The Voting Behavior of Women-Led Mutual Funds [*]

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Abstract

This paper examines the voting behavior of women-led mutual funds. We find that women-led mutual funds are more likely to support environmental and social (ES) proposals, but not governance ones. They are also more likely to support female candidates in board elections in firms where board gender diversity is low. Finally, women-led mutual funds are more likely to vote with management in firms headed by female CEOs. This in-group favoritism however does not conflict with the tendency of women-led mutual funds to support ES proposals. Our results suggest that female representation in fund management teams influences their voting behavior.

Keywords: Gender Diversity, Shareholder Voting, Mutual Funds

JEL Classification: G23, G30, M14

1 Introduction

Anecdotal and survey evidence indicates that women are largely underrepresented in the finance industry, especially in the field of investment management.[1] To address the lack of female representation, several long-run campaigns aim to get more women into portfolio roles, such as Girls Who Invest.[2] Likewise, industry-wide initiatives such as the Gender Diversity Partner Program which includes, among other asset managers, Fidelity International and Vanguard, seek to tackle the underrepresentation of women. Moreover, several institutional investors have started to require investment firms to improve gender diversity.[3] These recent developments raise the question of the implications of greater female representation for investment funds.

In this paper, we explore how female representation in mutual funds' management teams affects their voting behavior. Through their voting decisions, mutual funds can enhance the corporate governance and value of their portfolio firms (e.g., Cai, Garner, and Walkling 2009; Cuñat, Gine, and Guadalupe 2012; Cvijanović, Dasgupta, and Zachariadis 2016). Moreover, while they traditionally focus on governance issues, a growing number of shareholder proposals now relate to Environmental and Social (ES) issues. The voting behavior of mutual funds in ES related shareholder proposals has become an important channel through which mutual funds can express their concerns but also exert pressure on their portfolio firms regarding ES issues (e.g., He, Kahraman, and Lowry 2023; Di Giuli et al. 2022; Lowry, Wang, and Wei 2022; Flammer, Toffel, and Viswanathan 2021).

Importantly, ES votes are an aspect of mutual fund voting that is likely to be influenced

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1. According to a recent survey conducted by Morningstar, at the end of 2019, only 18 percent of U.S. fund managers were women. See: https://www.morningstar.co.uk/uk/news/210150/diversity-best-practices-in-the-asset-management-industry.aspx

2. Girls Who Invest is a non-profit organization founded in 2015 and dedicated to increasing the number of women in portfolio management and executive leadership in the asset management industry. Their benchmark for success is to have 30% of the world's investable capital managed by women by 2030.

3. For example, UBS has launched a portfolio that invests solely in hedge funds led by women (see https://www.ft.com/content/dab5a2b3-c083-411b-b2d1-969d6bcf862b). David Swensen, Yale's Chief Investment Officer, has publicly instructed the firms who manage the University's endowment to diversify their ranks (see https://yaledailynews.com/blog/2020/10/27/swensen-tells-money-managers-to-increase-diversity-if-they-want-to-work-with-yale/).

by female representation in mutual funds' teams. Prior studies document gender differences in pro-social and environmental preferences (e.g., Beutel and Marini 1995; Adams and Funk 2012; DellaVigna et al. 2013; Matsa and Miller 2013; Li et al. 2022; Hsu, Li, and Pan 2023)[4] as well as in risk-aversion (e.g., Borghans et al. 2009; Croson and Gneezy 2009; Faccio, Marchica, and Mura 2016). Both are important considerations for ES votes as funds that pursue a pro-social and environmental agenda or are more concerned about ES risks should be more supportive of ES proposals.[5] If mutual funds with greater female representation are characterized by stronger pro social and environmental preferences and greater risk aversion, they should be more supportive of ES proposals. However, documented gender differences are often population-based and as such ignore the role of selection. That is, female fund managers are potentially very different from other women in the population. Consistent with a selection effect, prior studies document that women in finance have different preferences in particular when it comes to risk aversion (e.g., Sapienza, Zingales, and Maestripieri 2009; Adams and Ragunathan 2017; Adams and Lowry 2022). Whether gender differences in preferences exist across fund managers and whether these differences affect the voting behavior of mutual funds for ES proposals is therefore an empirical question.[6]

In our empirical analysis, we focus on the voting behavior of funds that we refer to as women-led mutual funds (i.e., mutual funds for which at least 50% of the management team is composed of women). Following a common approach in the literature examining gender differences across fund managers (e.g., Adams and Kim 2020; Niessen-Ruenzi and Ruenzi 2019) or financial analysts (e.g., Kumar 2010; Jannati et al. 2020), we identify fund managers' gender based on their first names. In our sample, about 15% of fund votes on shareholder proposals are made by women-led mutual funds.

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4. Related studies show that women are more aware of climate change and its consequences (e.g., Davidson and Haan 2012; McCright 2010)

5. Recent evidence suggests that ES risks are a growing concern for investors but that their measurement and monetary impacts are difficult to estimate. He et al. (2023) show that greater support for ES proposals predict future ES risks.

6. There is however no clear prediction regarding the support for governance proposals. We nonetheless use governance-related shareholder proposals as a way to test whether the effect of female representation in mutual funds' management teams is specific to ES related proposals

We start by studying the characteristics of women-led mutual funds. Controlling for fund and year fixed effects, we find that funds with larger management teams are less likely to be women-led. This finding is not surprising as reaching the threshold of at least 50% is likely to be more difficult for funds with larger management teams. We also find weak evidence that funds whose managers have on average greater experience are less likely to be women-led funds. This is consistent with the historical large under-representation of women in the mutual fund industry. On the contrary, fund size (assets under management), performance, expense ratio, and average level and type of education of the management team are not related to the probability of a fund to be women-led.

We then turn to the core of our empirical analysis regarding the voting behavior of women-led mutual funds. Our main sample consists of 1,040,839 mutual fund votes on shareholder proposals targeting publicly-listed US firms. We use a stringent setting that includes proposal and fund fixed effects. The proposal fixed effects capture what is specific to each proposal for a given firm in a given annual meeting and therefore control away for both any time-varying firm characteristics (e.g., size, profitability, ownership structure, corporate governance) and any proposal characteristics (e.g., whether the proposal has a positive ISS recommendation). For a given proposal, we therefore examine whether women-led mutual funds vote more (less) favorably than other funds. The fund fixed effects capture any persistent characteristics at the fund level that may influence their voting behavior. Hence, our identification rests on instances where, for a given fund, variation in female representation in the management team changes whether a fund is women led.

We find that women-led mutual funds are significantly more likely to support ES proposals. This result cannot be attributed to a greater tendency of women-led mutual funds to support shareholder proposals in general as we observe no effect for governance-related shareholder proposals. The support for ES proposals by women-led mutual funds is economically important. Women-led mutual funds are more likely to support ES proposals by 15% (relative to the unconditional support for ES proposals). Digging deeper inside the

universe of ES proposals, we find that women-led mutual funds are significantly more likely to support both E and S proposals, consistent with recent evidence showing that female analysts improve both the social and environmental performance of the firms they follow (Li et al. 2022). These results suggest that through their voting behavior, women-led mutual funds seek to promote ES policies in their portfolio firms. Our findings however could suffer from two different sources of bias.

First, our results could be driven by self-selection. More precisely, due to their pro-social and environmental preferences, female fund managers may be more likely to work for ES funds. Since ES funds are also more likely to support ES shareholder proposals (e.g., Dikolli et al. 2022), this could explain our results. Using two classifications of ES funds based either on their names or Morningstar Globe ratings, we find that ES funds are indeed more likely to be women-led funds. However, we show that our results hold when we exclude ES funds, indicating that the stronger support of women-led mutual funds for ES shareholder proposals is not a byproduct of the stronger support of ES funds in general. Female fund managers could also self-select into funds with good track records regarding their support for ES proposals. To address this concern, we check that our results hold when we exclude funds with a high historical support for ES proposals.

Second, our results could be driven by the influence of fund families. That is, some fund families with stronger ES orientation may at the same time have guidelines to support ES proposals and promote female representation among the individual funds. Prior evidence however indicates that fund families do not always vote as a block, particularly for ES proposals (e.g., Dikolli et al. 2022; He et al. 2023; Iliev and Lowry 2015; Michaely, Ordonez-Calafi, and Rubio 2021). To account for the influence of fund families, we show that our results hold if we control for Fund Family $\times$ Year fixed effects, which capture any time-varying fund family level characteristics, including ES-wide voting guidelines.

