Business Publications   Business (Richard Ivey School of Business)

2020

The Role of Mutual Funds in Corporate Social Responsibility

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ORIGINAL PAPER

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Abstract

This paper examines the role of mutual funds in corporate social responsibility (CSR). Using a fund-level, holdings-based CSR score, we find that CSR-friendly mutual funds improve firms' CSR standings. This effect is more pronounced for firms with higher mutual fund ownership and stronger corporate governance. We further show that while CSR-friendly mutual funds have influence on almost all CSR categories, they focus on increasing CSR strengths rather than reducing CSR concerns. We also discover that CSR-friendly funds are more likely to vote in favor of CSR proposals, and that firms owned by CSR-friendly funds are more likely to link their CEO compensation to CSR outcomes. These results suggest that actively managed mutual funds, which were previously thought to be indifferent (or even detrimental) to social and ethical issues, play a significant role in corporate social outcomes of the firms they invest in.

Introduction

Socially responsible investing has experienced tremendous growth over the past two decades. The US Social Investment Forum (USSIF) reports that assets managed using environmental, social, and governance (ESG) criteria totaled $12 trillion in 2018, while the Global Sustainable Investment Alliance estimated the number was $30.7 trillion.[1] Investment companies respond to this trend by introducing new mutual funds with explicit criteria related to corporate social responsibility (CSR).[2] Despite the rapid growth in socially responsible investments, many investment firms still do not support or implement CSR issues; for example, Blackrock Invesco, BNY Mellon, and Vanguard all voted against investor-led climate change resolutions multiple times.[3] It is unclear to what extent these funds, along with other shareholders, have the interest and ability to take concrete action in influencing the social

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1 GSI Alliance, "2018 Global Sustainable Investment Review," accessed March 10, 2020, (https://www.gsi-alliance.org/wp-content/uploads/2019/03/GSIR_Review2018.3.28.pdf).

2 For example, Fidelity Investments introduced two new index funds in 2017 to provide investors with a wider array of options for their ESG investments. Fidelity, "Fidelity Launches First Two Sustainability-Focused Index Funds," accessed on August 12, 2018, (https://www.fidelity.com/about-fidelity/institutional-investment-management/first-two-sustainability-focused-index-funds).

3 Financial Times, "Asset managers accused of climate change hypocrisy," accessed on November 2, 2018, (https://www.ft.com/content/1833bc1e-800d-11e6-8e50-8ec15fb462f4).

outcomes of the firms they hold, and this paper investigates exactly that.

In particular, we investigate whether actively managed mutual funds influence the CSR outcomes of firms they invest in. Focusing on actively managed mutual funds is important for several reasons. First, actively managed funds account for about 25% (approx. $3 trillion) of all ESG assets in 2018.[4] In fact, mutual fund ownership of ESG assets has grown more than 30% every year for the last five years and is expected to increase substantially in the coming years. Due to their large ownership, it is important to understand whether these funds influence long-term outcomes such as shareholder activism, corporate governance, and corporate social performance of the firms they invest in. While the current literature focuses on shareholder activism and corporate governance (e.g., Ashraf et al. 2012; Iliev and Lowry 2014; Dimson et al. 2015; Dyck et al. 2019), very little research focuses on the role of actively managed funds on corporate social performance.

Second, the current literature on ethics argues that transient investors, like actively managed funds, have no (or even negative) role to play in shaping a firm's CSR policy.[5] For example, Cox and Wicks (2011) conclude that for transient investors, corporate responsibility is the *least* important factor in their investment decision-making. However, these findings contradict the practices in the asset management industry. For example, according to the United Nations Principle of Responsible Investing (UNPRI), there is an increasing number of active investment managers who incorporate ESG criteria in their investment decision-making and ownership practices.[6] Given these opposing views among academia and practitioners, it is an empirical question whether actively managed mutual funds care about corporate social outcomes of firms which we aim to investigate.

Lastly, unlike other institutional investors such as pension or index funds which aim to preserve capital with long-term investment horizons, actively managed funds have a variety of investment objectives with long- and short-term investment horizons. These variations can lead to different fund managers having different preferences towards the CSR policies of firms they hold.[7] For example, if the fund manager believes that CSR is value-destroying (e.g., Friedman 1970; DiGiuli and Kostovetsky 2014; Masulis and Reza 2015), then they are less likely to hold socially responsible firms and are also less likely to support additional investments in the CSR/ESG space. On the other hand, if fund managers believe that CSR is value-enhancing (e.g., Besley and Ghatak 2007; Brekke and Nyborg 2008; Jo and Harjoto 2011; Harjoto and Laksmana 2018), they are more likely to hold more socially responsible firms and pressure their investee firms to improve CSR. For these reasons, actively managed mutual funds deserve independent analysis which is missing from the existing literature.

We study the above research questions using mutual fund holdings data from Morningstar which we combine with firm-level CSR ratings data from the MSCI ESG database (formerly known as KLD). Using portfolio holdings data also allows us to study a much larger sample of mutual funds instead of relying on a smaller group of self-declared "socially responsible" (SRI) funds. Following Borgers et al. (2015) and El-Ghoul and Karoui (2017), we calculate the CSR preferences of each fund as the value-weighted firm-level CSR rating of the portfolio. We then create *Average Fund CSR* which is the ownership-weighted average "CSR-friendliness" of all the mutual funds that own the respective firm. Using a sample of 3,803 unique firms and 2,588 unique funds for the period 1996–2013, we find that *Average Fund CSR* is positively related to a firm's future CSR standing.[8] A standard deviation increase in the *Average Fund CSR* is associated with a 0.35 standard deviation increase in a firm's future CSR. This relationship is more pronounced for firms with higher mutual fund ownership and stronger corporate governance. We also classify mutual fund ownership as *Friendly ownership* and *Unfriendly ownership* and find that they are positively and negatively related to a firm's future CSR, respectively. We find that mutual funds improve CSR strengths rather than reduce CSR concerns. Both the civic engagement and cooperation norms perspectives of social capital imply that CSR strengths rather than concerns engender trust and social capital among stakeholders (e.g., Guiso et al. 2004; Scrivens and Smith 2013). Moreover, it is much easier for the management to take purposeful action to improve positive CSR outcomes than to prevent negative outcomes. As noted by Servaes and Tamayo (2013) it seems "unlikely that a firm with a poor environmental record has made a concerted effort to obtain such a record" (p. 1054, emphasis added).

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[4] Available at https://www.ussif.org/sribasics.

[5] Existing literature argues that institutional investors' long investment horizon allows them to focus on the long-term benefits of CSR (Starks et al. 2017; Gibson and Kruger 2018; Gloßner 2019; Kim et al. 2019; Gibson et al. 2020; Ilhan et al. 2020).

[6] Available at https://www.unpri.org/signatories/reporting-for-signatories.

[7] Additionally, unlike index funds, actively managed mutual funds focus on active stock selection and have the ability to influence CSR policies by threat of 'exit' or 'voting with their feet' (Parrino et al. 2013).

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[8] We also employ an alternative measure of mutual fund social preference following Hong and Kostovetsky (2012) who find that Democratic-leaning managers are more likely to hold high-CSR firms. Our results remain robust in Table 9.

To address potential endogeneity concerns, we study changes in ownership caused by exogenous mutual fund liquidations where fund families liquidate mutual funds due to poor performance. The liquidating mutual fund sells *all* its holdings, and this event is not directly related to a specific firm's current or future CSR rating. We find that when firms suddenly lose CSR-unfriendly ownership, they will experience a significant increase in their CSR strengths.[9] We further explore three channels through which mutual funds affect a firm's CSR. First, we investigate how mutual funds use their shareholder voting rights to influence a firm's social initiatives. This is a direct mechanism through which mutual funds express their preference for CSR by voting 'For,' 'Against,' or 'Abstain.' We hypothesize that CSR-friendly funds care about CSR issues and are more likely to vote in favor of implementing CSR proposals, while CSR-unfriendly funds have little interest in CSR issues and may abstain or vote against CSR proposals. Consistent with this hypothesis, our results show that CSR-friendly funds are more likely to vote in favor of implementing CSR proposals.

Second, we study an emerging practice of executive compensation through which mutual funds may influence their firms' CSR. Firms worldwide have increasingly begun tying their executives' compensation to CSR-related objectives. For example, Berrone and Gomez-Mejia (2009) and Hong et al. (2016) find a positive relationship between CSR-contingent executive compensation and a firm's social performance, suggesting that such compensation contracts are an effective incentive for executives to improve CSR. We find that firms owned by CSR-friendly mutual funds are more likely to adopt this practice by explicitly linking a portion of their CEOs' compensation to corporate social performance.

Third, we find that board governance positively mediates the relationship between mutual fund CSR and firm CSR. As it can be 'costly' for mutual funds to directly monitor and influence corporate decision-making (Chen et al. 2007), a stronger board can serve this purpose on their behalf and represent their interests and views on CSR more faithfully and effectively. That is, CSR-friendly mutual funds have stronger positive effects on their firms with better board governance, while CSR-unfriendly mutual funds have stronger negative effects. This suggests that not all mutual funds view CSR favorably, but no matter what view they hold, better boards represent shareholder interests and views more faithfully and effectively.

This paper makes four contributions by studying whether and specifically how mutual funds influence CSR of firms they invest in. First, our study contributes to the literature that examines how institutional investors can influence a firm's CSR policies. To the best of our knowledge, our efforts are the first to examine, in detail, the effect of actively managed mutual funds on a firm's CSR. We create a CSR measure to represent mutual funds' preference for CSR and find that "CSR-friendly ownership" has a positive effect on a firm's future CSR. Second, we show that CSR-friendly mutual funds use a direct channel, by voting in favor of or against implementing CSR proposals, to influence their holding firms' social performance. This is one step towards opening the "black box" of CSR decision-making. Third, this study is the first to find that firms owned by CSR-friendly mutual funds are more likely to have their CEOs' compensation tied to CSR targets. Thus, we link the existing literature on institutional ownership, CSR, and executive compensation by showing that mutual funds can actively improve a firm's CSR outcomes through the channel of compensation incentives. Lastly, from an ethical perspective, we highlight the importance of corporate social responsibility among actively managed mutual funds, which were previously thought to be indifferent (or even detrimental) to social and ethical issues of the firms they invest in.

In the remainder of this paper, Sect. 2 provides an overview of the related literature and the development of our hypotheses; Sect. 3 presents the outline of our data and the construction of variables; Sect. 4 presents the results and discussions; Sect. 5 concludes.

Literature Review and Hypotheses Development

Mutual Fund Ownership and CSR

On the link between CSR and firm value, Bénabou and Tirole (2010) summarize the literature and offer three perspectives. The first view of *doing well by doing good* argues that CSR aligns with value maximization as it enables management to adopt a long-term perspective (Edmans 2011). By implementing CSR, firms can increase product differentiation, build a reputation, increase customer loyalty, and command a price premium (Besley and Ghatak 2007; Brekke and Nyborg 2008; Malik 2015). The second view of *delegated philanthropy* is that firms engage in social behavior to represent their stakeholders' social orientation because firms have superior information and lower transaction costs of philanthropy. Such social behaviour can improve firm value by attracting motivated stakeholders, but in many cases can also reduce firm value through excessive charity and salaries to employees. The third view of *insider-initiated*

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[9] In untabulated results, we find similar results using exogenous fund mergers within or across fund families. Note that while mergers of mutual funds are exogenous (McLemore 2018), retaining or dropping stocks after the mergers can be endogenous for reasons related to CSR. We do find CSR-friendly mutual funds gradually drop low-CSR firms after mergers.

philanthropy perceives CSR as a manifestation of agency problems inside a firm which destroys shareholder value (Friedman 1970; Di Giuli and Kostovetsky 2014; Masulis and Reza 2015). For example, managers may over-invest in CSR for personal benefits such as better personal reputation (Barnea and Rubin, 2010) or higher compensation through CSR-contingent compensation contracts (Hong et al. 2016).

