k-1)!} (1 - F(x_l))^{k} F(x_l)^{N-k-1} \\ -\frac{(N-1)!}{\left(\frac{N-1}{2}\right)!\left(N-1-\frac{N-1}{2}\right)!} (1 - F(x_l))^{\frac{N-1}{2}} F(x_l)^{\frac{N-1}{2}} \\ -\sum_{k=\frac{N+1}{2}}^{N-1} \frac{(N-1)!}{k!(N-1-k)!} (1 - F(x_l))^{k} F(x_l)^{N-1-k} \end{array}\right) \\ = -N\left(\int_{-\infty}^{x_l} xf(x)\,dx\right) P\left(1 - F(x_l), N-1, \frac{N-1}{2}\right). \end{array} \quad \text{(A27)}$$

Therefore,

$$\begin{array}{r} \frac{U(x_l, x_h, \alpha | v_{FM}=1)}{N} = \left(\sum_{k=\frac{N+1}{2}}^{N} P(1 - F(x_l), N, k)\right) \frac{\alpha(2p-1)}{2-\alpha} \\ -\left(\int_{-\infty}^{x_l} xf(x)\,dx\right) P\left(1 - F(x_l), N-1, \frac{N-1}{2}\right). \end{array} \quad \text{(A28)}$$

Second, consider the expected welfare of investors conditional on $v_{FM} = 0$. In this case, the fund manager votes against the proposal, and hence a randomly drawn investor votes against the proposal either if he delegates his vote to the fund manager—that is, $x_l \leq x \leq x_h$—or if he does not delegate but his private value is $x < x_l$. Hence, a randomly drawn investor votes for the proposal if and only if $x \geq x_h$, that is, with probability $\Pr(x \geq x_h) = 1 - F(x_h)$. The proposal is accepted if at least $\frac{N+1}{2}$ votes are cast in favor, and conditional on k votes in favor, the common value to each of N investors is

$$\begin{array}{rcl} 2\Pr(\theta = 1 | v_{FM} = 0) - 1 & = & 2\Pr(\theta = 1 | s = 0) - 1 \\ & = & 2(1-p) - 1 = 1 - 2p, \end{array} \quad \text{(A29)}$$

whereas the sum of all investors' private values is $k\mathbb{E}[x | x \geq x_h] + (N-k)\mathbb{E}[x | x < x_h]$. If the proposal is rejected, then all investors' common values and private values are zero. Hence, the expected investor welfare in this case, $U(x_l, x_h, \alpha | v_{FM} = 0)$, is given by

$$\sum_{k=\frac{N+1}{2}}^{N} \frac{N!}{k!\,(N-k)!} (1-F(x_h))^k F(x_h)^{N-k} \left(\begin{array}{c} N(1-2p) + k\mathbb{E}[x|x \geq x_h] \\ +(N-k)\,\mathbb{E}[x|x < x_h] \end{array} \right). \quad \text{(A30)}$$

Repeating the derivations from the case $v_{FM} = 1$, we get

$$\begin{array}{r} \frac{U(x_l,x_h,\alpha|v_{FM}=0)}{N} = \left(\sum_{k=\frac{N+1}{2}}^{N} P(1-F(x_h), N, k)\right)(1-2p) \\ -\left(\int_{-\infty}^{x_h} xf(x)\,dx\right) P\left(1-F(x_h), N-1, \frac{N-1}{2}\right) \\ = \left(\sum_{k=\frac{N+1}{2}}^{N} P(1-F(x_h), N, k)\right)(1-2p) \\ +\left(\int_{x_h}^{\infty} xf(x)\,dx\right) P\left(1-F(x_h), N-1, \frac{N-1}{2}\right). \end{array} \quad \text{(A31)}$$