Our results are consistent with women-led mutual funds having greater pro-ES preferences or being more concerned about ES risks. While the two explanations are not mutually

exclusive, we conduct several tests to assess their relevance. First, we examine the tendency of women-led mutual funds to vote in a one-size-fits-all manner for ES proposals. If women-led mutual funds are more concerned and informed about ES risks, they should separately assess the issue and merits of proposals on a given ES issue for each portfolio firm. On the contrary, if they have stronger pro-social and environmental preferences, they should be more likely to adopt a one-size-fits-all strategy of always supporting ES proposals. Using a one-size-fits-all measure of voting computed following Lowry et al. (2022), we find that women-led mutual funds are more likely to systematically vote in favor of ES proposals across their portfolio firms. This result is specific to ES proposals as we find that women-led mutual funds are not more likely to adopt a one-size-fits-all strategy for governance proposals. Second, we examine whether women-led mutual funds are more likely to support ES proposals when the aggregate support from other mutual funds is high. This test is motivated by recent evidence that higher support in ES proposals predicts future ES risks (He et al. 2023). Consistent with women-led mutual funds being more concerned about ES risks, we find that they are more likely to support ES proposals receiving high aggregate support. However, we find that they are also more likely to support ES proposals with low aggregate support, consistent with a preference channel. Third, we examine whether the support of women-led mutual funds for E proposals is stronger for firms with greater climate change exposure (measured using the proxy recently developed by Sautner et al. (2023). We do not find evidence that this is the case: women-led mutual funds are more likely to support environmental proposals regardless of firms' climate change exposure. Fourth, among ES proposals, the disclosure-related ones should be more relevant for investors concerned about ES risks than for investors pursuing a pro-social and environmental agenda since these proposals do not (directly) seek to improve firms' ES performance. We find that women-led mutual funds are significantly more likely to support both disclosure-related and other ES proposals. Overall, our results suggest that women-led mutual funds support ES proposals mainly because of pro-social and environmental preferences.

Unlike for shareholder proposals, there are no management proposals related to ES issues in our sample. Yet, voting patterns in director elections are interesting to study whether shareholders value and promote social objectives such as board diversity (e.g., Gow, Larcker, and Watts 2020). We examine whether women-led mutual funds are more likely to support female candidates in board elections for a large sample of 9,049,549 fund votes. We find that in general women-led mutual funds are not significantly more likely to support female candidates. However, this result may mask heterogeneity across firms depending on the existing level of gender diversity in the boardroom. Consistent with women-led mutual funds being concerned about promoting board gender diversity, we find that women-led mutual funds are significantly more likely to support female candidates when the fraction of female directors in the boardroom is low.

Overall, the combination of our results on ES shareholder proposals and on director elections indicates that women-led mutual funds promote ES policies and board gender diversity in their portfolio firms. However, the greater support to female candidates by women-led mutual funds could also result from "in-group favoritism" (i.e., the psychological phenomenon of people systematically adopting favorable views about members of the same group (e.g., Tajfel 1982; Hewstone, Rubin, Willis, et al. 2002)).[7] Nonetheless, our evidence that women-led mutual funds are more likely to support female directors in board elections only in firms with low board gender diversity is hard to reconcile with an "in-group" favoritism explanation. In the final part of our empirical analysis, we explore the existence of in-group favoritism in the voting behavior of women-led mutual funds in shareholder proposals and particularly the extent to which it may conflict with their tendency to support ES proposals.

In the context of shareholder proposals, in-group favoritism would take the form of a greater tendency for women-led mutual funds to vote with management (i.e., against share-

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7. Consistent with equity analysts being subject to in-group favoritism, Jannati et al. (2020) find that compared with female analysts, male analysts have lower earnings forecasts and worse stock recommendations for firms headed by female CEOs than for firms headed by male CEOs. Francis et al. (2015) also provide some evidence of in-group bias among analysts as female analysts receive fewer interruptions from female executives compared to male executives and male analysts are more likely to interrupt female executives in conference calls.

holder proposals) in firms headed by female CEOs.[8] Consistent with in-group favoritism, we find that women-led mutual funds are significantly more likely to vote against shareholder proposals when the firm is managed by a female CEO. To explore whether in-group favoritism conflicts with their pro-social and environmental preferences, we examine the voting behavior of women-led mutual funds for ES proposals targeted at firms with female CEOs. More precisely, pro-social and environmental preferences predict stronger support whereas in-group favoritism predicts lower support. We find that women-led mutual funds are more supportive of ES shareholder proposals even when the targeted firm is headed by a female CEO. On the other hand, we find that women-led mutual funds are significantly more likely to vote against governance shareholder proposals when the firm is headed by a female CEO. This suggests that the pro-social and environmental preferences of fund managers dominate in-group favoritism.

Our findings are relevant to several strands of the literature. First, our paper adds to the literature on the implications of team gender diversity in asset management. Prior studies examine the effect of gender diversity on the performance of mutual funds (Niessen-Ruenzi and Ruenzi 2019), venture capital funds (Calder-Wang and Gompers 2021), and hedge funds (Lu, Naik, and Teo 2021). In a related paper, Rau and Wang (2021) document gender differences in the sensitivity of mutual fund flows to fund performance. To the best of our knowledge, we are the first to explore the implications of female representation for the voting behavior of mutual funds. Because of the different aspects proxy voting encompasses (e.g., ES proposals, board elections, governance proposals), it offers a rich context to study how gender diversity in mutual funds' teams may manifest itself.

Second, our paper adds to the recent literature on the determinants of mutual fund votes in ES proposals (e.g., Di Giuli et al. 2022; Dikolli et al. 2022; He et al. 2023; Lowry et al. 2022; Michaely et al. 2021). We contribute to this literature by highlighting that female representation in mutual funds affects different aspects of their voting behavior. In

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8. Management almost always recommends voting against shareholder proposals. In our sample, 99% of mutual fund votes are for shareholder proposals with negative management recommendation

particular, our results indicate that women-led mutual funds are significantly more likely to support ES proposals. Increasing female representation in mutual funds may therefore have implications for the aggregate support for ES proposals, which remains relatively low.

Third, our results relate to the literature on corporate gender diversity. Recent studies document several determinants of board gender diversity such as public attention to gender equality (Giannetti and Wang 2021) or campaigns launched by the "Big-Three" institutional investors (Gormley et al. 2023). More closely related to our paper, recent work focuses on support for women in board elections (e.g., Gertsberg, Mollerstrom, and Pagel 2021; Gow et al. 2020). Our results indicate that increasing female representation in mutual funds' teams is likely to have spillover effects for board gender diversity since women-led mutual funds are significantly more likely than other funds to support female candidates in board elections.

2 Data and Measures

2.1 Main data sources and sample construction

Analyzing the voting behavior of women-led mutual funds requires data on mutual fund proxy voting as well as on the composition of mutual fund management teams. In this section, we describe the data sets used in the empirical analysis.

We obtain mutual fund proxy voting records over the period 2006 to 2018 from Risk Metrics' ISS Voting Analytics. This database contains votes cast by mutual funds on all proposals for Russell 3000 companies. For every vote cast, the database provides a description of the proposal being voted on, the sponsor of the proposal (management or shareholder), the voting recommendation of the firm's management and that of ISS, and the fund's vote. We consider the following fund votes: "For", "Against", "Abstain" ("Do Not Vote"), and "Withhold", for conciseness, we aggregate "Against", "Abstain", and "Withhold" together (Iliev and Lowry 2015). We restrict the sample to fund votes for which we are able to

identify the gender of all the fund managers.[9] We obtain the full names of fund managers from Morningstar direct mutual fund database (manager history).[10] We further drop fund observations for which we cannot compute our main control variables, which include fund size, expense ratio, the number of fund managers, the average manager tenure, and the average manager experience. These restrictions result in a sample of 1,040,839 fund votes on shareholder proposals (8,227 unique proposals for 1,296 unique firms voted by 4,014 unique funds) and 9,066,581 fund votes on director elections (135,248 unique proposals for 5,478 unique firms voted by 3,816 unique funds).

Among shareholder proposals, we differentiate between proposals related to governance issues and proposals related to environmental and social issues. Following common approach in the literature (e.g., He et al. 2023; Di Giuli et al. 2022), we identify proposal types based on category codes (*AgendaItemID*) provided by ISS Voting Analytics and we further read through the description (*ItemDesc*) to refine the list of ES proposals and to differentiate between E and S proposals. In this way, we identify among the 8,227 shareholder proposals, 1,642 (about 20%) that are related to ES issues. Within ES proposals, we identify 746 (45%) proposals related to environmental issues, 887 proposals (54%) related to social issues, and 9 (1%) ambiguous proposals that are related to both environmental and social issues.[11] Detailed information on shareholder proposal classifications and the complete list of E and S related proposals are reported in Appendix A1. Among management proposals, we identify

9. For shareholder proposals, initially 1,292,149 fund votes with valid NPX, and 1,220,309 fund votes after the restriction (94.5%).