While several studies in the current literature focus on the role of institutional ownership on shareholder activism and corporate governance, very little research focuses on how institutional owners perceive and manage CSR.[10] For example, Dimson et al. (2015) find that institutional CSR activism increases shareholder value. Dyck et al. (2018) show that institutional ownership originating from countries with strong environmental and social norms is positively associated with a firm's social performance. Hoepner et al. (2018) suggest that institutional investors engage with firms to reduce downside risk. In general, institutional shareholders are argued to have longer investment horizons which allows them to focus on the long-term benefits of CSR on shareholder value (Gloßner 2019; Gibson and Kruger 2018; Kim et al. 2019; Starks et al. 2017). Using a survey, Krueger et al. (2020) find that institutional investors expect climate risks to have important financial implications for their portfolio firms. Flammer et al. (2019) find that environmental shareholder activism by institutional investors increases the voluntary disclosure of climate change risks. Harjoto et al. (2017) find that institutional ownership is a concave function of CSR and suggests that institutional investors do not see CSR as strictly value-enhancing. As the role of shareholders is mainly attributed to their identities (Shleifer and Vishny 1997; Cronqvist and Fahlenbrach 2008; Lin et al. 2011), a more rigorous investigation of institutional investor heterogeneity is required. However, to our knowledge, no studies have examined how actively managed mutual funds affect a firm's CSR policy.[11] Actively managed mutual funds are important in CSR research for several reasons: first, actively managed funds own a large portion of ESG assets, which makes them an important player in this space. These funds hold more than approximately $3 trillion of all ESG assets in 2018 and their ownership is expected to increase substantially in the coming years. Second, these funds have a

significant ability to influence CSR policies of firms they hold by "voting with their feet" which other funds, such as index funds, do not have (Parrino et al. 2003). Lastly, the current literature in ethics views actively managed funds as transient investors and argues that they have no (or negative) role to play in shaping a firm's CSR policy. In fact, Cox and Wicks (2011) conclude that for transient investors with shorter investment horizons, corporate responsibility is the *least* important factor in their investment decision-making. Other studies show that investors with longer investment horizons prefer firms with higher CSR and more effectively influence a firm's CSR policies when compared to investors with shorter horizons (Humphrey et al. 2016; Starks et al. 2017; Gibson and Krueger 2018). Actively managed mutual funds are assumed to be short-horizon investors because they face a higher threat of fund outflows if they underperform (Brown et al. 1996; Chevalier and Ellison 1997) as opposed to pension plans where fund flows are sticky (Sialm et al. 2015).[12] They also have a higher portfolio turnover when compared to pension funds and other longer-horizon investors (Cella et al. 2013). This could create incentives for mutual fund managers to focus on short-term financial performance (Tucker 2018). Given that CSR usually only creates long-term benefits (Mahoney and Thorne 2005; Hill et al. 2007), this leads us to our first hypothesis:

H1 Actively managed mutual fund ownership is negatively related to a firm's CSR.

In the cross-section of mutual funds, there exists wide variation in the strategies towards socially responsible investing. If fund managers believe in the *doing good by doing well* story, then they are more likely to hold more socially responsible firms and promote their investee firms to improve their CSR. If fund managers believe in the *insider-initiated philanthropy* story, then they are less likely to hold socially responsible firms and less likely to support additional investments in the CSR/ESG space. Other factors, such as political preferences and local social factors, can also affect a fund manager's preference towards socially responsible firms. Hong and Kostovetsky (2012) show that fund managers who donate to Democrats are more inclined to hold socially responsible firms in their portfolio and shy away from 'irresponsible' firms. Di Giuli and Kostovetsky

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[10] It is, however, well studied that institutional owners can provide better corporate governance and ultimately improve firm financial performance (Del Guercio and Hawkins, 1999; Hartzell and Starks, 2003; McCahery et al. 2016).

[11] Many studies also explore the link between responsible investing and fund performance, including Bauer et al. (2007), Climent and Soriano (2011), Barnett and Salomon (2012), Hong and Kacperczyk (2009), Borgers et al. (2015) and Ibikunle and Steffen (2017). Morgan et al. (2011) find that mutual funds vote less in favor of social proposals, but it is not the focus of their paper.

[12] Hartzmark and Sussman (2019) provide strong causal link between fund flows and high sustainability rating. They also show mutual funds with low sustainability scores did not face any significant outflows before Morningstar published their sustainability ratings in March 2016. Thus, we do not expect fund flows to be weak for mutual funds with low CSR scores in our sample, which ends in 2013. Nonetheless, this could be a reason that mutual funds would want to improve a firm's CSR.

(2014) show that Democratic-leaning firms, defined by local social factors, spend more on CSR than Republican-leaning firms. The effects of mutual funds on CSR also depend largely on whether mutual funds own a significant stake in the firms they hold. The higher the ownership, the higher their influence in the firm. It is also implied that firms' CSR should decrease after they experience a loss of CSR-friendly mutual fund ownership. Actively managed funds also have a variety of investment objectives with long-, medium- and short-term investment horizons. These variations can lead to different preferences towards CSR. Therefore, we have the following hypothesis:

H2 CSR-friendly (unfriendly) mutual funds have positive (negative) social impact on firms they hold.

While most prior studies have taken CSR as a single construct, several recent studies have examined and found asymmetric effects of CSR strengths and weaknesses on firm risk or value. For example, Kolbel et al. (2017) argue that CSR weakness scores capture corporate social irresponsibility (CSI), and CSI does more to destroy moral capital than CSR does to enhance it. Oikonomou et al. (2012) find that CSR strengths are weakly negatively related to firm risk whereas weaknesses (CSI) are strongly positively related to firm risk. Thus, from the perspective of risk management, when CSR-friendly mutual funds want to increase insurance-like social capital and improve firm value, they should focus on reducing concerns rather than increasing strengths. Chen et al. (2019) find empirical evidence that institutional owners focus on controlling negative corporate externalities rather than increasing positive social activities. However, some other studies argue that it is much easier for the management to take purposeful action to improve positive CSR outcomes than it is to prevent negative outcomes. As noted by Servaes and Tamayo (2013), it seems "unlikely that a firm with a poor environmental record has made a concerted effort to obtain such a record" (p. 1054, emphasis added). Goss and Roberts (2011) also indicate that some CSR concerns are exogenous to the firm, while investments in areas viewed as strengths are mainly discretionary. Based on the literature, we propose two opposing hypotheses:

H3a CSR-friendly mutual funds reduce CSR concerns rather than increasing CSR strengths.

H3b CSR-friendly mutual funds increase CSR strengths rather than reducing CSR concerns.

Channels of Influence

It is important to discover the different channels institutional owners use to exert their influence in the investee firms

(Borochin and Yang 2017). Shareholders can use various methods to voice their opinion, initiate proposals (Gillan and Starks 2000), sell shares ('vote with their feet,Parrino et al. 2003; Gopalan 2008), or choose to engage with firms through meetings, discussions, and phone calls with the firm's executives (Goldstein 2011, 2014; Dimson et al. 2015). In contrast to other mechanisms where participation is voluntary and free rider problems are widespread, shareholder voting is mandatory across all mutual funds. There is growing literature on mutual fund activism examining the role of mutual funds as monitors of managerial action, particularly after SEC mandated disclosure of fund voting decisions on Form N-PX beginning in 2004. For example, Dimmock et al. (2018) discover that mutual funds with significant capital gains will not use the threat of exit but will instead monitor by voice or vote. Davis and Kim (2007) find that voting is affected by the business ties between the fund and the firm. Chou et al. (2011) indicate that better governed mutual funds vote responsibly on corporate governance proposals and provide better return performance. Matvos and Ostrovsky (2010) reveal that heterogeneity and peer effects are important in shaping voting outcomes. Iliev and Lowry (2014) suggest that 'actively' voting mutual funds with higher benefits and lower costs of research are less likely to rely on proxy advisory recommendations. Morgan et al. (2011) find that mutual funds vote in favor of shareholder proposals for firms with weak governance. Chen et al. (2020) find that firms with greater institutional ownership are more likely to have CSR-related shareholder proposals. We focus on how actively managed mutual funds and their heterogeneity in social preferences affect their vote in social proposals. This is an important channel for mutual funds to voice their social orientation and influence CSR initiatives in the firms they hold, and we expect that CSR-friendly mutual funds are more likely to vote in favor of implementing a social proposal than CSR-unfriendly mutual funds.

Another channel through which mutual funds can influence a firm's CSR is executive compensation contracting. Firms worldwide have increasingly begun tying their executives' compensation to CSR-related objectives. This emerging compensation practice has a significantly positive impact on CSR. The literature (e.g., Berrone and Gomez-Mejia 2009; Hong et al. 2016) finds a positive relationship between this executive incentive and a firm's social performance. On the one hand, mutual funds with a preference for social investments may choose to invest in firms with CSR contracts in place. On the other hand, by exerting influence on this compensation practice, mutual funds can effectively change their firms' CSR performance. The latter depends on whether the mutual funds have a significant stake (and therefore have a say in executive compensation) in the firm, and thus, we expect that firms with higher CSR-friendly mutual

fund ownership are more likely to offer CSR-contingent compensation to their executives.

The last channel we test is the mediating effect of a firm's governance. As mentioned earlier, some CSR activities are more 'material' to firm value than others (Khan et al. 2016) and the effect of CSR on firm value varies across industries and different CSR categories. As it can be 'costly' for mutual funds to directly monitor and influence corporate decision-making (Chen et al. 2007), a stronger board can serve this purpose on their behalf and represent their interests and views on CSR more faithfully and effectively. Furthermore, since good governance can mitigate the problem of firms investing into 'value-destroying' CSR or 'immaterial' CSR activities, CSR projects selected by firms with good governance are more likely to be value-enhancing or risk-mitigating (Krueger 2015; Dunbar et al. 2018; Albuquerque et al. 2019). Thus, we expect governance strength to positively mediate the relation between CSR-friendly ownership and a firm's CSR.

Data, Sample Selection, and Variable Construction

Data and Sample Selection

The CSR ratings for firms are obtained from the MSCI ESG KLD STATS database (henceforth KLD). The KLD database includes more than 650 companies from 1991 and more than 3,000 companies comprised of the Russell 3000 index since 2003. Analysts from KLD use publicly available information, company filings, government data, non-governmental organization data and media sources to identify relevant information that helps measure a firm's environmental, social and governance performance. Each firm is evaluated on a set of strengths and concerns in each of the following CSR dimensions: community, diversity, employee relations, environment, human rights, and product safety.[13] If a firm performs a CSR-related deed that is deemed good (bad) by KLD, it gains one point in strengths (concerns). The annual CSR score of a firm is defined as the sum of the total number of strengths minus the total number of concerns across all categories for each year.

The data on mutual funds, retrieved from Morningstar Direct, cover all actively managed US domestic equity mutual funds from 1996 to 2013. Since the holdings of actively managed equity funds more truthfully reflect their

social commitment, we exclude sector, international, balanced, and index funds. For a more reliable dataset, we follow Kacperczyk et al. (2008) to exclude funds which hold less than ten firms in the portfolio and have total net assets of less than $5 million. The mutual fund data are then merged with the KLD data to construct a CSR score at the fund level. KLD covers 8679 unique stocks, whereas the number of unique stocks invested by mutual funds is 25,568. This results in a significant portion of the portfolio not being covered by KLD ratings for some mutual funds. To address this problem, we follow Cremers and Petajisto (2009) and require that a mutual fund's stocks, which have CSR scores, account for at least 67% of the portfolio in value, resulting in that an average of 82.36% of mutual fund holdings have CSR ratings. The data on firm-specific variables such as firm size, return on assets (ROA), leverage, market-to-book ratio (M/B), research and development (R&D) spending, and advertising expenses are obtained from COMPUSTAT. These control variables have been shown to be important determinants of corporate social performance (Hong et al. 2016; Yermack 2009). For example, larger firms have more resources to engage in CSR spending and care more about public relation due to analyst and media coverage, leading to a positive relation between firm size and CSR. The return on assets is also likely correlated with CSR expenditure, as less profitable firms are less likely to engage in CSR (Masulis and Reza 2015). Similarly, CSR may be viewed as a form of advertising and therefore controlling for advertising expenditure is important (Campbell 2007).

To remove the effect of extremely small firms, firms that have a market capitalization of less than $5 million USD are excluded. The final combined sample consists of 3803 unique firms and 2588 unique funds. In addition, all variables are winsorized at the 1% and 99% levels to reduce the effect of outliers.