Finally, we combine these cases together to get the unconditional expected investor welfare. The probability of $v_{FM} = 0$ is $\alpha \Pr(s=0) = \frac{\alpha}{2}$, and hence,

$$\begin{array}{r} \frac{U(x_l,x_h,\alpha)}{N} = \left(1-\frac{\alpha}{2}\right) \left(\begin{array}{c} \left(\sum_{k=\frac{N+1}{2}}^{N} P(1-F(x_l), N, k)\right) \frac{\alpha(2p-1)}{2-\alpha} \\ -\left(\int_{-\infty}^{x_l} xf(x)\,dx\right) P\left(1-F(x_l), N-1, \frac{N-1}{2}\right) \end{array} \right) \\ +\frac{\alpha}{2} \left(\begin{array}{c} \left(\sum_{k=\frac{N+1}{2}}^{N} P(1-F(x_h), N, k)\right)(1-2p) \\ +\left(\int_{x_h}^{\infty} xf(x)\,dx\right) P\left(1-F(x_h), N-1, \frac{N-1}{2}\right) \end{array} \right). \end{array} \quad \text{(A32)}$$

Using the expression for $P(y, N, k)$, note that

$$\sum_{k=\frac{N+1}{2}}^{N} P(1-F(\hat{x}), N, k) = \sum_{k=0}^{\frac{N-1}{2}} P(F(\hat{x}), N, k) = 1 - \sum_{k=\frac{N+1}{2}}^{N} P(F(\hat{x}), N, k) \quad \text{(A33)}$$

and that $P\left(F(\hat{x}), N-1, \frac{N-1}{2}\right) = P\left(1-F(\hat{x}), N-1, \frac{N-1}{2}\right)$. Hence, we can simplify (A32) as

$$\begin{array}{r} \frac{U(x_l,x_h,\alpha)}{N} = \left(\sum_{k=\frac{N+1}{2}}^{N} P(F(-x_l), N, k)\right) \frac{\alpha(2p-1)}{2} \\ -\left(1-\frac{\alpha}{2}\right)\left(\int_{-\infty}^{x_l} xf(x)\,dx\right) P\left(F(-x_l), N-1, \frac{N-1}{2}\right) \\ -\left(1-\sum_{k=\frac{N+1}{2}}^{N} P(F(x_h), N, k)\right) \frac{\alpha(2p-1)}{2} \\ +\frac{\alpha}{2}\left(\int_{x_h}^{\infty} xf(x)\,dx\right) P\left(F(x_h), N-1, \frac{N-1}{2}\right) \end{array} \quad \text{(A34)}$$

or equivalently,

$$
\begin{aligned}
\tfrac{U(x_l,x_h,\alpha)}{N} = &\left(\textstyle\sum_{k=\frac{N+1}{2}}^{N} P\left(F\left(-x_l\right),N,k\right) + \sum_{k=\frac{N+1}{2}}^{N} P\left(F\left(x_h\right),N,k\right) - 1\right) \tfrac{\alpha(2p-1)}{2} \\
&- \left(\tfrac{2-\alpha}{2}\right) \left(\textstyle\int_{-\infty}^{x_l} xf\left(x\right)dx\right) P\left(F\left(-x_l\right),N-1,\tfrac{N-1}{2}\right) \\
&+ \tfrac{\alpha}{2} \left(\textstyle\int_{x_h}^{\infty} xf\left(x\right)dx\right) P\left(F\left(x_h\right),N-1,\tfrac{N-1}{2}\right).
\end{aligned}
\tag{A35}
$$

When $-x_l = x_h = \hat{x}$ and $\alpha = 1$, (A35) becomes (11), which completes the proof.