10. We match ISS data to Morningstar data as follows: We retrieve the N-PX filings from the SEC website corresponding to the mutual fund votes reported in ISS Voting Analytics. We then use these N-PX files to identify the list of fund tickers associated with the votes. For each NPX-ticker, using fund *cik* and *series* information, we then retrieve from the SEC website the corresponding fund name. Finally, within each N-PX, we match the ISS fund names to their SEC fund tickers using the SEC fund names with the Stata fuzzy matching command *matchit*. Initially, there are 41,024 unique NPX-fund observations from ISS. We find perfect matches for 20,898 of the NPX-fund observations. We discard matches with a similarity score lower than 70% (9,658 NPX-fund observations). For the remaining matches (10,468), we manually validate them and drop another 1,417 NPX-fund observations. Finally, we drop instances where, over time, an ISS fund is linked to more than one unique Morningstar fund.

11. 8 out of 9 of these ambiguous proposals correspond to the category "Establish Environmental/Social Issue Board Committee". We include them when we consider ES proposals as a whole but exclude them when we focus on the subsets of E and S proposals.

the subset of proposals related to direction elections. Management proposals related to director elections are the ones with the following ISS types "M0201 - Elect Director", "M0214 - Elect Directors (Bundled)", "M0225 - Elect Directors (Opposition Slate) " and "M0299 - Elect Director (Management)".

2.2 Identifying women-led mutual funds

We identify fund managers' gender based on their first names that we obtain from Morningstar. Relying on first names to infer the gender is a common approach in the literature examining gender differences across fund managers (e.g., Adams and Kim 2020; Niessen-Ruenzi and Ruenzi 2019) and financial analysts (e.g., Kumar 2010; Jannati et al. 2020).

We start by matching fund managers' first names with a list of the most popular first names by gender for the last ten decades published by the U.S. Social Security administration.[12] We complement this approach by matching remaining managers' first names to the first name information provided by Namepedia[13], the world's largest information platform and community about personal names. Data are collected about names of all languages and cultures, in all scripts, with a focus on the Latin alphabet.[14] For each first name, Namepedia gives the percentage of feminine and masculine occurrences across countries (for instance the first name Alexandra is feminine at 98%). When the percentage of feminine (masculine) occurrences is greater than 50%, we assign the gender female (male) to the first name.[15] There are few names that we cannot identify as male or female.[16] We find a match for 3,441 unique manager first names out of 3,576 (96%). We keep in our sample the mutual funds

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12. Source : https://www.ssa.gov/oact/babynames/decades/index.html

13. Source : http://www.namepedia.org/

14. The names coded in Morningstar are in Latin alphabet.

15. For the large majority of the first names, the percentage of occurrences for feminine or masculine is above 90%.

16. Even after complementing with Google searches, there are 135 first names for which we cannot find a match using our approach because of typos in the names, mistakes (e.g., reporting the surname of the manager), a lack of matching, the name being 50% feminine or 50% masculine, the gender information being missing on Namepedia, or the first name being shorter than three characters (a restriction imposed by Namepedia). Relative to the other names, these names have a much lower occurrence in management teams.

for which we are able to determine the gender of all fund managers.

We classify a mutual fund as a women-led mutual fund if at least 50% of the fund managers are women. Our approach differs from Niessen-Ruenzi and Ruenzi (2019), who concentrate on single-managed funds and exclude team-managed funds. We do not restrict our sample to single-managed funds for two main reasons. First, the fraction of team-managed funds has sharply increased over the past decade.[17] For example, Evans et al. (2022) report that in their sample the number of funds managed by teams grows from 800 during the period 1992-2000 to 3,115 during the period 2010-2016. Likewise, we observe that most mutual funds in our sample are managed by a team of managers. Appendix A2 reports descriptive statistics on the number of fund votes on shareholder proposals made by mutual funds classified by team size. Only 23.4% of votes in our sample of shareholder proposals are made by funds with a single manager compared to 28.1% by funds with two managers, 17.3% by funds with three managers, 12.1% by funds with four managers, 7% by funds with five managers, and the remainder by funds with six managers or more. Concentrating on single-managed funds and excluding team-managed funds would therefore provide an incomplete view of the effect of managers' gender on mutual fund voting behavior. Second, following common approach in the literature, it is important to control for fund fixed effects in order to account for any time-invariant fund characteristics that may influence mutual fund voting behavior. Restricting the sample to single-managed funds would imply that our identification rests on very few instances when the manager of a single-managed fund is replaced by a manager with a different gender. More precisely, there are only 73 single-managed funds which, over our sample period, experience a change in the gender of the fund manager.

One empirical choice that we make is to use a threshold of 50% of women to classify funds as women-led funds. This way of classifying women-led mutual funds has two important merits: i) it ensures that women are equally or more numerous than men in the team and

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17. Niessen-Ruenzi and Ruenzi (2019) cover the time period from 1992 to 2009.

therefore that they exert significant influence over the fund voting decisions, and ii) it exhibits sufficient within-fund variation to allow for the inclusion of fund fixed effects and strengthen the identification by capturing instances when women become equal or dominant in number in a given fund team. An alternative choice would be to classify as women-led mutual funds, funds for which all managers are women. However, in our sample, there are almost no team-managed mutual funds with 100% of the management team being composed of women (only 0.58% of funds with two managers, 0.05% of funds with three managers, and none for funds with four managers or more). Requiring that the management team is composed only of women would de facto exclude almost all team-managed funds, which represents the large majority of our sample.

An alternative empirical choice would be to rely on the presence of at least one woman within the fund management team. A first concern with this measure is that it may be subject to some forms of green-washing. Moreover, it would force us to make strong assumptions regarding the ability of a single woman to yield significant power over the fund voting decisions. For example, using the threshold of at least one woman, the majority of funds with 5 managers or more would be classified as women-led mutual funds. A last alternative empirical choice would be to use the fraction of women in the fund team. However, focusing on the continuous percentage of women would not allow us to accurately capture whether women are indeed able to exert greater power on the fund voting decisions. For example, a within-fund increase from 0% to 20% (e.g., a fund with four male managers adding a female fund manager as a fifth member in the team) in the fraction of women in the management team may not significantly change the balance of power and the voting behavior of the fund.

2.3 Summary statistics

Table 1 reports the descriptive statistics for the main variables used throughout the empirical analysis. We report descriptive statistics separately for the sample of shareholder proposals, which consists of 1,040,839 mutual fund votes, and for the sample of director elections,

which consists of 9,049,549 mutual fund votes. Among shareholder proposals, 76% of votes are made for proposals related to governance issues and 24% of votes are for proposals related to ES issues (11% for environmental proposals and about 13% for social proposals).

Consistent with previous literature (e.g., Cai et al. 2009; Calluzzo and Kedia 2019; Iliev and Lowry 2015), mutual fund voting support differs markedly between shareholder proposals and director elections: More than 94% of votes are in favor for director elections compared to about 35% for shareholder proposals. For shareholder (director elections) proposals, 15% (17%) of the votes are made by women-led mutual funds.

Descriptive statistics for the control variables are also similar in the two samples. The average mutual fund in our samples has more than to $6 billion of assets under management. The expense ratio is about 0.8% in both samples. The average size of the management team is 3.3 managers across the two samples. The average fund manager tenure is about 5.5 years (67 months) and the average fund manager experience is above 10 years (130 months).

3 Empirical Results

3.1 Determinants of Women-Led Mutual Funds

In this section, we explore the characteristics of women-led mutual funds in a regression setting. We estimate the following regression at the fund-year level:

$$Women\ Led\ Mutual\ Fund_{i,t} = \beta_0 + \beta_1 \boldsymbol{X}_{i,t} + \gamma_t + \delta_i + \epsilon_{i,t}, \tag{1}$$

where *Women Led Mutual Fund*$_{i,t}$ is a dummy variable equal to one if at least 50% of fund i's management team is composed of women in year t. The vector $\boldsymbol{X}_{i,t}$ contains a wide range of contemporaneous fund characteristics. Specifically, the fund characteristics include the size, average tenure, and average experience of the management team, the fund size, and expense ratio. In some specifications, we further control for the average level (i.e., Master,

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MBA, PhD) and type (i.e., scientific degree, economics degree) of education of the fund team managers.[18] We also include time (γ_t) and fund (δ_i) fixed effects.

Table 2 presents the results of estimating Equation (1) with time and fund fixed effects. The results indicate that the management team size is negatively related with the probability of a fund to be women-led. To the extent that women are generally under-represented in the mutual fund industry, it is not surprising that reaching the threshold of at least 50% is less likely in funds with larger management teams. Our estimates also indicate that average fund manager experience tends to be lower in women-led mutual funds. This effect is plausible: Given the historical large under-representation of women in the mutual fund industry, female fund managers are likely to have on average less experience than their male counterparts. On the contrary, we find no evidence that women-led mutual funds differ from other funds in terms of fund size, expense ratio, average level and type of education of fund managers.

