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journal homepage: [www.elsevier.com/locate/jfec](http://www.elsevier.com/locate/jfec)Institutional shareholders and corporate social responsibility<sup>☆</sup>Tao Chen<sup>a</sup>, Hui Dong<sup>b,\*</sup>, Chen Lin<sup>c</sup><sup>a</sup> Nanyang Business School, Nanyang Technological University, Singapore<sup>b</sup> Institute of Accounting and Finance, School of Accountancy, Shanghai University of Finance and Economics, China<sup>c</sup> Faculty of Business and Economics, The University of Hong Kong, Hong Kong, China

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## ABSTRACT

This study uses two distinct quasi-natural experiments to examine the effect of institutional shareholders on corporate social responsibility (CSR). We first find that an exogenous increase in institutional holding caused by Russell Index reconstitutions improves portfolio firms' CSR performance. We then find that firms have lower CSR ratings when shareholders are distracted due to exogenous shocks. Moreover, the effect of institutional ownership is stronger in CSR categories that are financially material. Furthermore, we show that institutional shareholders influence CSR through CSR-related proposals. Overall, our results suggest that institutional shareholders can generate real social impact.

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"Through their investment decisions, institutional investors have the potential to influence company behavior: as these investors assess and value companies

on their environmental, social and governance performance, this can lead companies in all sectors to take more actions in line with sustainable development."

—The Swedish Foundation for Strategic Environmental Research, 2008

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## 1. Introduction

In the past decade, sustainable and responsible investments (SRI) have become part of mainstream investing strategies. According to the Forum for Sustainable and Responsible Investment (SIF, 2014), in 2014 US assets tied to SRI totaled \$6.57 trillion, representing nearly 18% of the \$36.8 trillion in assets under management. This represents a tenfold increase since 1995 with a compound annual rate of 13.1%. To meet clients' demand for sustainable investments, an increasing number of institutional investors have committed to integrating environmental, social, and gover-

nance (ESG) into their capital allocation process.<sup>1</sup> For instance, as of 2015, more than 1400 institutions representing \$59 trillion assets under management have signed up to the United Nations-supported Principles for Responsible Investing (UNPRI) Initiative.<sup>2</sup> Nevertheless, anecdotal evidence has shown that institutions have different attitudes toward corporate social responsibility (CSR) policies.<sup>3</sup>

The majority of the existing literature has focused on how firm-level CSR influences institutional holdings. For example, [Hong and Kacperczyk \(2009\)](#) find that norm-constrained institutions, such as pension funds, are less likely to hold “sin” stocks. Their analysis is limited to firms operating in certain industries such as alcohol, tobacco, and gambling. [Fernando et al. \(2010\)](#) show that institutional investors tend to hold fewer shares in both green firms and toxic firms than in neutral firms. [Chava \(2014\)](#) finds a negative relation between institutional holdings and a firm’s environmental concerns. The latter two studies consider only the environmental aspects of CSR. More recently, [Nofsinger et al. \(2016\)](#) show that institutional investor portfolios tend to avoid stocks with CSR concerns, but portfolios are not tilted toward CSR strengths. [Starks et al. \(2017\)](#) find that firms with better ESG profiles tend to have investors with longer investments horizons. Meanwhile, [Gillan et al. \(2010\)](#) find that institutional investors are less likely to own shares of firms with improved environmental or social responsibility.

In this study, we try to understand how institutional investors use ownership and monitoring attention to influence the CSR policies of their portfolio firms. As discussed earlier, the apparent reverse causality concern makes it difficult to identify the causal effect of institutional investors on CSR. Furthermore, unobservable firm heterogeneity could be simultaneously correlated with institutional ownership or monitoring attention and firm-level CSR. Therefore, we use two quasi-natural experiments to draw causal inferences and further our understanding of whether and how institutional shareholders affect sustainability in their portfolio firms.

There are several reasons that could motivate institutional shareholders to improve firms’ social outcomes. First, client demands for sustainability commitments are growing rapidly. More and more individual capital providers now consider environmental and social impacts when making investment decisions,<sup>4</sup> in addition to financial returns. Prior studies have shown that individ-

ual investors could derive utility by investing in accordance with their social preferences for social responsibility. They are willing to forgo financial performance and pay a premium to invest in socially responsible companies (see, e.g., [Heinkel et al., 2001](#); [Gollier and Pouget, 2014](#); [Riedl and Smeets, 2017](#)). For example, [Riedl and Smeets \(2017\)](#) find that both social preferences and social signaling play a more significant role in explaining investors’ SRI decisions than financial motives.<sup>5</sup>