Mutual fund voting data come from Institutional Shareholder Services (ISS). ISS compiles this data for the largest 250 mutual fund families in its Voting Analytics database from 2004 when the SEC mandated disclosure of fund voting decisions on Form N-PX. The data contain votes on all agenda items on both regularly scheduled annual meetings and special meetings. From all the agenda items, we select only those that are relevant to CSR and that fall within the categories of community, diversity, employee relations, employee relations, environment, human rights, and product safety. The datasets from ISS and Morningstar Direct are cross-referenced as there are no common identifiers.[14]

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[13] KLD also evaluates firms on corporate governance. As the focus of this paper is strictly on the role of mutual funds on CSR, the study follows the literature to exclude the corporate governance measure when calculating the CSR score.

[14] Following Matvos and Ostrovsky (2010), we match the ISS data with the EDGAR data based on fund and family name and then match the voting data to Morningstar through fund tickers.

The final voting sample has 238 firms, 987 funds, and 921 CSR-related shareholder proposals.

We hand collect data on CSR-contingent executive compensation contracts from the proxy statements of the S&P 500 companies from 2009–2013. In these statements, we note whether the CEO is offered any compensation contingent on measures such as "safety," "pollution," "customer satisfaction," and "social responsibility," among others. Specifically, to categorize the compensation contract as CSR-linked, we follow Hong et al. (2016) to use a collection of keywords based on guidance from a sustainability consulting firm.

Variable Construction

Firm CSR

The annual CSR score for a firm is calculated as the total number of strengths minus the total number of concerns across the following dimensions: community, diversity, employee relations, environment, human rights, and product safety. However, over time KLD has added and removed strengths and concerns indicators. To have the CSR score comparable over time, we follow Deng et al. (2013) and divide each strength (concern) score by the total number of strength (concern) indicators in that year. This scaled CSR score is used as *Firm CSR* throughout the paper.[15]

Annual Fund CSR

Following Borgers et al. (2015) and El-Ghoul and Karoui (2017), we construct the firm-level *Annual Fund CSR* score using the value-weighted average of the CSR scores of all the stocks held by the mutual fund, minus the firm of interest, at the end of the year. We exclude the firm of interest from the calculation of annual fund CSR to avoid any mechanical relation between the fund and firm CSR scores.

$$Annual\ Fund\ CSR_{i,k,t} = \left[\sum_{j=1}^{N} z_{j,k,t} \times Firm\ CSR_{j,t} \right] - z_{i,k,t} \times Firm\ CSR_{i,t} \tag{1}$$

where N is the number of firms in the portfolio held by fund 'k' at the end of year 't'; $z_{j,k,t}$ is the weight of firm 'j' in the portfolio of fund 'k' at time 't'.

Fund CSR

Fund CSR is defined as the 3-year average of the annual fund CSR.[16]

$$FundCSR_{i,k,t} = \frac{1}{3} \sum_{t=1}^{t-2} Annual\ Fund\ CSR_{i,k,t} \tag{2}$$

Average Fund CSR

The *Average Fund CSR* of a firm 'i' is a firm-level measure, computed as the ownership-weighted average of the *Fund CSR* scores of all the mutual funds holding the firm 'i'.

$$Average\ Fund\ CSR_{i,t} = \sum_{k=1}^{K_{i,t}} w_{i,k,t} \times Fund\ CSR_{i,k,t} \tag{3}$$

where $w_{i,k,t}$ is the number of shares of firm 'i' held by a fund 'k' divided by the total number of shares held by actively managed mutual funds at time 't'; $K_{i,t}$ is the number of funds holding the firm i at the end of year t.

Friendly Ownership and Unfriendly Ownership

Every year, we sort all the mutual funds based on the Fund CSR score and divide them in terciles. The funds in the top tercile are classified as CSR-friendly and the funds in the bottom tercile are classified as CSR-unfriendly. We then compute CSR *Friendly* and *Unfriendly* mutual fund ownership at the firm-year level as the total ownership of all the CSR-friendly (CSR-unfriendly) funds every firm-year.

Descriptive Statistics

Table 1 Panel A presents the descriptive statistics of all the firm-year observations in the sample. *Firm CSR* has a mean rating of -0.108 with a standard deviation of 0.37. This indicates that the average firm has more concerns than strengths across the six CSR categories. *Average Fund CSR* score is -0.058 with a standard deviation of 0.12. The Average *Friendly ownership* within a firm is 1.745% while that of *Unfriendly ownership* is 5.1%. The mean of mutual fund ownership in a firm is 11.54%. The rest of the variables are firm-level controls. The average value of return on assets (ROA) is 2.00%; Log (Sales) is 6.9; Book Leverage is 0.222; market-to-book (M/B) ratio is 1.51; research and

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[15] In robustness checks, the raw, unscaled CSR score generates qualitatively similar results.

[16] The data show that the *Annual Fund CSR* of some funds vary considerably from one year to the next. To smooth out the noise, we construct *Fund CSR* as the three-year average of the *Annual Fund CSR*. However, all the results remain qualitatively similar if *Annual Fund CSR* is used.

Table 1 Descriptive statistics

Panel A: Firm characteristics

	N	Mean	Median	SD	Min	Max
Firm CSR rating	21,483	− 0.108	− 0.121	0.369	− 2.379	2.800
Average Fund CSR	21,100	− 0.058	− 0.092	0.116	− 0.368	0.554
Friendly ownership	17,346	1.745	0.302	2.798	0.000	13.201
Unfriendly ownership	19,499	5.106	3.170	5.470	0.000	25.412
MF ownership	21,483	11.54	10.448	8.315	0.0622	35.405
ROA	21,483	0.020	0.043	0.143	− 0.715	0.294
Sales(Log)	21,483	6.892	6.875	1.822	0.000	13.055
Book Leverage	21,483	0.222	0.194	0.205	0.000	0.929
M/B	21,483	1.512	1.072	1.419	0.078	7.725
R&D	21,483	0.040	0.000	0.077	0.000	0.449
Advertising	21,483	0.012	0.000	0.032	0.000	0.191

Panel B: Fund characteristics

	N	Mean	Median	SD	Min	Max
Fund CSR	8749	− 0.024	− 0.046	0.145	− 0.413	0.847
TNA	9767	862.0	171.1	2965.6	0.0	63,295.8
Fund Family TNA	9740	35,119.5	6226.2	96,428.5	0.6	784,145.9
Fund Flow (%)	9401	15.919	− 6.184	102.321	− 70.033	906.550
Fund Return (%)	9380	6.651	11.023	20.085	− 47.706	59.288
Fund Age	9728	8.009	5.000	10.184	0.000	80.000
Fund Expense (%)	9590	1.316	1.325	0.469	− 0.510	13.480
Fund Turnover	8803	82.470	65.000	73.314	2.000	672.000

The Panel A sample consists of 3,795 unique firms and 21,483 firm-year observations from 1996 to 2013. Firm-level data are obtained from COMPUSTAT and Center for Research in Security Prices (CRSP). This sample is matched with the MSCI ESG KLD stats database. *Firm CSR* rating of a firm is defined as the scaled [#]number of strengths, [#]number of weaknesses in the six categories: community, diversity, employee relations, environment, human rights, and product. *Fund CSR* is the mutual fund CSR score of a fund. *Average Fund CSR* is the ownership-weighted Fund CSR score of all mutual funds holding the firm. *MF ownership* is the total mutual fund ownership in a firm. *Friendly ownership* is percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the top tercile. *Unfriendly ownership* is percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the bottom tercile. *ROA* is Return on Assets. Size is the logarithm of the Sales. *Book Leverage* is the book value of debt divided by the market value of equity and is capped between 0 and 1. *M/B* is the market value of the firm scaled by total assets. R&D is the Research and Development expenses scaled by total assets. *Advertising* is the Advertising expenses scaled by total assets. A firm is removed from the sample if its market capitalization is less than $5 million. Panel B shows the fund characteristics of 2,588 unique funds. Mutual fund data are obtained from Morningstar Direct. *TNA* is the total net assets of the fund in millions. *Fund Family TNA* is the total net assets of the fund family in millions. *Fund Flow* is the annual flow to the fund. *Fund Return* is the annual gross return of the fund. *Fund Age* is the age of the fund. *Fund Expense* is the annual expense ratio. *Fund Turnover* is the annual fund turnover

development (R&D) expenses are 4% of total assets; advertising expenses are 1.2% of total assets.

Table 1 Panel B presents the descriptive statistics of all the fund-year observations in the sample. *Fund CSR* has a mean rating of -0.024 with a standard deviation of 0.145. The average fund has total net assets (TNA) of $862 million. The average fund family has $35.1 billion TNA. The average value of *Fund Flow* is 15.92%; *Fund Return* is 6.65%; *Fund Age* is 8 years; *Fund Expense* is 1.316% and *Fund Turnover* is 82.47. Please refer to Table 11 in Appendix for all variable definitions.

Results

Main Results

We first examine the impact of total mutual fund ownership on a firm's future CSR and estimate the following panel-data regression model:

$$Firm\ CSR_{i,t+1} = \beta_0 + \beta_1\ MF\ ownership_{i,t} + \gamma X_{i,t} + u_i + v_t + \in_{i,t+1}$$
(4)

where *i* indexes all firms and *t* indexes all years. The dependent variable is the *Firm CSR* in the following year and the variable of interest is *MF Ownership*. *MF Ownership* is the total percentage of shares outstanding of the firm held by

Table 2 Firm CSR and Mutual Fund Ownership

Dependent variable	Firm CSR$_{t+1}$	Firm CSR Strengths$_{t+1}$	Firm CSR Concerns $_{t+1}$
	1	2	3
MF ownership	−0.003***	−0.005***	−0.001**
	(0.000)	(0.000)	(0.014)
ROA	0.063**	−0.013	−0.076***
	(0.028)	(0.511)	(0.001)
Sales (Log)	−0.011	0.019**	0.030***
	(0.308)	(0.038)	(0.001)
Book Leverage	0.012	−0.006	−0.017
	(0.733)	(0.844)	(0.511)
M/B Ratio	−0.005	−0.001	0.004
	(0.233)	(0.739)	(0.221)
R&D	−0.202*	−0.168**	0.034
	(0.057)	(0.037)	(0.626)
Advertising	−0.601	−0.669**	−0.068
	(0.123)	(0.050)	(0.733)
Industry CSR	0.510***	0.251***	−0.259***
	(0.000)	(0.000)	(0.000)
Time dummies	Yes	Yes	Yes
Fixed effects	Firm	Firm	Firm
Adjusted R^2	0.531	0.666	0.631
N	20,846	20,846	20,846

This table reports the results from regression of *Firm CSR* scores on lagged values of *MF ownership* along with firm controls. *MF ownership* is the percentage of shares outstanding held by mutual funds. *Industry CSR* is the annual average CSR of firms in an industry (two-digit SIC code). Firm controls are *ROA, Sales (log), Book leverage, M/B Ratio, R&D, Advertising, Industry CSR*. The variable definitions are available in Table 11 in Appendix. All independent variables are at time '*t*' and winsorized at the 1st and 99th percentile

p-values are in parentheses

Standard errors are clustered at the firm level

*, **, ***Significance at the 10%, 5%, and 1% level, respectively

mutual funds. $X_{i,t}$ includes a set of time-varying firm characteristics such as *ROA, Sales (log), Leverage, M/B ratio, R&D, Advertising* expense, and the annual average CSR of the firm's Industry (*Industry CSR*).[17] $u_i + v_t$ represent firm fixed effects and time dummies, respectively, and the standard errors are clustered at the firm level. As mentioned earlier, existing literature shows that investors with longer investment horizons prefer firms with higher CSR and more effectively influence a firm's CSR policies (Humphrey et al. 2016; Starks et al. 2017; Gibson and Krueger 2018). When compared to other institutional investors, actively managed mutual funds face a higher threat of fund outflows, have higher portfolio turnover, and seem to focus more on short-term financial performance (Brown et al. 1996; Chevalier and Ellison 1997; Cella et al. 2013; Tucker 2018). In our sample, we find that the typical (i.e., median) actively

managed mutual fund holds a stock for 5.10 years compared to 6.78 years for overall institutional ownership. Thus, ex-ante, we expect the coefficient on *MF ownership* (β_1) to be negative.