3.2 Women-led mutual funds and voting support for ES shareholder proposals

In this section, we present our baseline findings on the voting behavior of women-led mutual funds. Our empirical analysis relies on a large sample of 1,040,839 mutual votes on shareholder proposals. We include both governance and ES related shareholder proposals. This allows us to make sure that any differential in voting support for ES shareholder proposals cannot be attributed to women-led mutual funds having different voting behavior in general. Specifically, we estimate the following regression:

$$Vote\ For_{i,p} = \beta_0 + \beta_1 Women\ Led\ Mutual\ Fund_{i,p} + \beta_2 Women\ Led\ Mutual\ Fund_{i,p} \times ES\ Proposal_p + \beta_3 \boldsymbol{X}_{i,p} + \mu_p + \delta_i + \epsilon_{i,p} \tag{2}$$

18. Data on the education of fund managers are kindly provided by Alexandra Niessen-Ruenzi and are available for fund managers present in Morningstar over the period 2003-2010. For each level and type of degrees, we compute at the team level, the fraction of fund managers having a given degree. Details of the computation of these variables are provided in the Appendix.

where *Vote For$_{i,p}$* is a dummy variable equal to one if fund i votes in favor of proposal p, and *Women Led Mutual Fund$_{i,p}$* is a dummy variable equal to one if fund i has at least 50% of women in the management team when it votes on proposal p. *ES Proposal$_p$* is dummy variable that is equal to one if proposal p is related to ES issues. The coefficient of interest (β_2) captures the differential in voting support for ES proposals between women-led mutual funds and other funds. $\boldsymbol{X}_{i,t}$ is a vector of fund characteristics including the size of the management team, the fund size, average tenure and experience of the management team, and the fund expense ratio.[19]

We control for proposal (μ_p) and fund (δ_i) fixed effects. Proposal fixed effects control for each specific proposal voted on in a given firm at a given annual meeting. This is the strongest control for how the nature and timing of the proposal impacts mutual fund voting. In particular, proposal fixed effects absorb the effect of any time-varying firm-level characteristics, such as profitability, size, or governance. Moreover, the proposal fixed effects also capture proposal characteristics, including whether the proposal is related to ES issues, or whether the proposal has a positive ISS recommendation. Fund fixed effects capture fund-level fixed characteristics that may influence mutual fund voting behavior, such as fund ideology (Bolton et al. 2020) or ES orientation (Dikolli et al. 2022).

We estimate a linear probability model using OLS, as this allows us to include saturated fixed effects. The linear probability model also helps with the interpretation of interaction terms in our estimation (see Ai and Norton (2003) and Greene (2010)). In line with Iliev and Lowry (2015), we cluster the standard errors at the fund level.

Table 3, Column 1 reports the results of a regression relating a fund's support for a proposal to whether the fund is women-led restricting the sample to ES proposals. The coefficient on *Women-Led Mutual Fund* is positive and statistically significant at the 5% level, indicating that mutual funds managed by at least 50% of women are significantly more

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19. We do not include the variables related to the education of the fund managers because they are not related to the probability of a fund to be women-led and are not available for the entire sample. In unreported tests, we find that our main results are unchanged if we include them.

likely to vote in favor of shareholder proposals related to ES issues. Support for ES proposals by women-led mutual funds is economically important. As the unconditional support for ES proposals is 17.22%, the 2.51 coefficient estimate seen in Column 1 represents a 15% increase in the likelihood of the fund supporting ES proposals. Column 2 reports a regression relating a fund's support for a proposal to whether the fund is women-led restricting the sample to governance proposals. The coefficient on Women-Led Mutual Fund is close to zero and not statistically significant, indicating that mutual funds managed by at least 50% of women are not more likely to vote in favor of shareholder proposals related to governance issues. Therefore, the greater support for ES proposals cannot be explained by a tendency of women-led mutual funds to be more supportive of shareholder proposals in general.

In Column 3, we pool ES and governance proposals and include an interaction term between *Women-Led Mutual Fund* and *ES Proposal* following Equation (2). The results show that the coefficient on the interaction term is positive and statistically significant at the 1% level, indicating that women-led mutual funds are significantly more likely to support ES proposals than other funds. As the unconditional support for ES proposals is 17.22%, the 3.48 coefficient estimate seen in Column 3 represents a 20% increase in the likelihood of the fund supporting ES proposals compared to governance proposals. The coefficient on *Women-Led Mutual Fund*, which in this case, measures the voting support of women-led mutual funds for governance proposals, is not statistically significant. The results from Column 3 therefore confirm that women-led mutual funds are significantly more likely to support ES proposals (but not governance proposals) than other funds.

Finally, we study the voting support of women-led mutual funds for environmental and social proposals separately. We pool environmental and governance proposals (Column 4) and social and governance proposals (Column 5) and include interaction terms between Women-Led Mutual Fund and E Proposal (i.e., a dummy variable that takes the value of one if the proposal is related to environmental issues) or S Proposal (i.e., a dummy variable that takes the value of one if the proposal is related to social issues) following Equation (2).

The results indicate that women-led mutual funds are significantly more likely to support both environmental and social proposals. This stronger support of women-led mutual funds both for environmental and social proposals is plausible. Women generally exhibit stronger social preferences compared to men and are also more aware and concerned about climate change and its consequences (e.g., Davidson and Haan 2012; McCright 2010). The results are also consistent with recent evidence showing that female analysts improve both the social and environmental performance of the firms they follow (Li et al. 2022).

3.3 Women-led mutual funds and voting support for ES shareholder proposals: Additional Analyses

The results from the previous section suggest that through their voting behavior, women-led mutual funds promote ES policies in their portfolio firms. However, our estimates could suffer from different sources of bias including self-selection. In this section, we discuss these different sources of bias and present several tests to address them.

3.3.1 Self-selection in ES funds

First, our results could be driven by self-selection. Due to their pro-social and environmental preferences, female fund managers may be more likely to work for ES funds. At the same time, ES funds are more likely than non-ES funds to support ES shareholder proposals (e.g., Dikolli et al. 2022). We therefore check that our findings are robust to excluding ES funds to make sure that the stronger support for ES proposals by women-led mutual funds is not mechanically picking up the stronger support of ES funds. We identify ES funds in two different ways. First, following He et al. (2023) and Michaely et al. (2021), we classify a fund in our sample as an ES fund if its name contains a string that identifies it as an environmentally and socially responsible fund.[20] In this way, we identify 106 unique ES

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20. Based on these two papers, we use the following list of strings: "responsib", "social", "sustainab", "green", "ESG", "SRI", "ave Maria", "avemaria", "women", "low carbon", "clean", "catholic", "fossil", "ethic", "conscious", "climate", "ecolog", "environm", "water", "pax", "alternative energy", "wind energy",

funds corresponding to 24,291 fund votes. Second, we identify ES funds based on their Morningstar globe rating. The globe rating is a sustainability rating where mutual funds are ranked on a percentile basis and given a globe rating based on their holdings. The number of globes ranges from one globe (low sustainability) to five globes (high sustainability). While the Morningstar globe rating is a salient measure of fund sustainability and has been used in prior studies (e.g., Hartzmark and Sussman 2019; Gantchev, Giannetti, and Li 2021), it is available from August 2018 onward only. Hence, a limitation of relying on globe ratings is that we classify funds as ES or non-ES funds depending on their globe ratings at the end of our sample period.

We start by checking whether the fraction of women-led mutual funds is higher among ES funds than non-ES funds. First, we find that among ES funds (identified by name), 36.27% of fund votes are made by women-led mutual funds compared to 14.59% among non-ES funds. This suggests that ES funds are more likely to be women-led than other funds. Likewise, if we focus on globe ratings, we find that funds with a greater number of globes are more likely to be women-led. More precisely, among funds with five globes, 19.7% of fund votes are made by women-led mutual funds compared to 7.5% among funds with one globe.

Table 4, Column 1 reports the results of our baseline specification estimated excluding ES funds (identified by their name). The coefficient on the interaction between *Women-Led Mutual Fund* and *ES Proposal* is positive and statistically significant at the 1% level, indicating that the stronger support for ES proposals by women-led mutual funds is not mechanically picking up the stronger support of ES funds. We find similar results if we use a classification of ES funds based on globe ratings. In Column 2, we exclude funds with a globe rating equal to 4 or 5. In Column 3, we exclude funds with a globe rating equal to 5. In both columns, the results show that the coefficient on the interaction between *Women-Led Mutual Fund* and *ES Proposal* is positive and statistically significant at the 1% level, confirming that the stronger support for ES proposals by women-led mutual funds is not

"solar", "community", and "epiphany".

driven by self-selection of female fund managers into ES funds.

Female fund managers could also self-select into funds with good track records regarding their support for ES proposals. We therefore estimate our baseline regression excluding funds with historical voting support for ES proposals in the top quintile of the distribution (Column 4) or funds with an historical support above 50%. In both columns, we find that our main findings hold and that women-led mutual funds remain more likely to support ES proposals.

Overall, the results from Table 4 indicate that the stronger support for ES proposals by women-led mutual funds is not driven by self-selection of female funds managers into ES funds or funds with good track records regarding their support for ES proposals.