Proof of Proposition 2. Consider the derivative of the investor's expected utility in $\hat{x}$:

$$
\begin{aligned}
&2\left(\sum_{k=\frac{N+1}{2}}^{N} P'\left(G\left(\hat{x}\right),N,k\right)\right)\left(p-\frac{1}{2}\right) \\
&+P'(G\left(\hat{x}\right),N-1,\frac{N-1}{2})\int_{\hat{x}}^{\infty} xg\left(x\right)dx - \hat{x}P(G\left(\hat{x}\right),N-1,\frac{N-1}{2}).
\end{aligned}
\tag{A36}
$$

When G is substituted with F, this derivative equals zero when evaluated at $\hat{x} = \hat{x}^*\left(F\right)$ by the first-order condition. Evaluating (A36) at $\hat{x}^*\left(F\right)$:

$$
\begin{aligned}
&2\left(\textstyle\sum_{k=\frac{N+1}{2}}^{N} P'\left(G\left(\hat{x}^*\left(F\right)\right),N,k\right)\right)\left(p-\tfrac{1}{2}\right) \\
&+P'(G\left(\hat{x}^*\left(F\right)\right),N-1,\tfrac{N-1}{2})\textstyle\int_{\hat{x}^*(F)}^{\infty} xg\left(x\right)dx - \hat{x}^*\left(F\right)P(G\left(\hat{x}^*\left(F\right)\right),N-1,\tfrac{N-1}{2}) \\
&= 2\left(\textstyle\sum_{k=\frac{N+1}{2}}^{N} P'\left(F\left(\hat{x}^*\left(F\right)\right),N,k\right)\right)\left(p-\tfrac{1}{2}\right) \\
&+P'(F\left(\hat{x}^*\left(F\right)\right),N-1,\tfrac{N-1}{2})\textstyle\int_{\hat{x}^*(F)}^{\infty} xg\left(x\right)dx - \hat{x}^*\left(F\right)P(F\left(\hat{x}^*\left(F\right)\right),N-1,\tfrac{N-1}{2}) \\
&= P'(F\left(\hat{x}^*\left(F\right)\right),N-1,\tfrac{N-1}{2})\textstyle\int_{\hat{x}^*(F)}^{\infty} x\left(g\left(x\right)-f\left(x\right)\right)dx < 0.
\end{aligned}
\tag{A37}
$$

The first equality holds because $G\left(\hat{x}^*\left(F\right)\right) = F\left(\hat{x}^*\left(F\right)\right)$. The second equality holds because the derivative is zero at $\hat{x} = \hat{x}^*\left(F\right)$ for distribution F. Finally, the inequality holds because $P'(q,N-1,\frac{N-1}{2}) < 0$ for $q > \frac{1}{2}$ and $\int_{\hat{x}^*(F)}^{\infty} x\left(g\left(x\right)-f\left(x\right)\right)dx > 0$ by first-order stochastic dominance. Therefore, $\hat{x}^*\left(G\right) < \hat{x}^*\left(F\right)$. An analogous argument applies if $G\left(x|x \geq \hat{x}^*\left(F\right)\right)$ is dominated by $F\left(x|x \geq \hat{x}^*\left(F\right)\right)$ in the sense of first-order stochastic dominance.

Proof of Proposition 3. To prove part (i), we subtract the expected investor welfare under complete delegation $(p-\frac{1}{2})$ from (11) for $\hat{x} = 2p-1$ and divide by $P(F\left(2p-1\right),N-1,\frac{N-1}{2})$:

$$
\Delta = -D\left(F\left(2p-1\right)\right)\left(2p-1\right) + \left(\int_{2p-1}^{\infty} xf\left(x\right)dx\right),
\tag{A38}
$$

where

$$
D\left(q\right) = \frac{\sum_{k=0}^{\frac{N-1}{2}} P\left(q,N,k\right)}{P\left(q,N-1,\frac{N-1}{2}\right)}.
\tag{A39}
$$

Voting choice dominates full delegation if and only if $\Delta > 0$. It follows that $\Delta > 0$ if and only if $\int_{2p-1}^{\infty} xf(x)\,dx > D(F(2p-1))(2p-1)$.