Second, given that fund flows are crucial for fund managers, as managers are generally rewarded for increasing the value of assets under management (see, e.g., [Brown et al., 1996](#); [Chevalier and Ellison, 1997](#)) and that SRI commitments can attract substantial fund flows, institutions will incorporate social responsibility factors into their portfolios to meet client demands.<sup>6</sup> [Bialkowski and Starks \(2015\)](#) find that flows to SRI funds exhibit greater growth and are more persistent and less performance sensitive than flows to conventional funds, even during a financial crisis. [Riedl and Smeets \(2017\)](#) show that socially responsible investors are willing to pay higher management fees, even though they expect to earn lower returns on SRI funds than on conventional funds. Moreover, the management strategy has changed from negative screening to positive engagements with social and/or environmental returns (see, e.g., [Dimson et al., 2015](#); [Barber et al., 2017](#)).

Third, sustainability compliances could come to play as a risk management device in institutional portfolios. Institutional shareholders have interests that diverge from the concentrated shareholders of a single company, because they are “universal owners” and often have long-term portfolios that are representative of the whole capital market. Their portfolios are inevitably exposed to risks from corporate negative externalities.<sup>7</sup> Therefore, it is in their best interest to positively influence portfolio firms’ CSR commitments and minimize their overall exposure to these costs (see, e.g., [Chakravarthy et al., 2014](#); [Krüger, 2015](#)). For example, a concentrated investor who just owns a firm with environmental concerns might prefer to focus on the profits and not to address climate impact, whereas an institutional investor who also owns other similar firms might care more about the environmental effects of such investments.

Recent empirical research has documented consistent results of CSR’s risk management effect. For instance, [Gibson and Krüger \(2017\)](#) find that by significantly reducing portfolio risk, institutional investors with better sustainability footprints generate higher risk-adjusted performance, especially over the long run. [Hoepfner et al. \(2016\)](#) show that ESG shareholder engagements reduce firms’ downside risk. [Kecskes et al. \(2016\)](#) provide evidence that CSR activities generate value for long-term in-

<sup>1</sup> For example, the global mutual fund leader BlackRock launched the “BlackRock Impact US Equity Fund” in 2015, which aims to react to the “growing demand for sustainable and impact investment solutions.”

<sup>2</sup> See 2015 UNPRI Annual Report: [http://2xjmlj8428u1a2k5o34l1m71.wpengine.netdna-cdn.com/wp-content/uploads/PRI\\_AnnualReport2015.pdf](http://2xjmlj8428u1a2k5o34l1m71.wpengine.netdna-cdn.com/wp-content/uploads/PRI_AnnualReport2015.pdf).

<sup>3</sup> For instance, Goldman Sachs was criticized for “funding a systematic human rights violator” after purchasing the “hunger bond” of Venezuela in May 2017. In contrast, in June 2017, large institutions, such as New York State Pension Fund, the Commissioners of the Church of England, and BlackRock, backed a shareholders vote in ExxonMobil for an annual assessment to address climate change, despite board opposition.

<sup>4</sup> According to the US Trust, 67% of millennial investors believe that environmental or social factors are important considerations in making investment decisions.

<sup>5</sup> Consistently, [Bollen \(2007\)](#) and [Renneboog et al. \(2011\)](#) find that, among bad performing SRIs and bad performing conventional funds, investors are more likely to hold on to the former, ex-post.

<sup>6</sup> Based on the SIF survey, 80% of fund managers cite client demand as the reason they offer SRI funds.

<sup>7</sup> According to UNPRI, the estimated total costs of environmental externalities for listed companies exceeded \$2.5 trillion in 2008.

vestors, mainly through the reduction in cash flow risk. Lins et al. (2017) find that high-CSR firms outperformed low-CSR firms during the recent financial crisis.

Accordingly, we propose a “real effort” hypothesis: institutional shareholders generate improvements in the social impact outcomes of their portfolio firms because of the unprecedented client demand, fund flow benefits, and risk reduction arising from compliance with sustainable goals. Specifically, we hypothesize that institutional shareholders induce better overall CSR ratings and more CSR-related investments. Furthermore, if the main incentive is to reduce portfolio risk from negative corporate externalities, our hypothesis suggests that the increase in overall CSR ratings is driven by the reduction in negative social activities, i.e., CSR concerns. Institutions striving for shareholder value will focus on improving the CSR issues that are material for firm performance. Also, if sustainable goals benefit investors in the long run, we would expect our results to be more pronounced in institutions with long investment horizons.

In contrast, it is also possible that institutional investors do not exert effort to change firms' CSR; the sustainable portfolios could merely be a product designed to capitalize on investor demand for fund flows, as investors of funds lack high quality and comparable ESG information about the portfolio firms, making it difficult to evaluate the social impact outcomes (Eurosif, 2016). We call this the “catering” hypothesis, under which we would find none of the above results.