Table 2 reports the results of Eq. 4 with different specifications. Column 1 shows that *MF ownership* is negatively related to a firm's future CSR after controlling for firm characteristics. A one standard deviation increase in the *MF ownership* of a firm is associated with an approximately 7% standard deviation decrease in the firm's future CSR standing. In particular, when the mutual fund ownership of a firm increases by 8%, firm CSR decreases by 0.025 the following year. This suggests that, on average, mutual funds are not CSR-friendly and view CSR more as an agency problem than value maximizing. Columns 2 and 3 show that this decrease in future CSR comes more through reducing strengths, although they also reduce CSR concerns. Overall, the results support hypothesis 1 by suggesting that actively managed funds with shorter

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[17] We include *Industry CSR* in all our main specifications to control for industry-specific CSR trends over time.

Fig. 1 Mutual fund ownership and Firm CSR scores. This figure shows the average Firm CSR scores one year ahead across terciles of mutual fund ownership. **a–c** Firm CSR scores across friendly, unfriendly, and total mutual fund ownership terciles. *, **, ***Significance at the 10%, 5%, and 1% level, respectively
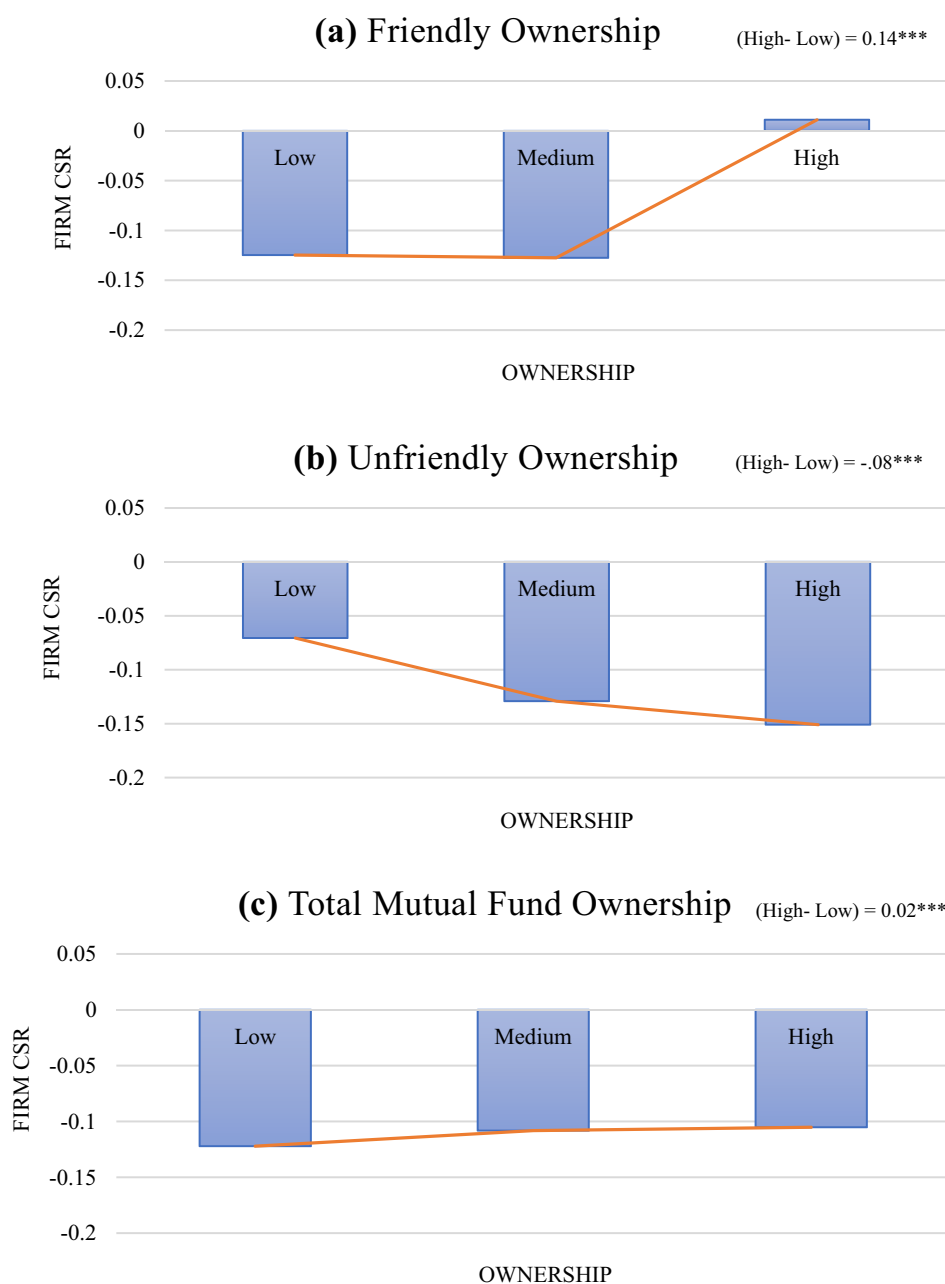
investment horizons are negatively related to a firm's future CSR.

As mentioned earlier in Hypothesis 2, there exists wide variation in fund manager's strategies and preferences towards socially responsible investments. Fund managers who believe in the "*doing good by doing well*" story are more likely to hold socially responsible firms. Other fund managers who believe in the *insider-initiated philanthropy* story are less likely to hold socially responsible firms and are also less likely to support investments in the CSR/ESG area. Figure 1 shows the difference in firm CSR among various ownership terciles of Friendly, Unfriendly, and total mutual fund ownership. Panel (a) reports that the difference in CSR

score is 0.14 between firms with high and low *Friendly ownership*. Panel (b) reports the difference is − 0.08 between firms with high and low *Unfriendly ownership*. Both differences are statistically significant.

We also test the hypothesis using the following regressions:

$$Firm\ CSR_{i,t+1} = \beta_0 + \beta_1 Average\ Fund\ CSR_{i,t} + \gamma X_{i,t} + u_i + v_t + \in_{i,t+1} \tag{5}$$

$$\begin{aligned} Firm\ CSR_{i,t+1} = \beta_0 &+ \beta_1 Friendly\ ownership_{i,t} \\ &+ \beta_2 Unfriendly\ ownership_{i,t} + \\ &+ \gamma X_{i,t} + u_i + v_t + \in_{i,t+1} \end{aligned} \tag{6}$$

Table 3 Fund CSR, Firm CSR, and Mutual fund ownership

Dependent variable	Firm CSR$_{t+1}$		Firm CSR Strengths$_{t+1}$		Firm CSR Concerns$_{t+1}$	
	1	2	3	4	5	6
Average Fund CSR	1.113***		0.851***		−0.263***	
	(0.000)		(0.000)		(0.000)	
Friendly Ownership		0.005***		0.004***		−0.001
		(0.005)		(0.004)		(0.303)
Unfriendly Ownership		−0.006***		−0.009***		−0.003***
		(0.000)		(0.000)		(0.001)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.567	0.599	0.696	0.732	0.640	0.699
N	19,522	12,860	19,522	12,860	19,522	12,860

This table reports the results from the regression of *Firm CSR* scores on lagged values of *Average Fund CSR, Friendly ownership* and *Unfriendly ownership* along with firm controls. *Average Fund CSR* is the ownership-weighted Fund CSR score of all mutual funds holding the firm. *Friendly ownership* is percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the top tercile. *Unfriendly ownership* is percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the bottom tercile. Firm controls are *ROA, Sales (log), Book leverage, M/B Ratio, R&D, Advertising, Industry CSR.* The other variable definitions are available in Table 11 in Appendix. All independent variables are at time '*t*' and winsorized at the 1st and 99th percentile. Standard errors are clustered at the firm level

p-values are in parentheses

*, **, ***Significance at the 10%, 5%, and 1% level, respectively

where *Average Fund CSR* is the variable from Eq. 3 and β_1 is the coefficient of interest in Eq. 5 and β_1 and β_2 are the coefficients of interest in Eq. 6. Column 1 of Table 3 shows the results of the regression. A standard deviation increase in *Average Fund CSR* is associated with a 0.35 standard deviation increase in a firm's future CSR. In particular, if *Average Fund CSR* increases by 0.116, firm CSR increases by 0.129 in the following year. Column 2 shows the results of Eq. 6. *Friendly ownership* and *Unfriendly ownership* are positively and negatively associated with a firm's future CSR, respectively. A one percent increase in the shares outstanding held by Friendly (Unfriendly) mutual funds is associated with an increase (decrease) in future firm CSR score of 0.005 (0.006). These results show that CSR-friendly mutual funds not only select firms with high CSR, but also actively improve them when they have higher ownership and strongly support hypotheses 2. The results complement those of Dyck et al. (2018) and Chen et al. (2019) who find that institutional ownership is positively associated with a firm's environmental and social performance. Our results add to this story that actively managed mutual funds also play an important role in firm's environmental and social performance, and that it mostly depends on the social preferences of the fund manager.[18]

We next compare the effect of *Average Fund CSR, Friendly* and *Unfriendly ownership* on Firm CSR Strengths and Concerns separately. Several studies argue that when mutual funds want to increase insurance-like social capital and improve firm value, they focus more on reducing concerns than increasing strengths (Oikonomou et al. 2012; Chen et al. 2019). Others argue that it is much easier to improve positive CSR outcomes than it is to prevent negative outcomes and view some CSR concerns as exogenous to the firm (e.g., Servaes and Tamayo 2013; Goss and Roberts 2011). Columns 3 through 6 in Table 3 report the results of the regressions on Firm CSR strengths and concerns. *Average Fund CSR* is positively associated with CSR strengths and negatively associated with CSR concerns. Both *Friendly* and *Unfriendly ownership* have a stronger effect, in terms of statistical and economical significance, on firm CSR strengths rather than CSR concerns. Both the civic engagement and cooperation norms perspectives of social capital imply that CSR strengths rather than concerns engender trust and social capital among stakeholders (e.g., Guiso et al. 2004; Scrivens and Smith, 2013). Moreover, it is much easier for the management to take purposeful action to improve

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[18] To control for the overall effect of institutional holders, we include institutional ownership (excluding all mutual fund ownership) in our

Footnote 18 (continued)

main regressions. The results remain robust as shown in Appendix Table 2.

Table 4 Fund CSR and Firm CSR—Evidence from CSR Categories

Panel A: CSR categories

Dependent variable	Environment$_{t+1}$	Diversity$_{t+1}$	Community$_{t+1}$	Employee$_{t+1}$	Product$_{t+1}$
	1	2	3	4	5
Friendly ownership	0.002***	0.004***	0.002**	0.001	0.002***
	(0.000)	(0.000)	(0.028)	(0.252)	(0.003)
Unfriendly ownership	−0.002***	−0.004***	−0.001	−0.003***	−0.002***
	(0.000)	(0.000)	(0.121)	(0.000)	(0.000)
Firm controls	Yes	Yes	Yes	Yes	Yes
Fixed effects	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm
Adjusted R^2	0.518	0.675	0.325	0.418	0.483
N	13,224	13,224	13,224	13,224	13,224

Panel B: CSR strengths and concerns

Dependent variable	Env Str$_{t+1}$	Env Con$_{t+1}$	Div Str$_{t+1}$	Div Con$_{t+1}$	Com Str$_{t+1}$	Com Con$_{t+1}$	Emp Str$_{t+1}$	Emp Con$_{t+1}$	Pro Str$_{t+1}$	Pro Con$_{t+1}$
	1	2	3	4	5	6	7	8	9	10
Friendly ownership	0.001***	−0.001***	0.003***	−0.001	0.002***	−0.000	0.001**	0.000	0.000	−0.002***
	(0.000)	(0.000)	(0.000)	(0.273)	(0.000)	(0.870)	(0.044)	(0.737)	(0.451)	(0.000)
Unfriendly ownership	−0.002***	0.000	−0.002***	0.002***	−0.002***	−0.001*	−0.002***	0.000	−0.001***	0.001***
	(0.000)	(0.142)	(0.000)	(0.000)	(0.000)	(0.068)	(0.000)	(0.634)	(0.000)	(0.000)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm	Year, Firm
Adjusted R^2	0.531	0.758	0.710	0.575	0.480	0.486	0.436	0.452	0.318	0.646
N	12,860	12,860	12,860	12,860	12,860	12,860	12,860	12,860	12,860	12,860

This table reports the results from the regression of *Firm CSR category* scores on lagged values of *Friendly ownership and Unfriendly ownership*. Panel A reports the results of the regressions where the dependent variable is the aggregate scores in the respective category. Panel B reports the results of the regressions on the strengths and concerns of the individual categories. *Friendly ownership* is percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the top tercile. *Unfriendly ownership* is percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the bottom tercile. The other variable definitions are available in Table 11 in Appendix. All independent variables are at time '*t*' and winsorized at the 1st and 99th percentile

p-values are in parentheses

Standard errors are clustered at the firm level

*, **, and ***Significance at the 10%, 5%, and 1% level, respectively

positive CSR outcomes than to prevent negative outcomes. As noted by Servaes and Tamayo (2013) it seems "unlikely that a firm with a poor environmental record has made a concerted effort to obtain such a record" (p. 1054, emphasis added). Among the other variables, *ROA* is positively associated with the firm's future CSR while *M/B* is negatively related to a firm's CSR. Most of the other control variables are insignificant.