We next prove part (ii). By part (i), voting choice results in higher expected investor welfare than complete delegation when $\int_{2p-1}^{\infty} xf(x)\,dx$ is sufficiently high, so it is sufficient to prove that mandatory pass-through voting results in higher expected investor welfare than voting choice. The difference in the two expected utilities is given by:

$$\begin{aligned}
&P(\tfrac{1}{2}, N-1, \tfrac{N-1}{2})\left(\int_0^{\infty} xf(x)\,dx\right) - \left(2\sum_{k=\frac{N+1}{2}}^{N} P(F(2p-1), N, k) - 1\right)(p - \tfrac{1}{2}) \\
&\qquad - P\left(F(2p-1), N-1, \tfrac{N-1}{2}\right)\left(\int_{2p-1}^{\infty} xf(x)\,dx\right) \\
&> \left(P(\tfrac{1}{2}, N-1, \tfrac{N-1}{2}) - P\left(F(2p-1), N-1, \tfrac{N-1}{2}\right)\right)\left(\int_{2p-1}^{\infty} xf(x)\,dx\right) \\
&\qquad - \left(2\sum_{k=\frac{N+1}{2}}^{N} P(F(2p-1), N, k) - 1\right)(p - \tfrac{1}{2}),
\end{aligned} \tag{A40}$$

where the first inequality follows from $\int_0^{\infty} xf(x)\,dx > \int_{2p-1}^{\infty} xf(x)\,dx$. Since $P(\frac{1}{2}, N-1, \frac{N-1}{2}) > P\left(q, N-1, \frac{N-1}{2}\right)$ for any $q > \frac{1}{2}$ and $F(2p-1) > 0$, the expression in the last two lines of (A40) is strictly positive if $\int_{2p-1}^{\infty} xf(x)\,dx$ is sufficiently high.

Proof of Proposition 4.

We argue that on equilibrium path, if the fund manager engages in costly information acquisition ($p > \frac{1}{2}$), then she will always vote according to her signal. To see this, suppose, in contradiction, that the fund manager plays a mixed strategy for some signal realization. By symmetry, she also plays the mixed strategy for the other signal realization. However, this implies that conditional on signal realization and being pivotal, the fund manager is indifferent between the two actions $d \in \{0, 1\}$. This implies that information has no value to the fund manager, so she is better off deviating and not acquiring the signal in the first place.

Let q_d denote the probability with which an investor delegates voting to the fund manager. Suppose that fund investors expect that the fund manager acquires a signal with precision p and votes according to her signal. Consider an investor who expects that each other investor delegates with probability q_d and those who do not delegate acquire signals with precision $\tilde{\pi}$. At the end of this proof, we show that the investor's values from delegating voting to the fund and not delegating and acquiring a signal with precision π are given, respectively, by

$$V_d(\tilde{\pi}, p, q_d) = \frac{1}{2}\left(p\Omega(q_d + (1-q_d)\tilde{\pi}) - (1-p)\Omega((1-q_d)\tilde{\pi})\right), \tag{A41}$$

$$V_{nd}(\pi, \tilde{\pi}, p, q_d) = (\pi - \frac{1}{2})\left(p\Omega(q_d + (1-q_d)\tilde{\pi}) + (1-p)\Omega((1-q_d)\tilde{\pi})\right) - \gamma(\pi), \tag{A42}$$

where $\Omega(q) = P\left(q, N-1, \frac{N-1}{2}\right)$ is the probability that the votes of $N-1$ agents are split equally when each investor votes "for" with probability q and the votes are independent across investors. The intuition for (A41)–(A42) comes from the fact that an investor's vote makes a difference only if his vote is pivotal for the outcome, which happens if the other $N-1$ votes are split equally. Consider investor i who has not delegated. Since the fund manager's signal and the signals of other investors are conditionally independent of investor i's signal, investor i's gross value from his signal equals the probability that his vote is pivotal times the value of his signal in that event. The latter equals $\pi - \frac{1}{2}$ since acquiring signal with precision π changes the probability of a correct decision in the pivotal event from $\frac{1}{2}$ to π. The former equals $p\Omega\left(q_d + (1-q_d)\tilde{\pi}\right) + (1-p)\,\Omega\left((1-q_d)\tilde{\pi}\right)$, reflecting the fact that there are two possible events: the fund manager gets a correct signal (with probability p) and the fund manager gets an incorrect signal (with probability $1-p$). In the former case, each investor votes correctly if he delegates voting to the fund manager (with probability q_d) or if he does not delegate voting but gets a correct private signal (with probability $(1-q_d)\tilde{\pi}$). In the latter case, each investor votes correctly only if he does not delegate voting but gets a correct private signal (with probability $(1-q_d)\tilde{\pi}$).