In this study, we empirically explore the following questions: 1) does an institutional shareholder's stake, i.e., the level of institutional ownership, influence a portfolio firm's CSR commitments? and 2) do different levels of shareholder attention affect firms' CSR commitments? We ask the second question because the size of a stake does not precisely represent the amount of attention paid by investors and institutional shareholders may allocate different degrees of attention to different firms, even though they have the similar level of ownership. To show that the effect is not primarily due to self-selection, we use two quasi-natural experiments as our identification strategy. We find significant and consistent evidence that both higher institutional ownership and more concentrated shareholder attention encourage corporate managers to adopt more socially responsible policies.

Specifically, to answer the first question, we use the annual Russell Index reconstitutions as exogenous shocks to institutional holdings (see, e.g., Appel et al., 2016; Crane et al., 2016). We find that the exogenous increases in institutional ownership lead to better CSR ratings. Specifically, a one standard deviation increase in institutional ownership causes an average increase in a firm's CSR rating of 0.8 points, which can be translated into an extra \$32 million in Selling, General, and Administrative (SG&A) expenses or as 15% of net income.

Furthermore, consistent with the risk management hypothesis, we find that increased CSR ratings are mainly the result of a reduction in CSR concerns, indicating that higher institutional ownership generally focuses on controlling negative corporate externalities to reduce portfolio risk rather than on increasing positive social activities.

Moreover, as there are a large number of CSR issues, it is important to examine whether institutional ownership mainly drives changes in CSR issues that are material to firm values. The Sustainability Accounting Standards Board (SASB) has developed industry standards to distinguish material and immaterial ESG issues from an investor viewpoint. Previous studies have demonstrated that the standards have meaningful predictive power over future financial performance (see, e.g., Grewal et al., 2016; Khan et al., 2016). We use the SASB's industry materiality guidelines to identify material CSR issues for firms in ten sectors with 79 industries. We find that higher institutional ownership leads firms to improve material CSR performance, indicating that the improvements have valuation implications for corporations.

In addition, we individually examine the effect of institutional ownership on each of the 24 concern and 29 strength subcategories, as different CSR subcategories might not have equal importance for institutional shareholders. The results show that higher ownership only reduces those negative CSR issues that might lead to lawsuits or regulatory penalties due to issues such as gender discrimination, unsafe working place, non-compliance with environmental regulations, or improper marketing. At the same time, higher ownership increases the positive CSR policies that either increase compliance with environmental regulations (i.e., recycling) or improve employee health and safety and promote R&D activities.

With regard to the second question, institutional investors do not monitor all of their holdings equally (Fich et al., 2015), as attention is a scarce resource and institutional shareholders allocate attention across firms subject to a limited constraint. Building on Kempf et al. (2017) attention distraction measure, we find that managers react to distracted shareholders by reducing CSR ratings. For example, a one standard deviation decrease in shareholder attention results in a 0.404 decrease in CSR rating. We further find that the effect of distraction on CSR is more pronounced in firms with weaker governance.

We use three alternative measures of shareholder attention to further strengthen the monitoring intensity argument. Specifically, we construct the three measures based on 1) the past six-month performance of the mutual funds who hold the firm's shares, 2) the past six-month fund outflow of the mutual funds who hold the firm's shares, and 3) the recent decline in voting participation of investors who hold the firm's shares. The intuition for the first two measures is that institutions with recent bad performance or greater fund outflows might care more about stock performance or their investors, rather than about social responsibility, while the third is a direct measure of shareholders' decline in attention to the firm. The results using the three alternative measures confirm our previous findings and provide further support for our hypothesis that firms with more concentrated shareholder attention have higher CSR ratings.

Next, we provide evidence of CSR-related shareholder proposals, a channel through which institutional investors influence firms' CSR spending. If institutional shareholders are engaged in monitoring CSR in their portfolio firms, then we should observe that both a higher level of owner-

ship and more concentrated shareholder attention would lead to an increase in shareholder proposals related to CSR issues. Our results indeed show that there is an increased number and probability of SRI shareholder proposals in firms at the top of the Russell 2000 Index and for firms with less shareholder attention distraction.

Overall, the empirical results support the “real effort” hypothesis. We provide consistent evidence that institutional shareholders generate improvements in social impact outcomes and that sustainability commitments are not merely an attempt to capitalize on investor demand. The findings that shareholders drive those CSR issues that are financially material indicate that CSR improvements have valuation implications.