3.3.2 Fund Family Voting Guidelines

In this section, we discuss and address another source of bias resulting from the influence of fund families. More precisely, some fund families may at the same time have guidelines to support ES proposals and promote female representation among the individual funds' teams. From this perspective, our findings could be attributed to female representation in mutual funds and their voting behavior being both driven by fund families rather than women-led mutual funds having pro-social and environmental preferences or being more concerned with ES risks. However, recent evidence indicates that fund families do not always vote as a block, particularly for ES proposals (e.g., Dikolli et al. 2022; He et al. 2023; Iliev and Lowry 2015; Michaely et al. 2021).

To account for the influence of fund families, we check whether our results are robust to the inclusion of Fund Family × Year fixed effects. Notice that our baseline results are robust to including fund fixed effects, which capture any time-invariant characteristics at the family level that could influence voting support for ES proposals. The inclusion of Fund family × Year fixed effects allows to further control for any time-varying factors at the fund family level such as changes in voting guidelines or in the ES orientation of the fund family. Table

5 reports the results of estimating Equation (2) controlling for Fund family × Year fixed effects. The results show that the coefficient on the interaction between *Women-Led Mutual Fund* and *ES Proposal* is positive and statistically significant at the 1% level. Moreover, the magnitude of the coefficient is similar to the one in our baseline specification (Table 3, Column 3). Overall, the results from this section suggest that the stronger support of women-led mutual funds for ES proposals cannot be attributed to the influence of fund families.

3.4   Channels: Pro-social and environmental preferences versus concerns for ES risks

Our results so far suggest that women-led mutual funds are significantly more likely to support ES proposals. This finding is consistent with women-led mutual funds having greater pro-environmental and social preferences or being more concerned and informed about ES risks. These two explanations are not mutually exclusive. For example, recent evidence suggests that women have greater awareness of climate change and its consequences, which in turn may lead them to pursue a pro-environmental agenda and to be more concerned about climate-related risks. In this section, we propose different tests to assess the relevance of these two potential channels.

First, we examine the tendency of women-led mutual funds to vote in a one-size-fits-all manner. Specifically, if women-led mutual funds are more concerned and informed about ES risks, they should separately assess the merits of proposals on a given ES issue for each portfolio firm and should therefore be less likely to follow one-size-fits-all strategies. On the contrary, if they have stronger pro-social and environmental preferences, they should be more likely to adopt a one-size-fits-all strategy of always supporting ES proposals. To construct a one-size-fits-all measure of voting, we follow Lowry et al. (2022) and for each fund, agenda item, and year, we compute the absolute difference in the number of proposals that the fund supports minus the number it opposes divided by the number of proposals voted by the

fund. Higher values of the one-size-fits-all measure indicate less discretionary voting across firms on the same agenda item. Table 6, Panel A reports estimates of regressions where the dependent variable is the one-size-fits-all measure of voting and the independent variable of interest is a dummy variable indicating whether the fund is women-led. We estimate the regression for the full sample of shareholder proposals in Column 1 and then separately for governance and ES proposals in Columns 2 and 3. Results show that women-led mutual funds are not more active voters in general and for governance proposals. However, they are more likely to have a one-size-fits-all strategy for ES proposals, consistent with pro-social and environmental preferences.

Second, we examine whether the support of women-led mutual funds for ES proposals is stronger for proposals receiving high aggregate support. He et al. (2023) show that high support for ES proposals predicts future ES risks. If women-led mutual funds are more concerned and informed about ES risks, they should exhibit a stronger support for ES proposals for which aggregate support by other funds is also high. In Panel B, Columns 1 and 2, we examine the voting support of women-led mutual funds for ES proposals with low and high aggregate support. The results indicate that women-led mutual funds are more likely to support ES proposals receiving high aggregate support. Consistent with a preference channel, we also find that women-led mutual funds are more likely to support ES proposals even when the aggregate support received by these proposals is low.

Third, we examine whether the support of women-led mutual funds for environmental proposals differs depending on firms' climate change exposure. If women-led mutual funds are more concerned about environmental or climate risks, they should be more supportive of environmental proposals targeting firms with greater climate change exposure. On the contrary, if women-led mutual funds have pro-environmental preferences, they should support environmental proposals regardless of risk consideration. To measure firm-level climate change exposure, we use the measure recently developed by Sautner et al. (2023). In Columns 3 and 4, we examine the voting support of women-led mutual funds for environ-

mental proposals targeting firms with high and low climate change exposure. The results indicate that women-led mutual funds are more likely to support environmental proposals both for firms with high and low climate change exposure.

Finally, we examine the voting support of women-led mutual funds for ES proposals related to disclosure. The rationale for this test is that disclosure-related proposals should be more relevant for investors concerned about ES risks than for investors with a pro-social and environmental agenda. Indeed, disclosure-related proposals are useful to understand the firm's exposure to ES risks but do not (directly) seek to improve firms' ES performance. In Columns 5 and 6, we examine the voting support of women-led mutual funds for disclosure-related ES proposals and for other ES proposals. The results show that women-led mutual funds are significantly more likely to support both types of ES proposals. The magnitude and statistical significance of the coefficient is slightly higher for disclosure-related ES proposals. This is consistent with women-led mutual funds being more concerned and seeking information about their portfolio firms' exposure to ES risks rather than only seeking to improve ES performance.

Overall, the results from this section are mainly consistent with a preference channel: women-led mutual funds support ES proposals because gender differences in pro-social and environmental preferences. On the contrary, we find mixed evidence that women-led mutual funds support ES proposals because they are more informed and concerned about ES risks.

3.5 Women-led mutual funds and voting support for female candidates in board elections

In this section, we examine the voting behavior of women-led mutual funds in board elections. Unlike for shareholder proposals, there are no management proposals related to ES issues. Yet, voting patterns in director elections are interesting to study whether shareholders value

and promote social objectives such as board diversity (e.g., Gow, Larcker, and Watts 2020).[21] Specifically, we examine whether women-led mutual funds are more likely to support female candidates in board elections using a large sample of 9,049,549 director elections. Specifically, we estimate the following regression at the fund-proposal level:

$$Vote\ For_{i,p} = \beta_0 + \beta_1 Women\ Led\ Mutual\ Fund_{i,p} + \beta_2 Women\ Led\ Mutual\ Fund_{i,p} \\ \times Female\ Candidate_p + \beta_3 \boldsymbol{X}_{i,p} + \mu_p + \delta_i + \epsilon_{i,p} \quad (3)$$

where $VoteFor_{i,p}$ is a dummy variable equal to one if fund i votes in favor of the director election proposal p, and $FemaleCandidate_p$ is a dummy variable equal to one if the candidate is a female. Other variables are the same as in Equation (2). We retrieve the first name of directors from the description of the proposals and determine their gender following the same methodology we used for fund managers (see section 2.2). In our sample, 17% of mutual fund votes in director elections are for female candidates.

Table 7, Column 1 reports the results of estimating Equation (3). The results show that the coefficient on the interaction between *Women-Led Mutual Fund* and *Female Candidate* is positive but not statistically significant at conventional levels. This result may however mask heterogeneity depending on the level of board gender diversity across firms. The reason is that if women-led mutual funds value board gender diversity, they should be more supportive of female directors when board gender diversity is low. In Columns 2 and 3, we reestimate Equation (3) separately for subsamples of firms sorted by gender board diversity (before the election). The results show that women-led mutual funds are significantly more likely to support female candidates in board elections when the fraction of female directors in the boardroom is low.

Overall, the results from this section suggest that through their voting behavior in board elections, women-led mutual funds seek to promote board gender diversity in their portfolio

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21. More precisely, Gow et al. (2020) use shareholder votes in director elections to gain insights into shareholder views on diversity. They find that mutual fund support for diverse directors, especially female directors, is higher than for other candidates, indicating that shareholders value gender diversity among directors. Importantly, they document substantial heterogeneity across shareholders regarding the support for diverse candidates.

firms. Increasing female representation in mutual funds' team, which is the stated objective of numerous asset managers, is therefore likely to have spillover effects for promoting board gender diversity in their portfolio firms.

3.6   Women-led mutual funds and in-group favoritism in voting

The greater support for female directors in board elections is consistent with women-led mutual funds valuing and promoting board gender diversity. However, it may also result from "in-group" favoritism (i.e., the fact that people systematically adopt favorable views about in-group members and are indifferent or have lower opinion about out-group members).[22] If female fund managers have more favorable views about female directors, women-led mutual funds may therefore be more supportive of female candidates in board elections. However, the cross-sectional heterogeneity based on gender diversity in the boardroom suggests that this support is to some extent motivated by the willingness to promote gender diversity in the boardroom.