In equilibrium, π must satisfy the first-order optimality condition and the beliefs of investors must be consistent with their actual strategies, $\tilde{\pi} = \pi$, which yields:

$$p\Omega\left(q_d + (1-q_d)\pi\right) + (1-p)\,\Omega\left((1-q_d)\pi\right) = \gamma'(\pi)\,. \tag{A43}$$

In addition, in equilibrium, if $q_d \in (0,1)$, then q_d must be such that each investor is indifferent between delegating and not delegating; that is, $V_d(\pi, p, q_d) = V_{nd}(\pi, \pi, p, q_d)$:

$$\begin{aligned} &\frac{1}{2}\left(p\Omega\left(q_d + (1-q_d)\pi\right) - (1-p)\,\Omega\left((1-q_d)\pi\right)\right) \qquad \text{(A44)} \\ =\ &\left(\pi - \frac{1}{2}\right)\left(p\Omega\left(q_d + (1-q_d)\pi\right) + (1-p)\,\Omega\left((1-q_d)\pi\right)\right) - \gamma(\pi)\,. \end{aligned}$$

Finally, consider the fund manager's information acquisition problem. Suppose the fund manager expects that each investor delegates voting with probability q_d and that investors who do not delegate acquire signals with precision π. The objective of the fund manager is

$$\max_p fN\left(p - \frac{1}{2}\right)\Pr\left(Piv_{FM}|q_{d,}\pi\right) - c(p)\,, \tag{A45}$$

where

$$\Pr\left(Piv_{FM}|q_{d,}\pi\right) = \sum_{k=0}^{N} P(q_d, N, k)\left(\sum_{m=\frac{N+1}{2}-k}^{\frac{N-1}{2}} P(\pi, N-k, m)\right) \tag{A46}$$

is the probability that the fund manager's vote is pivotal. Intuitively, when the fund manager is pivotal, acquiring the signal with precision p changes the probability of a correct decision from $\frac{1}{2}$ to p, which increases the value of all shares by $N\left(p - \frac{1}{2}\right)$, and the fund manager captures fraction f of this increase. Taking the first-order condition yields the equilibrium choice of precision p:

$$Nf\Pr\left(Piv_{FM}|q_{d,}\pi\right) = c'(p)\,. \tag{A47}$$

We next summarize all symmetric equilibria.

(a) Equilibrium with $q_d = 1$. Consider a potential equilibrium in which $q_d = 1$. If $q_d = 1$, then the fund manager is pivotal with certainty. Hence, (A45) reduces to $\max_p Nf\left(p - \frac{1}{2}\right) - c(p)$, implying $p = (c')^{-1}(Nf)$. Consider a deviation of investor i to not delegating. Since she expects each other investor to delegate with certainty, she expects to be pivotal with probability zero. Hence, deviation yields a payoff of zero if she does not acquire information, or negative if she does. Hence, deviation is not profitable, and thus $q_d = 1$ is indeed an equilibrium, and it always exists.

(b) Equilibrium with $q_d = 0$. Consider a potential equilibrium in which $q_d = 0$. If $q_d = 0$, then $\Pr(Piv_{FM}|q_{d,}\pi) = 0$, and therefore the solution to (A45) is $p = \frac{1}{2}$; that is, the fund manager does not acquire information. Therefore, deviation to delegation to the fund manager yields an investor a payoff of zero. In contrast, not deviating yields the investor a payoff of

$$\begin{aligned}\left(\pi - \frac{1}{2}\right)\Omega(\pi) - \gamma(\pi) &= \max_x \left(x - \frac{1}{2}\right)\Omega(\pi) - \gamma(x) \\ &> \left(\frac{1}{2} - \frac{1}{2}\right)\Omega(\pi) - \gamma\left(\frac{1}{2}\right) = 0.\end{aligned} \tag{A48}$$

Hence, deviation is unprofitable. Finally, (A43) with $q_d = 0$ implies that π is given by

$$\Omega(\pi) = \gamma'(\pi). \tag{A49}$$

Hence this is indeed an equilibrium, and it always exists.