Our study contributes to the literature in a number of ways. First, it contributes to the literature that investigates how institutional holdings drive portfolio firms’ CSR issues. As discussed earlier, existing studies focus on how CSR affects institutional holdings. Until recently, very few studies have looked at the effect of institutional investors on CSR. Jo and Harjoto (2011) use institutional ownership as a corporate governance measure and find that better corporate governance is associated with higher CSR scores and lower concern scores. However, the magnitude of the results is much smaller relative to our findings,<sup>8</sup> which might be due to the potential endogeneity problem. Dyck et al. (2019) provide international evidence by focusing on how social norms across countries influence the relationships between international investors and CSR. In addition, Dimson et al. (2015) exploit empirical evidence for the impact of one institutional investor’s ESG activism on CSR issues through private engagements and find a significant success rate for such activities.

We differ from prior studies in several ways. First, we study not only the overall CSR ratings but also each of the five dimensions and further the 53 subcategories of CSR components, providing a more detailed picture, as the components might not be equally important for institutional investors. Second, we use two identification strategies to draw causal inferences about the effect of both the institutional ownership and investor attention on firms’ CSR activities. Third, using the SASB’s industry materiality guidelines to identify material CSR issues for firms within specific industries, we find that institutional ownership mainly encourages firms to increase CSR ratings that are financially material. Fourth, in addition to using Kemp et al. (2017) distraction measure, we identify the scenarios under which institutional investors pay more attention to firms’ CSR issues. Finally, we show that “voice,” specifically initiating more SRI proposals, is an important mechanism through which institutional investors influence portfolio firms’ CSR policies.

Second, this study adds to the literature that examines the firm characteristics that influence CSR engagements (see, e.g., Di Giuli and Kostovetsky, 2014; Cheng et al., 2016; Ferrell et al., 2016; Cronqvist and Yu, 2017). By

showing that institutional investors encourage such investments, it expands on earlier research that tries to identify the factors that affect corporate policies on social goodness.

Finally, we contribute to the large volume of studies that investigate the role of institutional investors in shaping various aspects of corporate decisions (see, e.g., Gillan and Starks, 2000, 2003), such as executive compensation (Hartzell and Starks, 2003), governance indices (see, e.g., Aggarwal et al., 2011; Chung and Zhang, 2011), acquisition decisions (Chen et al., 2007), and so forth.

The remainder of the paper is organized as follows. Section 2 outlines our data and sample construction. Section 3 presents the identification strategy and the results of our analysis of the impact of institutional ownership on CSR commitments. Section 4 presents the identification strategy and the results for our analysis of the effect of shareholder attention on CSR commitments. Section 5 further discusses the monitoring channel through CSR-related shareholder proposals. Our conclusions are presented in Section 6.

## 2. Data and sample construction

In this section, we describe the key variables used in our identification strategy and the sample constructions.

### 2.1. Variable measurement and data source

Our data on institutional ownership come from the Securities and Exchange Commission (SEC) 13-F filings in the Thomson Reuters Institutional Holdings database. We calculate the total institutional ownership (*IO*) as the percentage of outstanding shares held by institutional investors.

We obtain firms’ CSR performance measures from the MSCI ESG KLD database (KLD), which had been widely used in studies investigating the determinants and consequences of firms’ CSR performance (see, e.g., Deng et al., 2013; Khan et al., 2016). The KLD provides the most comprehensive data on firm-level social ratings along several dimensions including community, workforce diversity, employee relations, human rights, environment impact, product quality, corporate governance, and whether firms’ operations are related to alcohol, gaming, firearms, military contracting, nuclear, or tobacco. To score the first seven dimensions, a firm is given one “Strengths” (“Concerns”) point for each socially good (bad) deed it commits in that area. For the last six aspects, the database only scores “Concerns.”

In this study, we use the KLD rating scores for five dimensions: community (*Com*), diversity (*Div*), employee relations (*Emp*), environment (*Env*), and product (*Pro*). We exclude the dimension of corporate governance because the relationship between institutional ownership and corporate governance has been studied in other papers (Appel et al., 2016). We exclude the dimension of human rights because most of the categories in this issue (e.g., indigenous people relations) are only applicable to the small number of sample firms that operate overseas or have

<sup>8</sup> Jo and Harjoto (2011) find that a one percentage increase in ownership is associated with a 0.004-point increase in total CSR score; the effect is over ten times (0.05 point) larger in our findings.



overseas suppliers and thus lack of variations.<sup>9</sup> We exclude the last six dimensions (i.e., whether firms' operations are related to alcohol, gaming, firearms, military contracting, nuclear, and tobacco) because these are mainly industry level rather than firm level measures and only score "Concerns."