In this section, we examine the existence of in-group favoritism in the voting behavior of women-led mutual funds for shareholder proposals and how it may conflict with their tendency to support ES shareholder proposals. Firm management almost always opposes shareholder proposals and recommends voting against shareholder proposals. In our sample, 99% of votes for shareholder proposals have a negative management recommendation. In the context of shareholder proposals, in-group favoritism would therefore take the form of women-led mutual funds being less likely to support shareholder proposals (i.e., more likely to vote with management) in firms headed by female CEOs. We examine this issue by estimating the following regression:

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22. Prior studies provide empirical evidence that financial analysts exhibit in-group favoritism. For example, Jannati et al. (2020) show that compared to female analysts, male analysts have lower earnings forecasts and worse stock recommendations for firms headed by female CEOs than for firms headed by male CEOs. Likewise, Francis et al. (2015) show that female analysts receive fewer interruptions from female executives compared to male executives and that male analysts are more likely to interrupt female executives.

$$Vote\ For_{i,p} = \beta_0 + \beta_1 Women\ Led\ Mutual\ Fund_{i,p} + \beta_2 Women\ Led\ Mutual\ Fund_{i,p} \quad (4)$$
$$\times\ Female\ CEO_p + \beta_3 \boldsymbol{X}_{i,p} + \mu_p + \delta_i + \epsilon_{i,p}$$

where $FemaleCEO_p$ is a dummy variable equal to one if the proposal p is targeting a firm with a female CEO. All other variables are the same as in Equation (2). We identify firms headed by female CEOs based on the gender flag in ExecuComp.[23] In the sample of shareholder proposals, 6% of mutual fund votes are made for companies headed by a female CEO.

Table 8, Column 1 reports the results of estimating Equation (4). The results show that the coefficient on the interaction between *Women-Led Mutual Fund* and *Female CEO* is negative and statistically significant at the 1% level, indicating that women-led mutual funds are less likely to support shareholder proposals (i.e., to vote against management) when the firm is headed by a female CEO. This result is consistent with a form of in-group favoritism whereby women-led mutual funds are more likely to support female CEOs.

In the rest of the table, we assess whether in-group favoritism may conflict with the greater tendency of women-led mutual funds to support ES proposals. Specifically, we focus on the voting behavior of women-led mutual funds regarding ES proposals in firms with female CEOs. In-group favoritism would push women-led mutual funds to vote against the proposal whereas pro-social and environmental preferences as well as greater concern for ES risks would on the contrary lead them to vote in favor of the proposal.

In Columns 2 and 3, we reestimate Equation (4) separately for governance and ES proposals. The results show that women-led mutual funds are significantly more likely to vote against governance-related shareholder proposals when the CEO is a female. On the contrary, we find that for ES proposals, the coefficient on the interaction between *Women-Led Mutual Fund* and *Female CEO* is not statistically significant, while the coefficient on *Women-Led Mutual Fund* is positive and statistically significant at the 1% level. The results from

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23. The coverage of ExecuComp is limited SP1500 firms. As a result, for this analysis, we lose 147,127 fund votes for non-S&P1500 firms.

Column 3 therefore indicate that women-led mutual funds are more likely to support ES proposals in general and that this support does not decrease when the CEO is a female.

Overall, the results from this section suggest the existence of some form of in-group favoritism in the voting behavior of women-led mutual funds. However, it does not seem to conflict with their greater tendency to support ES proposals. Indeed, women-led mutual funds remain significantly more likely to support ES proposals even when the firm is headed by a female CEO.

4   Conclusion

There is a growing emphasis on female representation in the finance industry and, in particular, in investment management. While several initiatives seek to tackle the underrepresentation of women, little is known about the implications of female representation in asset management team. In this paper, we document that female representation in mutual fund teams has implications for their voting behavior.

Women-led mutual funds are significantly more likely to support ES related shareholder proposals. They are also more likely to support female candidates in board elections. These results suggest that women-led mutual funds promote ES policies and board gender diversity in their portfolio firms. All these results are robust to a stringent set of fixed effects, making it unlikely that they are due to omitted factors.

Finally, we find some evidence that women-led mutual funds are more likely to vote with management (i.e., against shareholder proposals) in firms headed by female CEOs, consistent with in-group favoritism. This in-group favoritism does not conflict with their tendency to support ES shareholder proposals. Indeed, even in firms headed by female CEOs, women-led mutual funds remain more likely to support ES shareholder proposals.

Data Appendix. Variable Definitions

Variables	Definitions	Sources
Vote For	Dummy variable equal to one if a fund votes in favor of the proposal (vote = "For"), and zero otherwise.	ISS Voting Analytics
Women-Led Mutual Fund	Dummy variable equal to one if at least 50% of the fund's management team is composed of women, and zero otherwise. Fund managers' gender is determined based on their first names.	Morningstar
Team Size	Number of members of a fund's management team.	Morningstar
Avg. Fund Manager Tenure	Average of the number of months fund managers have been working in the fund.	Morningstar
Avg. Fund Manager Experience	Average of the number of months since the fund managers first appeared in Morningstar	Morningstar
Fund TNA (million $)	Total net assets under management aggregated at the fund level.	Morningstar
Fund Expense Ratio	Net expense ratio averaged at the fund level.	Morningstar
Globe Rating >=4	Dummy variable that is equal to one if the fund's Globe Rating is equal or greater than 4 (as of 2018), and zero otherwise.	Morningstar
Globe Rating >=5	Dummy variable that is equal to one if the fund's Globe Rating is equal to 5 (as of 2018).	Morningstar
ES Funds (Name)	Dummy variable that is equal to one if the fund name contains a string that identifies it as an ES fund. Following He et al. (2023) and Michaely et al. (2021),we use the following list of strings: "responsib", "social", "sustainab", "green", "esg", "sri", "ave maria", "avemaria","women", "low carbon", "clean", "catholic", "fossil","ethic", "conscious", "climate", "gender", "ecolog", "environm", "water","pax", "alternative energy", "wind energy", "solar", "community", "epiphany".	ISS Voting Analytics
Historical support for ES proposals	Average support (vote "for") of a fund for ES proposals over the last three years.	ISS Voting Analytics
Disclosure-related ES proposals	Dummy variable that is equal to one if an ES shareholder proposal is about disclosure. We identify such proposals in two ways. First, we flag instances where the proposal description contains either the root word "report" or "disclos". Second, we consider as disclosure proposals, the proposals of the following types: "Report on Climate Change", "Report on EEO", "Report on Environmental Policies", or "Report on Sustainability".	ISS Voting Analytics
Climate Risk Exposure Dummy	Dummy variable that is equal to one if the climate change exposure of the firm targeted by an environmental proposals is greater than zero. We consider the exposure to opportunity, physical, and regulatory shocks associated with climate change. Computed only for environmental (E) proposals.	Sautner et al. (2023), https://osf.io/fd6jq/
One-size-fits-all voting	At the fund-agenda item-year level, this measure is the absolute difference in the number of proposals the fund votes for and against scaled by the total number of proposals	ISS Voting Analytics
Female CEO	Dummy variable that is equal to one if the CEO of the company targeted by the shareholder proposal is a female.	Execucomp

Female Candidate	Dummy variable that is equal to one if the director candidate is a female. We extrapolate the gender from the first name of the director candidate, following the same methodology we apply to fund managers	ISS Voting Analytics
Avg. *Degree* Dummy	Generic variables measuring the fraction of the fund managers that have a given degree. We compute the variables for the following degrees: Bachelor, Master, MBA, Science Degree, and Eco. Degree. Science degrees correspond to degrees with a title containing one of the following key root words: "science", "engine", "physic", "math", "stati", "bio", "chem", or "geol". Eco. Degrees correspond to degrees with a title containing one of the following key root words:"econ", "business", "administr", "management", or "finance". Education data on fund managers are kindly provided by Alexandra Niessen-Ruenzi and are available for fund managers present on Morningstar for the period 2003-2010. In our calculation, we ignore team members for which we do not have education data.	Alexandra Niessen-Ruenzi

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Table 1. Summary Statistics

This table reports summary statistics for our main variables for the samples of mutual fund votes on shareholder proposals and on director elections. The Data Appendix provides variable definitions.