(c) Equilibrium with $q_d \in (0, 1)$. Such an equilibrium exists for a nonempty set of parameters, which can be shown by constructing a numerical example.

We conclude the proof by deriving the values of information (A41)–(A42) and (A45). The first two values are very similar to the derivations in Malenko and Malenko (2019) (see section C of their Internet Appendix). For completeness, we repeat these derivations here. For brevity, we omit the dependence of expectations on $\tilde{\pi}$, p, and q_d in these derivations.

1. Value of not delegating and acquiring a signal with precision π**, (A42).** Investor i's vote makes a difference only if $\sum_{j\neq i} v_j = \frac{N-1}{2}$. Conditional on $\sigma_i = \theta$ and on being pivotal, his utility from the signal is $\frac{1}{2}\mathbb{E}[u(1,\theta)|\sigma_i = 1, PIV_i]$. Similarly, conditional on being pivotal and his private signal being $\sigma_i = 0$, the investor's utility from the signal is $-\frac{1}{2}\mathbb{E}[u(1,\theta)|\sigma_i = 0, PIV_i]$. Overall, the investor's gross (i.e., excluding costs) value of acquiring a signal with precision π is

$$\begin{gathered}\Pr(\sigma_i = 1)\Pr(PIV_i|\sigma_i = 1)\tfrac{1}{2}\mathbb{E}[u(1,\theta)|\sigma_i = 1, PIV_i] \\ -\Pr(\sigma_i = 0)\Pr(PIV_i|\sigma_i = 0)\tfrac{1}{2}\mathbb{E}[u(1,\theta)|\sigma_i = 0, PIV_i].\end{gathered} \tag{A50}$$

By the symmetry of the model, $\Pr(PIV_i|\sigma_i = 1) = \Pr(PIV_i|\sigma_i = 0)$ and $\mathbb{E}[u(1,\theta)|\sigma_i = 1, PIV_i] = -\mathbb{E}[u(1,\theta)|\sigma_i = 0, PIV_i]$, so we get

$$\begin{gathered}\tfrac{1}{2}\Pr(PIV_i|\sigma_i = 1)\mathbb{E}[u(1,\theta)|\sigma_i = 1, PIV_i] \\ = \tfrac{1}{2}\Pr(PIV_i|\sigma_i = 1)\begin{pmatrix}\Pr(\theta = 1|\sigma_i = 1, PIV_i) \\ -\Pr(\theta = 0|\sigma_i = 1, PIV_i)\end{pmatrix} = \left(\pi - \tfrac{1}{2}\right)\Pr(PIV_i),\end{gathered} \tag{A51}$$

where

$$\begin{aligned}\Pr(PIV_i) = \Pr(PIV_i|\theta=1) = p\Pr(PIV_i|s=1,\theta=1)\\ +(1-p)\Pr(PIV_i|s=0,\theta=1)\\ = pP\left(q_d+(1-q_d)\pi, N-1, \tfrac{N-1}{2}\right)\\ +(1-p)P\left((1-q_d)\pi, N-1, \tfrac{N-1}{2}\right).\end{aligned} \tag{A52}$$

Adding the cost of information acquisition yields expression (A42).