Therefore, our final CSR scores for each company are calculated from the ratings of 53 different categories (29 strengths and 24 concerns) in the five dimensions. KLD ratings are available for 55 categories for our sample period. We exclude the community-related "volunteer programs strength" category (available since 2005) and the environment-related "management systems strength" category (available since 2006), as ratings are not available for the entire sample period. Detailed descriptions of the different categories are reported in Appendix A. We first sum the total number of strengths to calculate the *Strengths* score and sum the total number of concerns to calculate the *Concerns* score. Then, we deduct the concerns score from strengths to get the total CSR score. We also obtain the CSR score for each dimension by subtracting the number of concerns from the number of strengths in that dimension.

We also include control variables that have been used in prior studies (e.g., Ferrell et al., 2016). Firm size (*Size*) is measured by the natural logarithm of the total assets at the end of the fiscal year. *Leverage* is defined as long-term debt plus current liabilities deflated by total assets. *ROA* is operating income before depreciation divided by total assets. *M/B* is the ratio of the market value of equity measured as the price times shares outstanding over the book value of the equity. *Cash holdings* is the ratio of cash and short-term investments to the book value of total assets. *Sales growth* is the change in sales scaled by lagged total assets. *Advertising* is the ratio of advertising expenses divided by total assets. *R&D intensity* is the annual dollars spent on R&D scaled by total assets. *Dividends* is an indicator that equals one if the firm has a nonzero dividend in the observation year, and zero otherwise. Detailed definitions of the variables are provided in Appendix A.

## 2.2. Sample construction and descriptive statistics

In this section, we describe the sample construction for our first experiment: Russell Index reconstructions. To predict the firms' ranking in the Russell 1000 and 2000 indices, we take all 3000 firms in the Russell 3000 Index and calculate the total market capitalization of each firm at the end of May. We do not use the end-of-June rankings because of the float adjustment made by Russell so that firm characteristics are not continuous at the cutoff point (see, e.g., Appel et al., 2016; Crane et al., 2016). We calculate the total market cap using adjusted Compustat quarterly shares outstanding multiplied by CRSP share prices at the last trading day in May. The data of the Russell Index are merged with the firm-level financial data, institutional holding data, and CSR data. We choose our sample period

to be 2003–2006. We start the sample at 2003 because this is the year that KLD begins to include full coverage of the Russell 3000. We end the sample prior to 2007, which is when Russell implemented the "banding" methodology for reconstitution, which means that the data no longer necessarily reflects the 1000 and subsequent 2000 largest stocks by market capitalization.

Panel A of Table 1 reports the summary statistics of the key variables used in our first experiment. It provides a statistical description of firms in the Russell 1000 and 2000 indices and the *p*-value of their mean differences. Firms in the Russell 1000 Index have better CSR performance than firms in the Russell 2000 index, as evidenced by their significantly higher CSR scores. When we decompose the total CSR into *Strengths* and *Concerns*, we find that Russell 1000 firms engage in both significantly more positive and negative social activities. With respect to the five dimensions, Russell 1000 firms perform better in social activities related to community, diversity, and employee satisfaction, but worse in environment and product issues. The analysis of firm-level characteristics shows that compared to Russell 2000 firms, Russell 1000 firms have significantly higher institutional ownership, use more leverage, and are more profitable, but they tend to hold less cash. Also, firms in the Russell 1000 Index tend to have higher sales growth and are more likely to pay dividends than firms in the Russell 2000 Index.

The validity of the random index assignment relies on the verification that the differences in CSR can be attributed solely to variations in institutional ownership instead of to discontinuities in other pre-assignment firm characteristics. In Panel B, we present pre-assignment sample means and tests for differences within two bandwidths ( $\pm 50$  and  $\pm 150$ ) on either side of the threshold cutoff. The results show that our sample firms have similar CSR ratings and firm-level characteristics before the index assignment, in general. These results confirm that the random assignment is valid, as the sample firms are like-randomized around the 1000/2000 cutoff.

## 3. Institutional ownership and CSR

### 3.1. Identification strategy

To identify the causal relationship between institutional ownership and firms' CSR ratings, we use the Russell Index assignment as an exogenous shock to institutional holdings to establish that institutional ownership causes specific changes in firms' CSR policy. In the following, we first introduce the methodology for constructing the Russell 1000 and 2000 indices and the randomness of the index assignment. Then we discuss how this results in a discontinuity in institutional ownership that is plausibly exogenous to a firm's CSR policy.

#### 3.1.1. Random assignment of the Russell index

Each year, Russell Inc. constructs the Russell indices based on the end-of-May closing price implied market capitalization ranks. The 1000 firms with the highest market values (i.e., firms ranked between 1 and 1000) that day become members of the Russell 1000 Index and the

<sup>9</sup> In untabulated analysis, we show that our baseline results do not change quantitatively if we include corporate governance and human rights into the CSR measures.

**Table 1**

Summary statistics.