CSR Categories

Mutual funds may not treat every CSR issue equally and can possibly influence certain categories more than others. We test this by replacing the dependent variable in Eq. 6 with the respective individual category scores. The results of the regression are presented in Table 4. In Panel A, we report the coefficients of *Friendly* and *Unfriendly ownership* across various CSR categories. *Friendly ownership* is positively related to most categories and *Unfriendly ownership* is negatively related to most categories. However,

in Panel B, the dependent variable is the firm score in the strengths and concerns of each CSR category. *Friendly ownership* increases the strengths in all categories except product safety and reduces concerns in the environment and product safety categories. *Unfriendly ownership* on the other hand reduces the strengths in all categories but does not increase concerns in any of the categories. While we are unable to conclude that mutual funds care about certain categories more than others, the results suggest that actively managed mutual funds, whether CSR-friendly or not, can influence CSR strengths more than concerns across all categories. Along with the results from the earlier tables, we find stronger support for hypothesis 3a than hypothesis 3b.

Evidence from Liquidating Mutual Funds

Endogeneity may be a concern even though the study controls for a variety of firm characteristics, firm fixed effects, and sometimes fund characteristics.[19] We address this issue by studying changes in ownership caused by mutual fund liquidations which are plausibly exogenous. Zhao (2005) finds that funds liquidated by families have poor performance and tend to be smaller in size, with negative fund inflows, shorter histories, fewer share classes and higher expense ratios. The fund family mainly liquidates funds to save on operational costs. The fund liquidates *all* its holding firms irrespective of whether the firm has a high or low CSR rating. When a CSR-friendly or unfriendly fund liquidates, the shares it owns will be sold in the market and it will be purchased by many other investors who can be CSR-friendly, CSR-unfriendly or apathetic towards CSR. If the new set of investors represent the average investor in the market, this would push the average fund CSR of the firm towards the mean. Therefore, if CSR-friendly (unfriendly) mutual funds influence the future CSR of a firm, we expect that firms losing CSR-friendly (unfriendly) mutual fund ownership due to liquidation will subsequently have lower (higher) CSR ratings.

For our tests, we restrict our sample to studying only those firms held by mutual funds which were liquidated. We identify 513 funds that were liquidated and estimate the following firm-panel regression model:

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[19] We use firm fixed effects to control for unobservable time-invariant firm characteristics and to study within-firm variations of CSR scores. We also try industry fixed effects, in Appendix Table 3, which allow us to examine the cross-sectional variations and remove potential measurement errors. The results suggest that mutual fund CSR can explain the cross-sectional variations in firm CSR.

$$
\begin{aligned}
Firm\ CSR_{i,t+1} = {} & \beta_0 + \beta_1 Average\ Fund\ CSR_{i,t} \\
& + \beta_2 Liquidation\ Value_{i,t} \\
& + \beta_3 Average\ Fund\ CSR_{i,t} \\
& \times Liquidation\ value_{i,t} + \gamma X_{it} + \psi + \in_{i,t+1}
\end{aligned}
\tag{7}
$$

where *Average Fund CSR* is the ownership-weighted *Fund CSR* score of the liquidated mutual funds holding the firm *i* at time *t*; *Liquidation Value* is the dollar value of the firm which was sold from all the liquidating mutual funds in that year; X_{it} is a set of firm controls from Eq. 5; Ψ are year and firm fixed effects. The variable of interest is the interaction term *Average Fund CSR X Liquidation Value* which captures the effect of CSR-friendly ownership lost due to mutual fund liquidation. Ex-ante, we expect the coefficient of the interaction term to be negative as we expect firms with greater loss in CSR-friendly ownership to face lower pressure to improve CSR. Table 5 reports the regression results. In Panel A, we study mutual fund ownership lost in the respective firm (due to fund liquidation) in dollar value, while in Panel B we study mutual fund ownership lost as a percentage of total market capitalization of the firm. We interact liquidated ownership lost with the *Average Liquidated Fund CSR* in order to capture the CSR-friendly ownership lost. In column 1 of both Panels A and B, the interaction term is negative and significant, which are consistent with our hypothesis that as firms lose more CSR-friendly ownership, their future CSR standings decrease. Columns 2 and 3 in both Panels A and B of Table 5 show that the negative effect on future CSR ratings primarily results from reduced CSR strengths rather than increased CSR concerns. In Panel C, instead of the interaction term, we specifically examine what happens to firm CSR when friendly and unfriendly ownership are liquidated. Importantly, we control for overall friendly and unfriendly ownership to account for contemporaneous but liquidation-independent changes in CSR-friendly and unfriendly ownership in the respective firms. In this particular setting of liquidation we do not find significant results when friendly funds are liquidated, but when unfriendly funds are liquidated it leads to a significant increase in firm's CSR strengths but no change in CSR concerns. These findings are consistent with studies that argue that CSR concerns are unlikely to result from purposeful actions of firms and are exogenous (Servaes and Tamayo 2013; Barrios et al. 2014) while investments in CSR strengths are mainly discretionary (Goss and Roberts 2011).

Voting on CSR Proposals

As voting in shareholder proposals is an important channel for mutual funds to voice their social preferences and potentially influence CSR initiatives, we test whether CSR-friendly mutual funds are more likely to vote in favor of

Table 5 Fund CSR and firm CSR—evidence from liquidated mutual funds

Panel A: Liquidated value ($)

Dependent variable	Firm CSR $_{t+1}$	Firm CSR Strengths $_{t+1}$	Firm CSR Concerns $_{t+1}$
	1	2	3
Average Liquidated Fund CSR	0.539***	0.350***	−0.189***
	(0.000)	(0.000)	(0.000)
Liquidated value ($)	0.001**	0.001***	0.000
	(0.024)	(0.001)	(0.238)
*Average Liquidated Fund CSR * Liquidated value*	−0.009***	−0.010***	−0.002
	(0.000)	(0.000)	(0.163)
Firm controls	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Fixed effects	Firm	Firm	Firm
Adjusted R^2	0.556	0.709	0.652
N	10,962	10,962	10,962

Panel B: Liquidated ownership (%)

Dependent variable	Firm CSR$_{t+1}$	Firm CSR Strengths$_{t+1}$	Firm CSR Concerns$_{t+1}$
	1	2	3
Average Liquidated Fund CSR	0.491***	0.292***	−0.199***
	(0.000)	(0.000)	(0.000)
Liquidated ownership	−0.189	−0.124	0.065
	(0.878)	(0.870)	(0.941)
*Average Liquidated Fund CSR * Liquidated ownership*	−16.894*	−18.720***	−1.825
	(0.091)	(0.003)	(0.801)
Firm controls	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Fixed effects	Firm	Firm	Firm
Adjusted R^2	0.556	0.709	0.652
N	10,962	10,962	10,962

Panel C: Friendly and unfriendly liquidated ownership (%)

Dependent variable	Firm CSR$_{t+1}$	Firm CSR strengths$_{t+1}$	Firm CSR concerns$_{t+1}$	Firm CSR$_{t+1}$	Firm CSR strengths$_{t+1}$	Firm CSR concerns$_{t+1}$
	1	2	3	4	5	6
Friendly Liquidated Ownership	2.094	2.047	−0.047			
	(0.432)	(0.229)	(0.979)			
Unfriendly Liquidated Ownership				3.245	3.844***	0.599
				(0.140)	(0.003)	(0.719)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.598	0.703	0.691	0.546	0.709	0.654
N	4,217	4,217	4,217	6,027	6,027	6,027

Panel A of this table reports the results from the regression of *Firm CSR* scores on lagged values of *Average Liquidated Fund CSR, Liquidated value* and the interaction term between them along with firm controls. Panel B of this table reports the results from the regression of *Firm CSR* scores on lagged values of *Average Liquidated Fund CSR, Liquidated ownership* and the interaction term between them along with firm controls. Panel C of this table reports the results from the regression of Firm CSR on lagged values of *Friendly* and *Unfriendly Liquidated Ownership*. *Average Liquidated Fund CSR* is the ownership-weighted Fund CSR score of all liquidated mutual funds holding the firm. *Liquidated value* is the total dollar value holdings of all the liquidated mutual funds holding a firm. *Liquidated ownership* is the percentage of shares outstanding held by liquidating mutual funds. *Friendly Liquidated Ownership* is the percentage of shares outstanding held by liquidating friendly ownership. *Unfriendly Liquidated Ownership* is the percentage of shares outstanding held by liquidating unfriendly ownership. The other variable definitions are available in Table 11 in Appendix. All independent variables are at time *t* and winsorized at the 1st and 99th percentile

p-values are in parentheses

Standard errors are clustered at the firm level

implementing a social proposal than CSR-unfriendly funds. Even though most CSR proposals do not pass, the votes present shareholders' views on CSR and put pressure on the management (Loss and Seligman, 2004). In the annual and special meetings, all shareholders, including mutual fund shareholders, vote 'For,' 'Against,' 'Abstain,' or 'Withhold.' Following Iliev and Lowry (2014), we define a dummy variable, which takes a value of '1' if a fund votes 'For' the shareholder proposal and a value of '0' if it votes 'Against,' 'Abstain' or 'Withhold.' In our sample, 11.15% of the observations are votes in favor of CSR proposal, 18.31% are votes against CSR, and 69.94% are votes which abstain.

Table 6 reports the marginal coefficients of a logistic regression where the dependent variable is the voting dummy variable mentioned above. The standard errors are clustered at the fund level. The variables of interest are *Fund CSR* and *Ownership dummy*. In addition to the firm controls in Eq. 4, we also control for a variety of fund characteristics such as *Fund Flow, Fund Return, Fund TNA, Fund Age, Fund Family TNA Fund Expense* ratio, and *Fund Turnover*. Column 1 also controls for the overall proportion of votes that vote in favor of implementing the proposal ('*For' Proportion*). Thus, we study the likelihood of voting "For" by a mutual fund while controlling for votes from all other shareholders on the same proposal. It is likely that only the mutual funds that aggressively campaign for CSR will vote "For" while all other shareholders abstain or vote against. Alternatively, mutual funds that vote "For" may not be particularly CSR-friendly if everyone else votes "For" for the same proposal. Column 2 controls for the recommendation by Institutional Shareholder Services (ISS). *ISS* is a dummy variable which takes a value of '1' if ISS recommends voting in favor of the proposal and '0' otherwise. ISS makes influential recommendations on proxy voting that mutual funds often passively follow and vote in line with their recommendation (Morgan, et al. 2011; Iliev and Lowry 2014); therefore, only those votes different from the ISS recommendations express strong opinions. In both specifications, the *Fund CSR* variable is positively and significantly related to voting in favor of the CSR proposal. The probability of voting in favor of implementing the CSR proposal rises from 4.88% to 6.46%, an increase of 33%, when the *Fund CSR* moves from the 25th percentile (-0.126) to the 75th percentile (0.059). On average, a mutual fund is less likely to vote 'for' if the fund has a substantial ownership stake in the firm (> 1%).