2. Value of delegation (A41). For brevity, we omit the dependence of expectations on $\tilde{\pi}$, p, and q_d. As before, investor i's vote makes a difference only if $\sum_{j\neq i} v_j = \frac{N-1}{2}$. Conditional on $s=1$ and on being pivotal, his payoff from delegation is $\frac{1}{2}\mathbb{E}[u(1,\theta)|s=1,PIV_i]$. Similarly, conditional on $s=0$ and on being pivotal, investor i's utility from delegation is $-\frac{1}{2}\mathbb{E}[u(1,\theta)|s=0,PIV_i]$. Overall, the investor's value from delegation is

$$\begin{aligned}\Pr(s=1)\Pr(PIV_i|s=1)\tfrac{1}{2}\mathbb{E}[u(1,\theta)|s=1,PIV_i]\\ -\Pr(s=0)\Pr(PIV_i|s=0)\tfrac{1}{2}\mathbb{E}[u(1,\theta)|s=0,PIV_i].\end{aligned} \tag{A53}$$

By the symmetry of the model, $\Pr(PIV_i|s=1) = \Pr(PIV_i|s=0)$ and $\mathbb{E}[u(1,\theta)|s=1,PIV_i] = -\mathbb{E}[u(1,\theta)|s=0,PIV_i]$, so we get

$$\begin{aligned}\tfrac{1}{2}\Pr(PIV_i|s=1)\,\mathbb{E}[u(1,\theta)|s=1,PIV_i]\\ =\tfrac{1}{2}\Pr(PIV_i|s=1)\left(\Pr(\theta=1|s=1,PIV_i)-\Pr(\theta=0|s=1,PIV_i)\right)\\ =\tfrac{1}{2}\Pr(PIV_i|s=1,\theta=1)\Pr(s=1|\theta=1)\\ -\tfrac{1}{2}\Pr(PIV_i|s=1,\theta=0)\Pr(s=1|\theta=0)\\ =\tfrac{1}{2}\Pr(PIV_i|s=1,\theta=1)\,p-\tfrac{1}{2}\Pr(PIV_i|s=1,\theta=0)(1-p).\end{aligned} \tag{A54}$$

Note that $\Pr(PIV_i|s=1,\theta=1) = P\left(q_d+(1-q_d)\pi, N-1, \frac{N-1}{2}\right)$. Similarly,

$$\begin{aligned}\Pr(PIV_i|s=1,\theta=0) = P\left(q_d+(1-q_d)(1-\pi), N-1, \tfrac{N-1}{2}\right)\\ = P\left((1-q_d)\pi, N-1, \tfrac{N-1}{2}\right),\end{aligned} \tag{A55}$$

where the last equality follows from the fact that $P\left(z, N-1, \frac{N-1}{2}\right) = P\left(1-z, N-1, \frac{N-1}{2}\right)$. Together, this yields expression (A41).

3. Value of information for the fund manager (A45). Conditional on $s=1$ and on being pivotal, the fund manager's utility from signal with precision p is $\frac{1}{2}fN\mathbb{E}[u(1,\theta)|s=1,PIV_{FM}]$. Similarly, conditional on being pivotal and the signal being $s=0$, the fund manager's utility from the signal is $-\frac{1}{2}fN\mathbb{E}[u(1,\theta)|s=0,PIV_{FM}]$. Overall, the fund manager's gross (i.e., excluding costs) value of acquiring a signal with precision p is

$$\begin{aligned}\Pr(s=1)\Pr(PIV_{FM}|s=1)\tfrac{1}{2}fN\mathbb{E}[u(1,\theta)|s=1,PIV_{FM}]\\ -\Pr(s=0)\Pr(PIV_{FM}|s=0)\tfrac{1}{2}fN\mathbb{E}[u(1,\theta)|s=0,PIV_{FM}].\end{aligned} \tag{A56}$$

Given the symmetry of the model, $\Pr(PIV_{FM}|s=1) = \Pr(PIV_{FM}|s=0)$ and

$$\mathbb{E}[u(1,\theta)|s=1,PIV_{FM}] = -\mathbb{E}[u(1,\theta)|s=0,PIV_{FM}], \tag{A57}$$

so we get

$$\begin{array}{c}\frac{1}{2}\Pr\left(PIV_{FM}|s=1\right)\mathbb{E}\left[u\left(1,\theta\right)|s=1,PIV_{FM}\right]\\ =\frac{1}{2}\Pr\left(PIV_{FM}|s=1\right)\left(\begin{array}{c}\Pr\left(\theta=1|s=1,PIV_{FM}\right)\\ -\Pr\left(\theta=0|s=1,PIV_{FM}\right)\end{array}\right)=\left(p-\frac{1}{2}\right)\Pr\left(PIV_{FM}\right).\end{array} \tag{A58}$$