Panel A. Main variables in the Russell Index assignment							
	Russell 1000			Russell 2000			Mean diff ( <i>p</i> -value)
	Mean	Median	StDev	Mean	Median	StDev	
CSR	0.131	0.000	2.089	−0.424	0.000	1.278	0.000
Strengths	1.840	1.000	2.136	0.481	0.000	0.858	0.000
Concerns	1.715	1.000	1.711	0.907	1.000	0.893	0.000
Com	0.124	0.000	0.700	0.007	0.000	0.341	0.000
Div	0.701	1.000	0.458	0.488	0.000	0.500	0.000
Emp	−0.114	0.000	0.955	−0.259	0.000	0.613	0.000
Env	−0.194	0.000	0.827	−0.032	0.000	0.312	0.000
Pro	−0.370	0.000	0.804	−0.048	0.000	0.299	0.000
IO	0.694	0.708	0.183	0.591	0.616	0.269	0.000
Leverage	0.192	0.157	0.173	0.165	0.081	0.214	0.000
ROA	0.068	0.059	0.074	0.015	0.027	0.191	0.000
M/B	2.069	1.587	1.254	2.053	1.500	2.474	0.714
Cash holdings	0.295	0.292	0.246	0.356	0.368	0.312	0.000
Advertising	0.009	0.000	0.027	0.009	0.000	0.036	0.478
R&D intensity	0.019	0.000	0.043	0.037	0.000	0.093	0.000
Sales growth	0.101	0.085	0.123	0.081	0.028	0.194	0.000
Dividends	0.701	1.000	0.458	0.488	0.000	0.500	0.000
Panel B. Pre-assignment firm characteristics							
	Bandwidth $\pm 50$			Bandwidth $\pm 150$			Diff ( <i>p</i> -value)
	Russell 1000	Russell 2000	Diff ( <i>p</i> -value)	Russell 1000	Russell 2000	Diff ( <i>p</i> -value)	
CSR	−0.130	−0.301	0.469	−0.375	−0.404	0.821	
Strengths	1.041	0.937	0.507	1.021	0.876	0.082	
Concerns	1.171	1.238	0.646	1.396	1.280	0.182	
Com	0.034	−0.014	0.349	0.004	0.002	0.940	
Div	0.267	0.210	0.660	0.237	0.124	0.110	
Emp	−0.226	−0.231	0.956	−0.288	−0.260	0.588	
Env	−0.130	−0.112	0.811	−0.172	−0.113	0.175	
Pro	−0.075	−0.154	0.114	−0.157	−0.158	0.971	
IO	0.752	0.736	0.554	0.746	0.743	0.844	
Leverage	0.179	0.165	0.537	0.193	0.185	0.564	
ROA	0.058	0.040	0.104	0.057	0.046	0.139	
M/B	2.080	2.084	0.978	2.228	2.058	0.071	
Cash holdings	0.288	0.314	0.409	0.278	0.309	0.066	
Advertising	0.025	0.029	0.697	0.027	0.032	0.502	
R&D intensity	0.039	0.053	0.172	0.046	0.047	0.759	
Sales growth	0.107	0.086	0.245	0.103	0.093	0.328	
Dividends	0.267	0.210	0.660	0.237	0.124	0.110	
Panel C. Main variables in shareholder attention							
	Mean	StDev	Q1	Median	Q3	N	
CSR	−0.338	2.314	−2.000	0.000	1.000	28,020	
Strengths	1.545	2.185	0.000	1.000	2.000	28,020	
Concerns	1.859	1.757	1.000	1.000	3.000	28,020	
Com	0.180	0.516	0.000	0.000	0.000	28,020	
Div	0.570	1.021	0.000	0.000	1.000	28,020	
Emp	0.334	0.714	0.000	0.000	0.000	28,020	
Env	0.236	0.629	0.000	0.000	0.000	28,020	
Pro	0.094	0.311	0.000	0.000	0.000	28,020	
Distraction	0.163	0.045	0.133	0.161	0.191	28,020	
IO	0.653	0.228	0.509	0.686	0.832	28,020	
Size	7.352	1.686	6.120	7.284	8.460	28,020	
Leverage	0.224	0.197	0.045	0.201	0.339	28,020	
ROA	0.113	0.125	0.070	0.122	0.177	28,020	
M/B	2.013	1.361	1.180	1.541	2.277	28,020	
Cash holdings	0.166	0.198	0.025	0.083	0.234	28,020	
Advertising	0.012	0.029	0.000	0.000	0.007	28,020	
R&D intensity	0.036	0.070	0.000	0.000	0.040	28,020	
Sales growth	0.103	0.234	−0.001	0.060	0.171	28,020	
Dividends	0.522	0.500	0.000	1.000	1.000	28,020	
Attention based on past 6-m fund performance	0.053	0.146	−0.032	0.087	0.131	27,899	
Attention based on past 6-m fund outflow	0.065	0.051	0.025	0.050	0.091	27,810	
Attention based on recent decline in shareholder participation in voting	0.061	0.723	−0.179	−0.032	0.121	17,741	