Likelihood of Firms Offering CSR-Linked Compensation

Firms across the world have increasingly begun tying their executives' compensation to CSR-related outcomes. The literature (e.g., Berrone and Gomez-Mejia, 2009; Hong et al. 2016) finds that this emerging compensation practice effectively improves a firm's social performance. We postulate that firms owned by CSR-friendly funds are more likely to offer CSR-contingent compensation to their executives. On the one hand, CSR-friendly mutual funds may choose to invest in firms with CSR contracts in place. On the other hand, by exerting influence on this compensation practice, mutual funds can effectively change their firms' social performance. The latter depends on whether the mutual funds have a significant stake (and therefore have a say on executive compensation) in the firm.

We differentiate firms that grant a CSR-contingent compensation contract from those that do not. *CSR Contract Dummy* takes a value of 1 if the firm's proxy statement indicates that the CEO's pay is tied to achievement of CSR-related outcomes and is 0 otherwise. Table 7 presents the results of a pooled-logistic regression of *CSR Contract Dummy* on *Average Fund CSR*. The first column presents the whole sample and the remaining columns present the sub-sample analysis. The variable of interest *Average Fund CSR* is positive and statistically significant at the 5 percent level for the full sample, suggesting that CSR-friendly mutual funds are more likely to have their firms' executive compensation linked to CSR performance. The overall level of mutual fund ownership is negatively associated with the likelihood of firms offering CSR-linked compensation.

Columns 2 and 3 present the results of the logistic regressions for two subsamples where total mutual fund ownership is greater and lesser than the median, respectively. The economic and statistical significance of *Average Fund CSR* is much greater with higher mutual fund ownership than with lower mutual fund ownership. The higher the ownership stake is in a firm by CSR-friendly mutual funds, the more likely it is that the firm will use CSR-linked compensation. Overall, the results suggest that firms are more likely to have their CEOs' compensation linked to CSR when they are owned by CSR-friendly mutual funds and when the mutual funds have a significant stake in the firm.

Board Governance

As it can be 'costly' for mutual funds to directly monitor and influence corporate decision-making (Chen et al. 2007),

Table 6 Fund CSR and Firm CSR—Evidence from Voting in CSR Proposals

Dependent variable	"For" vote dummy	
	1	2
Fund CSR	0.087*	0.066*
	(0.067)	(0.069)
Ownership dummy (% > 1)	− 0.217*	− 0.016*
	(0.052)	(0.049)
'For' proportion	0.572***	
	(0.000)	
ISS		0.104***
		(0.000)
Portfolio weight	− 0.458	− 0.213
	(0.157)	(0.222)
ROA	− 0.213***	− 0.101***
	(0.000)	(0.008)
Sales(Log)	0.009	− 0.003*
	(0.699)	(0.012)
Book Leverage	0.002	− 0.015
	(0.882)	(0.058)
M/B Ratio	0.017***	0.010***
	(0.000)	(0.001)
R&D	− 0.246***	− 0.175***
	(0.001)	(0.000)
Advertising	− 0.155*	− 0.034
	(0.088)	(0.586)
Fund Flow	− 0.000	0.000
	(0.792)	(0.909)
Fund Return	0.000	0.000
	(0.476)	(0.322)
Log (Fund TNA)	0.004	0.003
	(0.368)	(0.451)
Fund Age	− 0.001**	− 0.001**
	(0.037)	(0.048)
Log (Fund Family TNA)	− 0.020***	− 0.016***
	(0.000)	(0.000)
Fund Expense	− 0.024*	− 0.021*
	(0.095)	(0.066)
Fund Turnover	0.000	0.000
	(0.837)	(0.971)
Time dummies	Yes	Yes
Pseudo-R^2	0.284	0.334
Number of observations	15,490	15,490

This table reports the marginal coefficients from estimating different specifications of a logistic regression with 'For' Vote Dummy as the dependent variable which takes a value of '1' if the mutual fund votes in favor of implementing the CSR proposal (Voting 'For' the proposal) and takes a value of '0' if the mutual fund abstains or votes against the proposal. The main variable of interest is Fund CSR. 'For' proportion is the total proportion of votes that are in favor of implementing the proposal. ISS is a dummy variable that takes a value of '1' if Institutional Shareholder Services recommend voting in favor of the CSR proposal and '0' otherwise. All other variable definitions are in Table 11 in Appendix. All independent variables are at time 't' and winsorized at the 1st and 99th percentile

p-values are in parentheses

Table 6 (continued)

Standard errors are clustered at the fund level

*, **, and ***Significance at the 10%, 5%, and 1% level, respectively

Table 7 Likelihood of Firms Offering CSR-Linked Compensation

Dependent variable	CSR Contract Dummy$_{t+1}$		
	1	2	3
	Full Sample	MF ownership > median	MF ownership < median
Average Fund CSR	0.463*	0.650**	0.190
	(0.058)	(0.016)	(0.639)
MF ownership	− 1.158***		
	(0.006)		
Firm CSR	− 0.053*	− 0.038	− 0.061
	(0.076)	(0.296)	(0.171)
ROA	0.062	− 0.022	0.730
	(0.840)	(0.937)	(0.217)
Sales(Log)	0.009	− 0.023	0.043
	(0.719)	(0.471)	(0.197)
Book Leverage	− 0.066	− 0.203	0.128
	(0.670)	(0.350)	(0.538)
M/B Ratio	− 0.090***	− 0.083***	− 0.136**
	(0.008)	(0.010)	(0.024)
R&D	1.043*	0.588	1.122
	(0.059)	(0.320)	(0.358)
Advertising	− 1.499	− 1.097	− 2.311
	(0.194)	(0.444)	(0.174)
Pseudo-R^2	0.077	0.055	0.068
N	1298	649	649

This table reports the marginal coefficients from estimating different specifications of logistic regressions with CSR Contract Dummy$_{t+1}$ as the dependent variable. The logistic CSR Contract dummy takes a value of 1 if the firm offers CSR contracts to its executives in a fiscal year, 0 otherwise. The main variable of interest is Average Fund CSR that is the ownership-weighted Fund CSR score of all mutual funds holding the firm. The firm control variables are the same as in Table 3. All independent variables are at time t and winsorized at the 1st and 99th percentile

p-values are in parentheses

*, **, and ***Significance at the 10%, 5%, and 1% level, respectively.

a stronger board can serve this purpose on their behalf and represent their interests and views on CSR more faithfully and effectively. Furthermore, since good governance can mitigate the problem of firms investing in 'value-destroying' CSR or 'immaterial' CSR activities, CSR projects selected by firms with good governance are more likely to be value-enhancing or risk-mitigating (Krueger 2015; Dunbar et al. 2018; Albuquerque et al. 2019). Thus, we expect governance strength to positively mediate the relation between CSR-friendly ownership and a firm's CSR.

Table 8 Fund CSR and Firm CSR—Board Governance

Dependent variable	Firm CSR$_{t+1}$			
	1	2	3	4
Average Fund CSR	0.241	0.694***	1.158***	1.165***
	(0.334)	(0.001)	(0.000)	(0.000)
MF ownership	−0.126	−0.129	−0.058	−0.067
	(0.167)	(0.160)	(0.563)	(0.502)
Board Independence	−0.071		−0.051	
	(0.209)		(0.372)	
Average Fund CSR*Board Independence	1.345***			
	(0.000)			
Average Fund CSR*MF Own *Board Independence			1.793**	
			(0.036)	
Board Diversity		0.004**		0.004**
		(0.015)		(0.014)
Average Fund CSR*Board Diversity		0.027***		
		(0.003)		
Average Fund CSR*MF Own *Board Diversity				0.060**
Firm Controls	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Fixed effects	Firm	Firm	Firm	Firm
Adjusted R^2	0.585	0.584	0.583	0.583
N	11,786	11,792	11,786	11,792

This table reports the results from the regression of Firm CSR scores on lagged values of *Average Fund CSR, MF ownership,* and the interaction term between them along with firm controls. *Average Fund CSR* is the ownership-weighted Fund CSR score of all liquidating mutual funds holding the firm. *MF ownership* is the percentage of shares outstanding held by mutual funds. *Board Independence* is the percentage of independent directors in the board. *Board Diversity* is the index of gender, age, tenure, ethnicity, financial expertise, and breadth of board experience. Variable definitions are available in Table 11 in Appendix. All independent variables are at time '*t*' and winsorized at the 1st and 99th percentile

p-values are in parentheses

Standard errors are clustered at the firm level

*, **, and ***Significance at the 10%, 5%, and 1% level, respectively

To test the above hypotheses, we use two variables to proxy for board governance: *Board Independence* and *Board Diversity*. *Board Independence* is the percentage of independent directors on the board of the firm. The literature shows that outside directors are more effective monitors due to their independence from the management and therefore constitute better corporate governance (e.g., Fama and Jensen 1983). *Board Diversity* is a multidimensional index of diversity in gender, age, tenure, ethnicity, financial expertise, and breadth of board experience, which includes both demographic and cognitive aspects as suggested by the literature (e.g., Milliken and Martins 1996). A diversified board likely reflects more stakeholder representation on boards and therefore more CSR-friendly (Galbreath 2016; Rao and Tilt 2016) as well as better board governance due to quality information and stronger scrutiny from the different perspectives of the board members (Carter et al. 2003; Bernile et al. 2018). We obtain board information from ISS database and add these board variables to the base-line

regression specification as well as their interactions with *Average Fund CSR* and *MF Ownership*. According to our hypothesis, CSR-friendly funds will have a greater impact on a firm's CSR in well-governed firms and in firms where they own a significant stake (so that the boards represent their interests). This is captured by two interaction terms: *Average Fund CSR X Governance proxy* and *Average Fund CSR X MF Own X Governance proxy*. The results are presented in Table 8. Columns 1 and 3 show that the interactions of *Board Independence* and *Board Diversity* with *Average Fund CSR* are both positive and significant. In columns 2 and 4, we add *MF Own* to the interaction term and the coefficients are still positive and significant. The results show that CSR-friendly mutual funds have stronger positive effects on firms with better board governance, while CSR-unfriendly mutual funds have stronger negative effects. This suggests that not all mutual funds view CSR favorably, but no matter what view they hold, better boards represent shareholder interests and views more faithfully and effectively.

Table 9 Alternative measure of a mutual fund's social preference

Panel A: Industry fixed effects

Dependent variable	Firm CSR$_{t+1}$	Firm CSR Strengths$_{t+1}$	Firm CSR Concerns$_{t+1}$
	1	2	3
Democratic contributions	− 0.005**	− 0.001	0.004**
	(0.025)	(0.530)	(0.012)
MF ownership	0.090	− 0.490***	− 0.617***
	(0.642)	(0.002)	(0.000)
*Democratic contributions * MF ownership*	0.133***	0.096**	-0.058
	(0.007)	(0.014)	(0.133)
Firm controls	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Fixed effects	Industry	Industry	Industry
Adjusted R^2	0.169	0.390	0.405
N	5778	5778	5339

Panel B: Firm fixed effects

Dependent variable	Firm CSR $_{t+1}$	Firm CSR Strengths $_{t+1}$	Firm CSR Concerns $_{t+1}$
	1	2	3
Democratic contributions	− 0.003*	− 0.002	0.002
	(0.086)	(0.175)	(0.240)
MF ownership	− 0.125	− 0.264*	− 0.289
	(0.511)	(0.057)	(0.104)
*Democratic contributions * MF ownership*	0.073*	0.026	-0.065*
	(0.095)	(0.401)	(0.099)
Firm controls	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes
Fixed effects	Firm	Firm	Firm
Adjusted R^2	0.725	0.826	0.825
N	5778	5778	5339

This table reports the results from the regression of *Firm CSR* scores on lagged values of *Democratic contributions, MF ownership* and the interaction term between them along with firm controls. *Democratic contributions* is the natural logarithm of net Democratic contributions by fund managers which is then weighted by ownership at the firm level *MF ownership* is the percentage of shares outstanding held by mutual funds. The other variable definitions are available in Table 11 in Appendix. All independent variables are at time '*t*' and winsorized at the 1st and 99th percentile

p-values are in parentheses

Standard errors are clustered at the firm level

*, **, and ***Significance at the 10%, 5%, and 1% level, respectively

Alternative Measures of Fund CSR

We perform two robustness checks to our main results. First, we create an alternative measure of a mutual fund's preference. Hong and Kostovetsky (2012) show that fund managers who donate to Democrats are more inclined to hold socially responsible firms in their portfolio and shy away from 'irresponsible' firms. Following them, we use the natural logarithm of net Democratic contributions (Democratic minus Republican) by a fund manager as an alternative proxy for Fund CSR and create an average firm-level measure of *Democratic contributions* of all mutual funds holding the firm.[20] We interact this variable with *MF ownership* as in Eq. 5 and Table 9 reports the results of this regression. The data on political contributions end in 2006 and hence we have a smaller sample. Panel A of Table 9 shows a pooled OLS regression with industry fixed effects and Panel B shows the regression with firm fixed effects. The results remain robust and suggest that higher ownership by

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[20] We thank Harrison Hong for sharing the data on his website.