It remains to calculate $\Pr\left(PIV_{FM}\right)$. Consider an event that k investors out of N delegated to the fund manager. The probability of this event is $P\left(q_d,N,k\right)$. In this event, the fund manager is pivotal if the number m of $N-k$ votes that investors cast themselves is between $\frac{N+1}{2}-k$ and $\frac{N-1}{2}$. The probability of one of these events occurring is $\sum_{m=\frac{N+1}{2}-k}^{\frac{N-1}{2}}P\left(\pi,N-k,m\right)$. Combining, we get (A45).

Proof of Proposition 5. We prove the proposition by comparing investor welfare and the fund manager's utility in equilibrium with $q_d=0$ and $q_d=1$. If $q_d=1$, investor welfare per share equals

$$\mathbb{E}\left[u\left(1,\theta\right)d\right]=\frac{1}{2}\Pr\left[s=1|\theta=1\right]-\frac{1}{2}\Pr\left[s=1|\theta=0\right]=\left(c'\right)^{-1}\left(Nf\right)-\frac{1}{2}, \tag{A59}$$

and the fund manager's utility is $\max_p\left(Nf(p-\frac{1}{2})-c\left(p\right)\right)$. If $q_d=0$, investor welfare per-share equals

$$\begin{array}{c}\Pr\left(\theta=1\right)\sum_{k=\frac{N+1}{2}}^{N}P(\pi,N,k)-\Pr\left(\theta=0\right)\sum_{k=\frac{N+1}{2}}^{N}P(1-\pi,N,k)-\gamma\left(\pi,\tau\right)\\ =\frac{1}{2}\sum_{k=\frac{N+1}{2}}^{N}P(\pi,N,k)-\frac{1}{2}\sum_{k=\frac{N+1}{2}}^{N}P(1-\pi,N,k)-\gamma\left(\pi,\tau\right)\\ =\sum_{k=\frac{N+1}{2}}^{N}P(\pi,N,k)-\frac{1}{2}-\gamma\left(\pi,\tau\right),\end{array} \tag{A60}$$

where $\pi:\Omega\left(\pi\right)=\frac{\partial}{\partial\pi}\gamma\left(\pi,\tau\right)$, and where we used $\sum_{k=0}^{N}P\left(1-\pi,N,k\right)=1$ and $P\left(1-\pi,N,k\right)=P\left(\pi,N,N-k\right)$. The fund manager's utility is

$$Nf\left(\sum_{k=\frac{N+1}{2}}^{N}P(\pi,N,k)-\frac{1}{2}\right). \tag{A61}$$

As $\tau\to\underline{\tau}$, $\frac{\partial}{\partial\pi}\gamma\left(\pi,\tau\right)$ approaches zero for any $\pi<1$. Therefore, π approaches one as $\tau\to\underline{\tau}$. Hence, investor welfare approaches $\frac{1}{2}>\left(c'\right)^{-1}\left(Nf\right)-\frac{1}{2}$ and the fund manager's utility approaches $Nf\frac{1}{2}>\max_p\left(Nf(p-\frac{1}{2})-c\left(p\right)\right)$, which proves the first part of the proposition. As $\tau\to\bar{\tau}$, $\frac{\partial}{\partial\pi}\gamma\left(\pi,\tau\right)$ approaches infinity for any $\pi>\frac{1}{2}$. Therefore, π approaches $\frac{1}{2}$ as $\tau\to\bar{\tau}$. Hence, investor welfare and the fund manager's utility approach zero, which proves the second part of the proposition.

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