This table provides the summary statistics for our key variables. Panel A reports the summary statistics separately for the firms in the Russell 1000 and Russell 2000 indices for the 2003–2006 period. The last column reports the *p*-value of their mean differences. The sample consists of 9975 firm-year observations. Panel B reports the firm characteristics for the firms in the Russell 1000 and Russell 2000 indices before the index assignment, within the bandwidth of  $\pm 50$  and  $\pm 150$  around the 1000/2000 cutoff, respectively. Panel C presents the summary statistics for the sample used in the setting of shareholder distraction. The sample consists of 28,020 firm-year observations from the 1991 to 2012 period. We use an inverse measure of monitoring intensity, i.e., *Distraction*, which is the weighted average exposure of firm shareholders to the shock industries. First, we use exogenous shocks to unrelated industries that are held by a given firm's institutional shareholders to identify the time periods where shareholders are likely to be distracted and to shift their attention away from the focal firm. We define an industry shock if an industry has the highest or lowest return across all of the Fama–French 12 industries in a given quarter. Then we construct firm-level distraction measures by aggregating distraction measures across all of the institutional investors for each firm. Finally, we calculate an average to get an annual measure for each firm. Higher *Distraction* implies higher levels of attention distracted from shareholders and lower levels of monitoring intensity. Definitions for all of the other variables are provided in [Appendix A](#).

next 2000 largest firms (i.e., firms ranked between 1001 and 3000) constitute the Russell 2000 Index.<sup>10</sup> The formal membership list is made available at the end of June, after Russell makes float adjustments based on its proprietary methods.

As index assignment is based solely on very small differences in market capitalization surrounding the 1000/2000 threshold, stocks being assigned to the left or right of the cutoff point is quasi-random and within a certain range should be orthogonal to firm characteristics prior to the assignment. For example, a firm ranked 1000 on May 30th might be ranked 1001 on May 31st, which would lead to a different index assignment, and this switch is unlikely to be based on future expectations of the firm's CSR performance. Moreover, the underlying market value cutoff varies from year to year, making it hard for firms to precisely control their rankings relative to other firms near the threshold prior to the assignment date. The random assignment of stocks around the threshold validates the exogenous shocks of our experiment and allows us to make causal inferences about the effect of index inclusion.

### 3.1.2. Discontinuities in index weights and institutional ownership

A stock's index assignment has an important impact on its portfolio weight in that index, as each Russell Index is value weighted such that firms at the top of either index receive the highest weight. Therefore, the 1000th largest stock at the end of May, which is just included in the Russell 1000, has a trivial portfolio weight, whereas the 1001st largest stock just included in Russell 2000 will be given a large index weight.

The significant jump in index weights at the cutoff gives rise to a large discontinuity in institutional ownership around the threshold, because Russell index membership is closely followed by institutional investors. To minimize the tracking errors, index funds are more careful when matching the weights of stocks at the top of an index than when matching the weights of those at the bottom of an index, as deviations from benchmark weights for the largest stocks tend to have real impacts on performances that are measured relative to a benchmark. More specifically, the largest firms in the Russell 2000 Index are likely to be widely held by any funds tracking the Russell 2000, whereas funds tracking the Russell 1000 would hold none of the smallest firms in the Russell 1000.

## 3.2. Research design

We use a two-stage least-squares regression method to examine the causal impact of institutional ownership on firms' CSR commitments. Specifically, we estimate the following two stage models based on Crane et al. (2016):

$$IO_{i,t} = \alpha + \tau D_{i,t} + f(R_{i,t}) + \beta_1 X_{i,t} + \beta_2 FloatAdj_{i,t} + u_i + v_t + \epsilon_{i,t} \quad (1)$$

<sup>10</sup> Only US common stocks with end-of-May closing price above \$1.00 listed on major US exchanges are considered for the Russell indices. Stocks ADR, ADS, preferred stocks, redeemable shares, warrants, rights, and trust receipts are excluded.