Variables	#Obs.	Mean	S.D.	Min	0.25	Mdn	0.75	Max
Shareholder Proposals								
Vote For (%)	1,040,839	34.58	47.56	0.00	0.00	0.00	100.00	100.00
Governance Proposal	1,040,839	0.76	0.43	0.00	1.00	1.00	1.00	1.00
ES Proposal	1,040,839	0.24	0.43	0.00	0.00	0.00	0.00	1.00
Environmental Proposal	1,040,839	0.11	0.32	0.00	0.00	0.00	0.00	1.00
Social Proposal	1,040,839	0.13	0.34	0.00	0.00	0.00	0.00	1.00
Women-Led Mutual Fund	1,040,839	0.15	0.36	0.00	0.00	0.00	0.00	1.00
Team Size	1,040,839	3.28	2.85	1.00	2.00	2.00	4.00	43.00
Avg. Fund Manager Tenure	1,040,839	67.83	54.25	1.00	29.60	54.00	91.33	499.00
Avg. Fund Manager Experience	1,040,839	129.81	66.04	1.00	79.40	125.00	169.09	505.00
Fund TNA (million $)	1,040,839	6,200	18,000	4.2	180	810	3,300	120,000
Fund Expense Ratio	1,040,839	0.86	0.58	-0.14	0.32	0.84	1.22	6.64
Avg. Bachelor Dummy	814,103	0.99	0.06	0.00	1.00	1.00	1.00	1.00
Avg. Master Dummy	814,103	0.12	0.27	0.00	0.00	0.00	0.00	1.00
Avg. MBA Dummy	814,103	0.54	0.43	0.00	0.00	0.50	1.00	1.00
Avg. PhD Dummy	814,103	0.04	0.16	0.00	0.00	0.00	0.00	1.00
Avg. Science Degree Dummy	814,103	0.07	0.19	0.00	0.00	0.00	0.00	1.00
Avg. Eco Degree Dummy	814,103	0.36	0.42	0.00	0.00	0.00	1.00	1.00
Globe Rating >=4	1,013,797	0.26	0.44	0.00	0.00	0.00	1.00	1.00
Globe Rating >=5	1,013,797	0.06	0.24	0.00	0.00	0.00	0.00	1.00
ES Fund Name	1,040,839	0.02	0.15	0.00	0.00	0.00	0.00	1.00
Last-three-year ES Support	906,348	15.27	22.62	0.00	0.00	2.78	25.00	100.00
Female CEO	893,712	0.06	0.23	0.00	0.00	0.00	0.00	1.00
ES Disclosure Dummy	254,048	0.58	0.49	0.00	0.00	1.00	1.00	1.00
Climate Risk Exposure Dummy	117,916	0.25	0.43	0.00	0.00	0.00	1.00	1.00
One-size-fits-all voting	306,550	0.92	0.24	0.00	1.00	1.00	1.00	1.00
Director Elections								
Vote For (%)	9,049,549	94.50	22.80	0.00	100.00	100.00	100.00	100.00
Women-Led Mutual Fund	9,049,549	0.17	0.38	0.00	0.00	0.00	0.00	1.00
Team Size	9,049,549	3.28	2.90	1.00	2.00	2.00	4.00	43.00
Avg. Fund Manager Tenure	9,049,549	65.17	53.00	1.00	29.00	50.33	87.00	499.00
Avg. Fund Manager Experience	9,049,549	124.14	65.15	1.00	71.00	118.00	165.00	505.00
Fund TNA (million $)	9,049,549	6,500	21,000	5	180	820	3,400	160,000
Fund Expense Ratio	9,049,549	0.77	0.62	-0.14	0.22	0.66	1.17	6.64
Female Director	9,049,549	0.17	0.38	0.00	0.00	0.00	0.00	1.00
Board Gender Diversity	6,378,211	18.26	9.72	0.00	11.11	18.18	25.00	100.00

Table 2. Determinants of Women-Led Mutual Funds

This table reports regressions of Women-Led Mutual Fund (i.e., a dummy variable that is equal to one if at least 50% of the fund management team is composed of women) on fund characteristics. All regressions include year and fund fixed effects. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively. The Data Appendix provides variable definitions.

Women-Led Mutual Fund	(1)	(2)
Ln(Team Size)	-0.073***	-0.145***
	(0.013)	(0.021)
Ln(Avg. Manager Tenure)	0.011	0.001
	(0.007)	(0.009)
Ln(Avg. Manager Experience)	-0.023*	-0.026
	(0.013)	(0.019)
Ln(Fund TNA)	-0.007	-0.002
	(0.005)	(0.006)
Fund Expense Ratio	0.018	0.042
	(0.027)	(0.032)
Avg. Bachelor Dummy		-0.022
		(0.098)
Avg. Master Dummy		0.005
		(0.038)
Avg. MBA Dummy		-0.038
		(0.032)
Avg. PhD Dummy		-0.140
		(0.110)
Avg. Science Degree Dummy		0.076*
		(0.045)
Avg. Eco Degree Dummy		0.058
		(0.036)
#Obs	15,517	11,711
Year Fixed Effects	Yes	Yes
Fund Fixed Effects	Yes	Yes
Adjusted R-squared	0.698	0.741

Table 3. Women-Led Mutual Funds and Voting Support for ES Proposals

This table reports OLS regressions in a sample that includes mutual fund votes on governance and ES shareholder proposals for Russell 3000 firms over the period from 2006 to 2018. Columns 1 and 2 report the results for ES proposals and governance proposals, respectively. Column 3 reports the result for ES and governance proposals pooled together. Columns 4 and 5 report the result for E and governance and S and governance proposals pooled together respectively. In all columns, the dependent variable, Vote For, is a dummy variable that is equal to one if the fund votes in favor of the proposal and zero otherwise. Women-Led Mutual Fund is a dummy variable that is equal to one if at least 50% of the fund management team is composed of women. ES Proposal is a dummy variable equal to one if the proposal is related to environmental and social issues. All regressions include proposal fixed effects and fund fixed effects. Appendix A1 provides the list of shareholder proposals that we classify as E or S proposals. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively. The Data Appendix provides variable definitions.

Vote For	(1) ES Proposals	(2) Governance Proposals	(3) ES vs Governance Proposals	(4) E vs Governance Proposals	(5) S vs Governance Proposals
Women-Led Mutual Fund	2.512**	-0.913	-1.170	-1.102	-0.990
	(0.978)	(0.938)	(0.960)	(0.970)	(0.916)
Women-Led Mutual Fund × ES Proposal			3.482***	4.652***	2.392**
			(1.084)	(1.323)	(1.192)
Ln(Team Size)	-3.426***	-0.220	-0.927	-0.723	-0.501
	(0.901)	(0.934)	(0.871)	(0.962)	(0.833)
Ln(Avg. Manager Tenure)	-0.390	-1.156***	-1.039***	-1.077***	-1.120***
	(0.364)	(0.322)	(0.286)	(0.313)	(0.287)
Ln(Avg. Manager Experience)	1.877***	1.801***	1.782***	1.772***	1.789***
	(0.463)	(0.608)	(0.514)	(0.577)	(0.530)
Ln(Fund TNA)	-0.833***	-1.380**	-1.193***	-1.317***	-1.229***
	(0.384)	(0.375)	(0.341)	(0.367)	(0.342)
Fund Expense Ratio	-1.305	-2.587	-2.353	-2.380	-2.568
	(2.326)	(2.513)	(2.232)	(2.459)	(2.239)
#Obs	253,705	786,671	1,040,593	904,481	921,452
Proposal Fixed Effects	Yes	Yes	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.497	0.527	0.522	0.524	0.526

Table 4. Excluding ES funds

This table replicates the main results of Table 3 (column 3) excluding ES funds. ES funds are identified either based on fund name, globe rating, or fund voting support to ES proposals over the last three years. Appendix A1 provides the list of shareholder proposals that we classify as E or S. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively. The Data Appendix provides variable definitions.

Vote For	(1) Exclude ES funds based on fund name	(2) Exclude funds with Globe Rating >=4	(3) Exclude funds with Globe Rating >=5	(4) Exclude funds with top-quintile ES historical support	(5) Exclude funds in >50% ES historical support
Women-Led Mutual Fund×	2.925***	3.543***	3.078***	2.026**	4.019***
ES Proposal	(1.109)	(1.361)	(1.136)	(0.989)	(1.259)
#Obs.	1,017,043	776,963	975,823	726,389	827,310
Controls	Yes	Yes	Yes	Yes	Yes
Proposal Fixed Effects	Yes	Yes	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.519	0.524	0.522	0.499	0.513

Table 5. Controlling for Fund Families

This table replicates the main results of Table 3 (column 3) including fund family-year fixed effects. Families are identified based on ISS institution identifiers. Appendix A1 provides the list of shareholder proposals that we classify as E or S. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively. The Data Appendix provides variable definitions.

Vote For	(1)
Women-Led Mutual Fund × ES Proposal	3.650***
	(1.076)
#Obs.	1,040,534
Controls	Yes
Proposal Fixed Effects	Yes
Fund Fixed Effects	Yes
Family-Year Fixed Effects	Yes
Adjusted R-squared	0.541

Table 6. ES risks versus Pro-ES Preferences

Panel A examines funds' tendency to vote in a one-size-fits-all manner. In all columns, the dependent variable is a measure of one-size-fits-all voting computed at the fund-agenda-item level, as the absolute difference of the number of proposals the fund votes for minus the number of proposals the fund votes against, scaled by the total number of proposals. The main independent variable, Women-Led Mutual Fund, is a dummy variable that is equal to one if at least 50% of the fund management team is composed of women. Column 1 examines all shareholder proposals, Column 2 examines governance proposals, and Column 3 examines ES proposals. Panel B reports the results of our baseline regression (Table 3, Column 3) splitting ES shareholder proposals into different groups. In Columns 1 and 2, we split ES proposals based on the aggregate support they receive. In Columns 3 and 4, we split E proposals based on the climate change exposure of the firms targeted by the proposal. In Columns 5 and 6, we split ES proposals based on whether they are disclosure-related. Appendix A1 provides the list of shareholder proposals that we classify as E or S. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively. The Data Appendix provides variable definitions.