Table 10 Fund CSR and Firm CSR – Long-Term Effects

Dependent variable	Firm CSR$_{t+2}$		Firm CSR$_{t+3}$		ΔFirm CSR$_{t, t+3}$	
	1	2	3	4	5	6
*Average Fund CSR * MF ownership*	0.031***		0.041***		0.016**	
	(0.000)		(0.000)		(0.039)	
*Friendly ownership * Average Fund Duration*		0.003***		0.004***		0.003***
		(0.001)		(0.000)		(0.007)
*Unfriendly ownership * Average Fund Duration*		−0.002***		−0.002***		−0.001**
		(0.000)		(0.000)		(0.019)
Average Fund CSR	0.815***		0.429***		0.134***	
	(0.000)		(0.000)		(0.192)	
MF ownership	−0.000		−0.002**		−0.004***	
	(0.658)		(0.030)		(0.001)	
Friendly ownership		−0.017**		−0.022***		−0.025***
		(0.022)		(0.006)		(0.008)
Unfriendly ownership		0.011***		0.010***		0.009**
		(0.001)		(0.005)		(0.047)
Average Fund Duration		−0.008**		−0.015***		−0.015***
		(0.035)		(0.001)		(0.002)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Firm	Firm	Firm	Firm	Firm	Firm
Adjusted R^2	0.555	0.559	0.547	0.553	0.148	0.183
N	16,375	11,468	13,686	9,721	16,686	9,721

This table reports the results from the regression of *Firm CSR* scores on lagged values of *Average Fund CSR, MF ownership* and the interaction term between them along with firm controls. *Average Fund CSR* is the ownership-weighted Fund CSR score of all mutual funds holding the firm. *MF ownership* is the percentage of shares outstanding held by mutual funds. Columns 1 and 2 have dependent variable as the Firm CSR two years ahead (t+2) and columns 3 and 4 have the Firm CSR score three years ahead ($t+3$) as the dependent variable. Columns 5 and 6 have the change in Firm CSR score from t to $t+3$ as the dependent variable. The other variable definitions are available in Table 11 in Appendix. All independent variables are at time 't' and winsorized at the 1st and 99th percentile

p-values are in parentheses

Standard errors are clustered at the firm level

*, **, and ***Significance at the 10%, 5%, and 1% level, respectively

Democratic-leaning funds is positively related to a firm's future CSR.

Lastly, there exists differences in CSR ratings across different rating agencies. These divergences are due to different categories, weights assigned to each category as well as measurement errors (Berg et al. 2019). To address this concern, we follow the related literature in this field (Dyck et al. 2019; Liang and Renneboog 2017) to conduct robustness tests with alternative CSR data from another ratings provider. Thomson Reuters collects information on ten different categories: three in the environment, three in governance, and four in the social category. They score companies based on their percentile in the categories and weigh them equally to calculate the overall score. We find similar results based on the new data, as shown in Appendix Table 1 in the online appendix.

Long-Term Effects

It is reasonable to assume that the effect of mutual fund on CSR is not immediate; initiation, execution, and evaluation of any CSR policy take time (Cramer et al. 2004; Bird et al. 2007). Gloßner (2019) argues that institutional investors with longer investment durations tend to have a greater positive impact on firms' future CSR. In fact, both the channels we study (i.e., voting and compensation incentives) may take time to be effective. Therefore, we study the long-term effects of mutual fund on firm CSR performance. We make two changes to our base case regression in Eqs. (5) and (6). First, in both the equations, we use Firm CSR at $t+2$ and $t+3$ and the change in CSR from t to $t+3$ as our dependent variables. Columns 1, 3, and 5 of Table 10 report

regression specification based on Eq. (5) with interaction between *Average Fund CSR* and firm-level *MF Ownership*. The interaction coefficients are positive and statistically significant across all specifications.

Second, we follow Gloßner (2019) to create a measure of investment horizon named *Fund Duration* which is the average length of time a fund holds a stock. We use this measure to create a new variable at the firm level named *Average Fund Duration*, which is the ownership-weighted duration of all mutual funds holding the firm. We find that CSR-friendly funds have a longer fund duration (6.84 years on average) when compared to CSR-unfriendly funds (5.69 years); however, the correlation is quite low (0.14). We interact *Average Fund Duration* with firm-level *Friendly* and *Unfriendly ownership* variables in Eq. (6). Columns 2, 4, and 6 of Table 10 report regression specifications based on Eq. (6) with interaction between *Average Fund Duration* and firm-level *Friendly* and *Unfriendly ownership*. The interaction coefficients are positive and statistically significant across all specifications. *Friendly ownership* with longer *Average Fund Duration* is positively and significantly associated with a firm's future CSR and *Unfriendly ownership* with longer *Average Fund Duration* is negatively and significantly related to a firm's future CSR. Taken together, these results confirm that mutual funds have a stronger long-term effect on firm CSR, especially when they have long-term ownership in the firms.[21]

Conclusion

Socially responsible investing is rapidly gaining popularity among investors and researchers. This paper sheds light on the extent to which actively managed mutual funds influence the CSR of firms they hold. Actively managed mutual funds have a variety of investment objectives with different investment horizons as well as different opinions on CSR. The study considers the heterogeneity among mutual funds to comprehensively evaluate their impact on a firm's CSR. We hypothesize that if mutual funds believe in CSR as a valuable activity, then those CSR-friendly mutual funds will support firms to increase CSR. Viewing CSR as an agency cost or inefficient use of resources, CSR-unfriendly mutual funds should require firms to decrease CSR. We find that on average, mutual funds have a negative impact on their firms' CSR standing. However, CSR-friendly funds have a positive influence on their holding firms' CSR. This positive effect results more from improvement in CSR strengths than reductions in CSR concerns.

We further study specific channels through which mutual funds could affect their holding firms' social performance. First, our analysis demonstrates that CSR-friendly mutual funds are more likely to vote in favor of implementing CSR proposals. Second, it indicates that firms owned by socially responsible funds are more likely to have their CEO's compensation linked to corporate social performance. Third, we find that board governance positively mediates the impact of mutual funds on firm CSR. Last, our findings are more pronounced when mutual funds hold a significant stake in the firm.

In sum, the results support that holdings-based measures such as *Fund CSR* have explanatory power over a firm's future social performance. This objective measure is plausibly better than the self-declared "socially responsible mutual funds." From an ethical perspective, these results also highlight the importance of CSR awareness among actively managed mutual funds, who were previously thought to be indifferent (or detrimental) to the social and ethical issues of the firms they invest in. Increased transparency on mutual funds' CSR engagements would attract more socially responsible investors and help them allocate their resources more efficiently; more importantly, by opening the "black box" of corporate CSR decision-making, all stakeholders can make informed decisions on CSR to maximize social benefits.

Compliance with Ethical Standards

Appendix

See Table 11.

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[21] Note that investment horizon and CSR friendliness are two related but distinct preferences. First, although funds with higher Fund CSR score have longer investment horizons, the difference in the investment horizon is 1.15 years, quite small in economical terms, between the CSR-friendly and CSR-unfriendly funds. The correlation between Fund CSR and Investment horizon (as measured by Duration) is only 0.15. Second, Table 10 shows that the interaction term of CSR-unfriendly ownership and longer investment horizons has a negative effect on a firm's future CSR. That is, CSR-unfriendly funds with a long-term view are more likely to decrease CSR. Finally, all our results are robust after controlling for investment horizon.

Table 11 Variable descriptions

Variable name	Description
Main variables	
Firm CSR	Sum of the scaled strengths minus the scaled concerns across the following dimensions: community, diversity, employee relations, environment, human rights, and product safety. For more detailed description of how strengths and concerns are calculated, please read the KLD manual
Fund CSR	Three-year average of the value-weighted *Firm CSR* score of all the stocks held by the mutual fund at the end of the year
MF ownership	Percentage of shares outstanding of a firm held by mutual funds
Friendly ownership	Percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the top tercile
Unfriendly ownership	Percentage of shares outstanding of a firm held by mutual funds with Fund CSR scores in the bottom tercile
Average Fund CSR	Ownership weighted Fund CSR score of all mutual funds holding the firm
Average Liquidated Fund CSR	Ownership-weighted Fund CSR score of all mutual funds holding the firm that were liquidated
Democratic contributions	Natural logarithm of net Democratic (Democratic minus Republican) donations by fund managers which is ownership weighted at the firm level
Control variables	
ROA	Net income before extraordinary items divided by total book value of assets
Size	Log(sales)
Book Leverage	Book value of debt divided by market value of equity
M/B	Market value of equity divided by book value of assets
R&D	Research and development spending divided by book value of assets
Advertising	Advertising expense divided by book value of assets
Portfolio weight	Weight of the stock in the portfolio
Ownership dummy	Dummy variable indication high ownership (> 1%) of a frim i by a fund j
Fund TNA	Total net asset value of the fund
Fund Family TNA	Total net asset value of the fund family
Fund Flow	Net growth in the total net assets of the fund, as a percentage of their total net assets, adjusted for prior returns
Fund Return	Annual fund return of the fund, expressed in percentage
Fund Age	Current year minus the fund's inception year
Fund Expense	Mutual fund's annual expense ratio
Fund Turnover	Minimum of the dollar values of purchases and sales in a year multiplied by a hundred and divided by the total net assets at the beginning of the year
Fund Ownership	The logarithm of the dollar value of firm held by a mutual fund
Liquidation value	Dollar value of the firm which was sold from all the liquidating mutual funds in that year
Liquidation ownership	Percentage of shares outstanding of a firm held by liquidated mutual funds
ISS	Indicator variable that takes a value of '1′ if Institutional Shareholder Services recommend voting in favor of the CSR proposal and '0' otherwise
For Proportion	Total proportion of votes that are in favor of implementing the proposal
Board Independence	Percentage of board of directors who are independent
Board Diversity	A multidimensional index of board diversity = normalized female% + normalized age standard deviation + normalized tenure standard deviation + normalized average number of outside board seats + normalized finance expert% + normalized (1- ethnicity Herfindahl index)

References

Albuquerque, R., Koskinen, Y., & Zhang, C. (2019). Corporate social responsibility and firm risk: Theory and empirical evidence. *Management Science, 65*(10), 4451–4469.

Ashraf, R., Jayaraman, N., & Ryan, H. E. (2012). Do pension-related business ties influence mutual fund proxy voting? Evidence from shareholder proposals on executive compensation. *Journal of Financial and Quantitative Analysis, 47*(3), 567–588.

Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics, 97*, 71–86.

Barnett, M. L., & Salomon, R. M. (2012). Does it pay to be really good? Addressing the shape of the relationship between social and financial performance. *Strategic Management Journal, 33*(11), 1304–1320.

Barrios, J., Fasan, M., & Nanda, D. (2014). Is corporate social responsibility an agency problem? Evidence from CEO Turnovers. *Working paper*.

Bauer, R., Derwall, J., & Otten, R. (2007). The ethical mutual fund performance debate: New evidence from Canada. *Journal of Business Ethics, 70*(2), 111–124.

Bénabou, R., & Tirole, J. (2010). Individual and Corporate Social Responsibility. *Economica, 77*(305), 1–19.