Panel A: One-Size-Fits-All Voting

One-size-fits-all voting	(1) All Proposals	(2) Governance Proposals	(3) ES Proposals
Women-Led Mutual Fund	-0.000	-0.007	0.012**
	(0.004)	(0.005)	(0.006)
Ln(Team Size)	-0.002	-0.004	0.001
	(0.003)	(0.003)	(0.004)
Ln(Avg. Manager Tenure)	0.001	0.003**	-0.004*
	(0.001)	(0.002)	(0.002)
Ln(Avg. Manager Experience)	-0.002	-0.003	0.000
	(0.002)	(0.002)	(0.003)
Ln(Fund TNA)	-0.002	-0.003**	0.002
	(0.001)	(0.001)	(0.002)
Fund Expense Ratio	0.001	-0.001	0.006
	(0.007)	(0.008)	(0.009)
#Obs.	306,349	196,209	109,860
Year Fixed Effects	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes
Adjusted R-squared	0.0406	0.0371	0.0872

Panel B: ES Proposal Splits

Vote For	(1) < Median Support	(2) >= Median Support	(3) Climate Risk Exposure	(4) No Climate Risk Exposure	(5) Disclosure Proposals	(6) Not Disclosure Proposals
Women-Led Mutual Fund × ES Proposal	2.643*	3.950**	3.740**	4.811***	3.855***	2.781**
	(1.534)	(1.605)	(1.479)	(1.290)	(1.082)	(1.210)
#Obs.	909,802	910,290	816,263	874,886	934,046	893,221
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Proposal Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.531	0.521	0.526	0.525	0.524	0.526

Table 7. Women-Led Mutual Funds and Support for Female Candidates in Board Elections

This table reports OLS regressions in a sample that includes mutual fund votes on director elections for Russell 3000 firms over the period from 2006 to 2018. Column 1 presents the results for the full sample of director elections. In Columns 2 and 3, we split the sample based on whether gender diversity in the boardroom before the director elections is equal or above the median value (18.18%). The dependent variable, Vote For, is a dummy variable that is equal to one if the fund votes in favor of the proposal. Women-Led Mutual Fund is a dummy variable that is equal to one if at least 50% of the fund management team is composed of women. Female Candidate is a dummy variable equal to one if the director candidate is a female. Constants are not reported. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively.

Vote For	(1) Full sample	(2) Low board gender diversity	(3) High board gender diversity
Women-Led Mutual Fund	0.034	0.082	0.258
	(0.172)	(0.181)	(0.173)
Women-Led Mutual Fund × Female Candidate	0.093	0.279**	-0.011
	(0.108)	(0.129)	(0.054)
Ln (Team Size)	0.015	0.135	0.043
	(0.174)	(0.212)	(0.205)
Ln(Avg. Manager Tenure)	-0.108	-0.100	0.052
	(0.087)	(0.097)	(0.092)
Ln(Avg. Manager Experience	0.178	0.201	0.048
	(0.159)	(0.202)	(0.198)
Ln(Fund TNA)	0.226**	0.106	-0.004
	(0.089)	(0.104)	(0.086)
Fund Expense Ratio	-0.664	-0.763	-0.440
	(0.881)	(0.805)	(0.600)
#Obs.	9,047,722	3,010,679	3,367,493
Proposal Fixed Effects	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes
Adjusted R-squared	0.409	0.390	0.356

Table 8. Women-Led Mutual Funds and Support for female CEOs

This table examines whether women-led mutual funds are more likely to vote against shareholder proposals when the firm is headed by a female CEO. The table reports the results of estimating Equation 4) for all shareholder proposals (Column 1), governance proposals (Column 2), and ES proposals (Column 3). In all columns, the dependent variable, Vote For, is a dummy variable that is equal to one if the fund votes in favor of the proposal and zero otherwise. Women-Led Mutual Fund is a dummy variable that is equal to one if at least 50% of the fund management team is composed of women. Female CEO is a dummy variable equal to one if the firm targeted by the shareholder proposal is headed by a female CEO. All regressions include proposal fixed effects and fund fixed effects. Appendix A1 provides the list of shareholder proposals that we classify as E or S. Standard errors are robust to heteroskedasticity, clustered by fund, and reported below in parentheses. ***, **, and * refer to significance at the 1%, 5%, and 10% levels, respectively. The Data Appendix provides variable definitions.

Vote For	(1) All Proposals	(2) GOV Proposals	(3) ES Proposals
Women-Led Mutual Fund	-0.109	-0.726	2.983***
	(0.940)	(1.014)	(1.008)
Women-Led Mutual Fund × Female CEO	-2.802***	-3.958***	-0.522
	(0.686)	(0.782)	(0.839)
#Obs.	893,563	667,362	225,977
Controls	Yes	Yes	Yes
Proposal Fixed Effects	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes
Adjusted R-squared	0.518	0.524	0.496

Appendix A1. Environmental and Social Shareholder Proposals

Panel A. Environmental Proposals

ISS Category Code	ISS Category Name	# Proposals
S0911	Anti-Social Proposal	30
S0742	Climate Change	109
S0745	Climate Change Action	2
S0731	Community- Environmental Impact	83
S0352	Company Specific-Governance Related	1
S0780	Energy Efficiency	6
S0740	Environmental - Related Miscellaneous	13
S0206	Establish Environmental/Social Issue Board Committee	5
S0205	Establish Other Governance Board Committee	7
S0743	GHG Emissions	141
S0744	Hydraulic Fracturing	15
S0510	Link Executive Pay to Social Criteria	26
S0709	Nuclear Power - Related	16
S0711	Nuclear Safety	1
S0741	Operations in Protected Areas	3
S0781	Recycling	35
S0779	Renewable Energy	40
S0730	Report on Environmental Policies	23
S0777	Report on Sustainability	150
S0220	Require Director Nominee Qualifications	9
S0224	Require E/S Issue Qualifications for Director Nominees	13
S0999	Social Proposal	7
S0708	Toxic Emissions	3
S0778	Wood Procurement	8

Panel B. Social Proposals

ISS Category Code	ISS Category Name	# Proposals
S0811	Adopt Sexual Orientation Anti-bias Policy	90
S0892	Animal Slaughter Methods	19
S0891	Animal Testing	23
S0890	Animal Welfare	47
S0911	Anti-Social Proposal	43
S0806	Charitable Contributions	22
S0425	China Principles	4
S0731	Community- Environmental Impact	5
S0427	Data Security Privacy and Internet Issues	24
S0206	Establish Environmental/Social Issue Board Committee	16
S0205	Establish Other Governance Board Committee	2
S0710	Facility Safety	13
S0602	Fair Lending	12
S0817	Gender Pay Gap	18
S0736	Genetically Modified Organisms	34
S0735	Health Care - Related	36
S0412	Human Rights Risk Assessment	18
S0416	Human Rights-Related [country]	1
S0414	Improve Human Rights Standards or Policies	153
S0815	Labor Issues - Discrimination and Miscellaneous	13
S0510	Link Executive Pay to Social Criteria	9
S0411	MacBride Principles	20
S0423	Operations in High Risk Countries	19
S0738	Product Safety	26
S0733	Reduce Tobacco Harm to Health	7
S0812	Report on EEO	41
S0777	Report on Sustainability	1
S0727	Review Foreign Military Sales	18
S0734	Review Tobacco Marketing	15
S0732	Sever Links with Tobacco Industry	1
S0999	Social Proposal	107
S0703	Tobacco - Related - Miscellaneous	8
S0725	Weapons - Related	16
S0417	Workplace Code of Conduct	6

Panel C. Environmental Social Proposals

ISS Category Code	ISS Category Name	# Proposals
S0206	Establish Environmental/Social Issue Board Committee	8
S0777	Report on Sustainability	1

Appendix A2. Distribution of Fund Votes by Management Team Size

This table reports the number of votes, the percentage of votes, and cumulated percentage of votes for funds with different management team size.

#Managers	Freq.	Pct.	Cum.
1	243,296	23.37	23.37
2	292,225	28.08	51.45
3	180,568	17.35	68.80
4	125,800	12.09	80.89
5	72,980	7.01	87.90
6	37,692	3.62	91.52
7	19,381	1.86	93.38
8	11,123	1.07	94.45
9	12,740	1.22	95.67
10	6,713	0.64	96.32
>10	1,199	3.68	100.00