Berg, F., Koelbel, J., & Rigobon, R. (2019). Aggregate confusion: The divergence of ESG ratings. *Working paper*.

Bernile, G., Bhagwat, V., & Yonker, S. (2018). Board diversity, firm risk, and corporate policies. *Journal of Financial Economics, 127*(3), 588–612.

Berrone, P., & Gomez-Mejia, L. R. (2009). Environmental performance and executive compensation: An integrated agency institutional perspective. *Academy of Management Journal, 52*(1), 103–126.

Besley, T., & Ghatak, M. (2007). Retailing public goods: The economics of corporate social responsibility. *Journal of Public Economics, 91*(9), 1645–1663.

Bird, R., Hall, A. D., Momentè, F., & Reggiani, F. (2007). What corporate social responsibility activities are valued by the market? *Journal of Business Ethics, 76*(2), 189–206.

Borgers, A., Derwall, J., Koedijk, K., & ter Horst, J. (2015). Do social factors influence investment behavior and performance? Evidence from mutual fund holdings. *Journal of Banking & Finance, 60*, 112–126.

Borochin, P., & Yang, J. (2017). Options, equity risks, and the value of capital structure adjustments. *Journal of Corporate Finance, 42*, 150–178.

Brekke, K. A., & Nyborg, K. (2008). Attracting responsible employees: Green production as labor market screening. *Resource and Energy Economics, 30*(4), 509–526.

Brown, K. C., Harlow, W. V., & Starks, L. T. (1996). Of tournaments and temptations: An analysis of managerial incentives in the mutual fund industry. *Journal of Finance, 51*(1), 85–110.

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review, 32*(3), 946–967.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *Financial review, 38*(1), 33–53.

Cella, C., Ellul, A., & Giannetti, M. (2013). Investors' horizons and the amplification of market shocks. *Review of Financial Studies, 26*(7), 1607–1648.

Chen, T., Dong, H., & Lin, C. (2020). Institutional shareholders and corporate social responsibility. *Journal of Financial Economics, 135*(2), 483–504.

Chen, X., Harford, J., & Li, K. (2007). Monitoring: Which institutions matter? *Journal of Financial Economics, 86*(2), 279–305.

Chevalier, J., & Ellison, G. (1997). Risk taking by mutual funds as a response to incentives. *Journal of Political Economy, 105*(6), 1167–1200.

Chou, J., Ng, L., & Wang, Q. (2011). Are better governed funds better monitors? *Journal of Corporate Finance, 17*(5), 1254–1271.

Climent, F., & Soriano, P. (2011). Green and good? The investment performance of US environmental mutual funds. *Journal of Business Ethics, 103*(2), 275–287.

Cox, P., & Wicks, P. (2011). Institutional interest in corporate responsibility: Portfolio evidence and ethical explanation. *Journal of Business Ethics, 103*(2), 143–165.

Cramer, J., Jonker, J., & van der Heijden, A. (2004). Making sense of corporate social responsibility. *Journal of Business Ethics, 55*(2), 215.

Cremers, K. J. M., & Petajisto, A. (2009). How active is your fund manager? A new measure that predicts performance. *Review of Financial Studies, 22*(9), 3329–3365.

Cronqvist, H., & Fahlenbrach, R. (2008). Large shareholders and corporate policies. *Review of Financial Studies, 22*(10), 3941–3976.

Davis, G., & Kim, E. (2007). Business ties and proxy voting by mutual funds. *Journal of Financial Economics, 85*(2), 552–570.

Deng, X., Kang, J., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics, 110*(1), 87–109.

Di Giuli, A., & Kostovetsky, L. (2014). Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics, 111*(1), 158–180.

Dimmock, S. G., Gerken, W. C., Ivković, Z., & Weisbenner, S. J. (2018). Capital gains lock-in and governance choices. *Journal of Financial Economics, 127*(1), 113–135.

Dimson, E., Karakaş, O., & Li, X. (2015). Active ownership. *Review of Financial Studies, 28*(12), 3225–3268.

Dunbar, C., Li, Z. F. & Shi, Y. (2018). Corporate social responsibility and CEO risk-taking incentives. *Working paper*.

Dyck, A., Lins, K. V., Roth, L., & Wagner, H. F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics, 131*(3), 693–714.

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics, 101*(3), 621–640.

El-Ghoul, S., & Karoui, A. (2017). Does corporate social responsibility affect mutual fund performance and flows? *Journal of Banking & Finance, 77*, 53–63.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics, 26*(2), 301–325.

Flammer, C., M. Toffel, & K. Viswanathan. (2019). Shareholder activism and firms' voluntary disclosure of climate change risks. *Working paper*.

Friedman, M. (1970). *The social responsibility of business is to increase its profits* (p. 13). New York p: New York Time Magazine.

Galbreath, J. (2016). When do board and management resources complement each other? A study of effects on corporate social responsibility. *Journal of Business Ethics, 136*(2), 281–292.

Gibson, R., S. Glossner, P. Krueger, P. Matos, & T. Steffen. (2020). Responsible institutional investing around the world. Working paper.

Gibson, R. & Krueger, P. (2018). The Sustainability Footprint of Institutional Investors. *Swiss Finance Institute Research Paper, (17–05)*.

Gillan, S. L., & Starks, L. T. (2000). Corporate governance proposals and shareholder activism: The role of institutional investors. *Journal of Financial Economics, 57*(2), 275–305.

Gloßner, S. (2019). Investor Horizons, Long-Term Blockholders, and Corporate Social Responsibility. *Journal of Banking and Finance, 103*, 78–97.

Goldstein, M. (2011). The state of engagement between US corporations and shareholders. *Institutional Shareholder Services, 5*, 1–30.

Goldstein, M. (2014). Defining engagement: An update on the evolving relationship between shareholders, directors and executives. *Institutional Shareholder Services*.

Gopalan, R. (2008). Institutional stock sales and takeovers: The disciplinary role of voting with your feet. *Working paper*.

Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking & Finance, 35*(7), 1794–1810.

Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial development. *American Economic Review, 94*, 526–556.

Harjoto, M., Jo, H., & Kim, Y. (2017). Is institutional ownership related to corporate social responsibility? The nonlinear relation and its implication for stock return volatility. *Journal of Business Ethics, 146*(1), 77–109.

Harjoto, M., & Laksmana, I. (2018). The impact of corporate social responsibility on risk taking and firm value. *Journal of Business Ethics, 151*(2), 353–373.

Hartzmark, S. M., & Sussman, A. B. (2019). Do investors value sustainability? A natural experiment examining ranking and fund flows. *The Journal of Finance, 74*(6), 2789–2837.

Hill, R. P., Ainscough, T., Shank, T., & Manullang, D. (2007). Corporate social responsibility and socially responsible investing: A global perspective. *Journal of Business Ethics, 70*(2), 165–174.

Hoepner, A. G., Oikonomou, I., Sautner, Z., Starks, L. T., & Zhou, X. (2018). ESG shareholder engagement and downside risk. *Working Paper.*

Hong, B., Li, Z., & Minor, D. (2016). Corporate governance and executive compensation for corporate social responsibility. *Journal of Business Ethics, 136*(1), 199–213.

Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics, 93*(1), 15–36.

Hong, H., & Kostovetsky, L. (2012). Red and blue investing: Values and finance. *Journal of Financial Economics, 103*(1), 1–19.

Humphrey, J. E., Warren, G., & Boon, J. (2016). What is Different about Socially Responsible Funds? A Holding-Based Analysis. *Journal of Business Ethics, 138*(2), 263–277.

Ibikunle, G., & Steffen, T. (2017). European green mutual fund performance: A comparative analysis with their conventional and black peers. *Journal of Business Ethics, 145*(2), 337–355.

Ilhan, E., P. Krueger, Z. Sautner, & L. Starks. (2020). Institutional investors' views and preferences on climate risk disclosure. Working paper.

Iliev, P., & Lowry, M. (2014). Are mutual funds active voters? *Review of Financial Studies, 28*(2), 446–485.

Jo, H., & Harjoto, M. A. (2011). Corporate governance and firm value: The impact of corporate social responsibility. *Journal of Business Ethics, 103*(3), 351–383.

Kacperczyk, M., Sialm, C., & Zheng, L. (2008). Unobserved actions of mutual funds. *Review of Financial Studies, 21*(6), 2379–2416.

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate sustainability: First evidence on materiality. *The Accounting Review, 91*(6), 1697–1724.

Kim, H., Kim, T., Kim, Y., & Park, K. (2019). Do long-term institutional investors promote corporate social responsibility activities? *Journal of Banking and Finance, 101*, 256–269.

Kölbel, J. F., Busch, T., & Jancso, L. M. (2017). How media coverage of corporate social irresponsibility increases financial risk. *Strategic Management Journal, 38*(11), 2266–2284.

Krueger, P. (2015). Corporate goodness and shareholder wealth. *Journal of Financial Economics, 115*(2), 304–329.

Krueger, P., Sautner, Z., & Starks, L. (2020). The importance of climate risks for institutional investors. *Review of Financial Studies, 33*, 1067–1111.

Lin, C., Ma, Y., Malatesta, P., & Xuan, Y. (2011). Ownership structure and the cost of corporate borrowing. *Journal of Financial Economics, 100*(1), 1–23.

Loss, L., & Seligman, J. (2004). *Fundamentals of securities regulation* (5th ed.). New York, NY: Aspen Publishers.

Mahoney, L. S., & Thorne, L. (2005). Corporate social responsibility and long-term compensation: Evidence from Canada. *Journal of Business Ethics, 57*(3), 241–253.

Malik, M. (2015). Value-enhancing capabilities of CSR: A brief review of contemporary literature. *Journal of Business Ethics, 127*(2), 419–438.

Masulis, R. W., & Reza, S. W. (2015). Agency problems of corporate philanthropy. *Review of Financial Studies, 28*(2), 592–636.

Matvos, G., & Ostrovsky, M. (2010). Heterogeneity and peer effects in mutual fund proxy voting. *Journal of Financial Economics, 98*(1), 90–112.

McCahery, J., Sautner, Z., & Starks, L. (2016). Behind the scenes: The corporate governance preferences of institutional investors. *Journal of Finance, 71*, 2905–2932.

McLemore, P. (2019). Do mutual funds have decreasing returns to scale? Evidence from fund mergers. *Journal of Financial and Quantitative Analysis, 54*(4), 1683–1711.

Milliken, F., & Martins, L. (1996). Searching for common threads: understanding the multiple effects of diversity in organizational groups. *Academy of Management Review, 21*(2), 402–433.

Morgan, A., Poulsen, A., Wolf, J., & Yang, T. (2011). Mutual funds as monitors: Evidence from mutual fund voting. *Journal of Corporate Finance, 17*(4), 914–928.

Oikonomou, I., Brooks, C., & Pavelin, S. (2012). The impact of corporate social performance on financial risk and utility: A longitudinal analysis. *Financial Management, 41*(2), 483–515.

Parrino, R., Sias, R. W., & Starks, L. T. (2003). Voting with their feet: Institutional ownership changes around forced CEO turnover. *Journal of Financial Economics, 68*(1), 3–46.

Rao, K., & Tilt, C. (2016). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics, 138*(2), 327–347.

Scrivens, K., & Smith, C. (2013). Four interpretations of social capital: an agenda for measurement. *OECD Statistics. Working paper.*

Servaes, H., & Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Science, 59*(5), 1045–1061.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *Journal of Finance, 52*(2), 737–783.

Sialm, C., Starks, L. T., & Zhang, H. (2015). Defined contribution pension plans: Sticky or discerning money? *Journal of Finance, 70*(2), 805–838.

Starks, L. T., Venkat, P., & Zhu, Q. (2017). Corporate ESG profiles and investor horizons. *Working paper.*

Tucker, A. M. (2018). The long and the short: Portfolio turnover ratios mutual fund investment time horizons. *Journal of Corporation Law, 43*(3), 581–648.

Yermack, D. (2009). Deductio'ad absurdum: CEOs donating their own stock to their own family foundations. *Journal of Financial Economics, 94*(1), 107–123.

Zhao, X. (2005). Exit decisions in the US mutual fund industry. *The Journal of Business, 78*(4), 1365–1402.