$$Y_{i,t} = \beta_0 + \beta_1 \widehat{IO}_{i,t} + g(R_{i,t}) + \beta_2 X_{i,t} + \beta_3 FloatAdj_{i,t} + u_i + v_t + \xi_{i,t} \quad (2)$$

where  $D_{i,t}$  is a dummy variable that equals one if firm  $i$  is a Russell 2000 index member in year  $t$ , and zero otherwise.  $R_{i,t}$  represents the distance between the size rank of firm  $i$  in year  $t$  and the threshold 1000.  $IO_{i,t}$  represents the institutional ownership fraction of firm  $i$ 's shares outstanding in the next available quarter after the index assignment in year  $t$ . In the second-stage regression, we estimate the effect of instrumented  $IO$  on CSR measures.  $Y_{i,t}$  represents the different measures of CSR (CSR, Strengths, and Concerns) in the next available fiscal year-end after the index reconstitution.  $X_{i,t}$  includes a set of time-varying firm characteristics as controls, such as Leverage, ROA, M/B, Cash holdings, Sales growth, Advertising, R&D intensity, and Dividends. We also include  $FloatAdj$ , as a proxy for Russell's float adjustment.  $FloatAdj$  is computed as the difference between the rank implied by the May 31st market capitalization and the actual rank assigned by Russell in June.  $u_i$  and  $v_t$  represent industry and year fixed effects, respectively, which are included to address the concern that the results are driven by different industries or sector-related changes in CSR. The function  $f$  (and likewise  $g$ ) is parameterized as a  $\kappa$ -th order polynomial to allow the functional form of the relation between  $R_{i,t}$  and  $IO_{i,t}$  ( $Y_{i,t}$  for  $g$ ) to vary around the Russell 1000/2000 threshold. Specifically,  $f$  takes the following form:

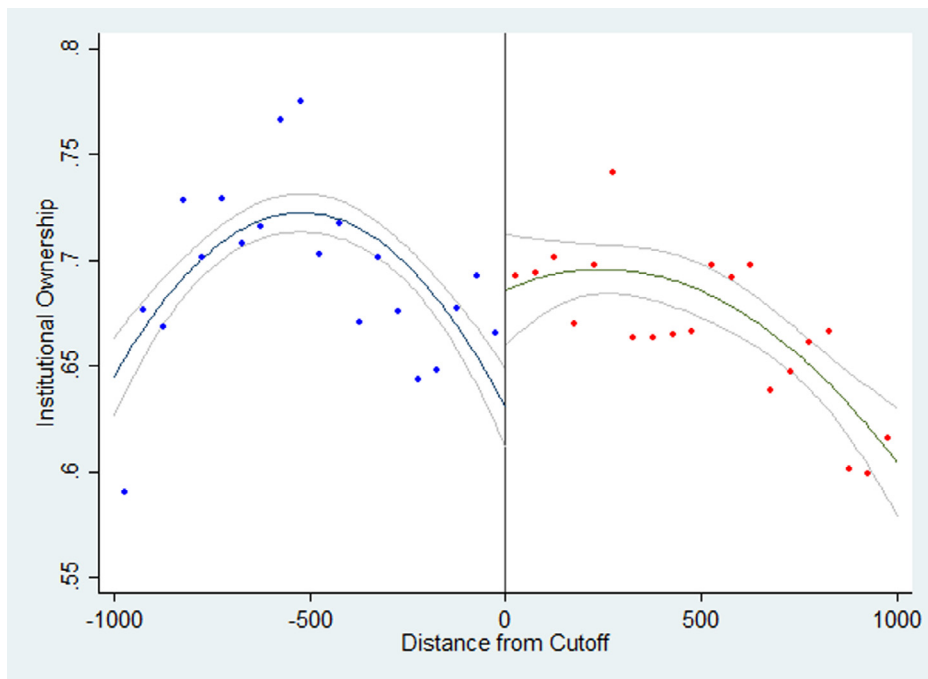
$$\sum_{j=0}^k \delta_j R_{i,t}^j + \sum_{j=0}^k \gamma_j D_{i,t} R_{i,t}^j. \quad (3)$$

Firms' CSR policies vary with several firm-level characteristics such as corporate governance (Ferrell et al., 2016), information environment (Luo et al. 2014), or financial constraints (Hong et al., 2012). As previous studies have found that Russell reconstitutions lead to improved corporate governance (Appel et al., 2016), a better information environment (see, e.g., Boone and White, 2015), and increased stock prices (Chang et al., 2015), our inferences based on the Russell experiment are subject to concerns about alternative channels. Therefore, besides the commonly used firm-level controls, we also control for corporate governance, measured by board independence (*BoardIndep*); information quality, measured by analyst coverage (*AnaCov*) and 8-K filing numbers (*8-KFilingNum*); and the price effect, measured by the June monthly stock returns (*JuneReturn*), to address these concerns. We hand collect the board data from the SEC EDGAR filings for any firms in the sample that are not covered by ISS (formerly RiskMetrics).

## 3.3. Main results

We first verify that a large discontinuity in institutional ownership arises from the discontinuity in index weights around the Russell 1000/2000 threshold. Then we identify that the exogenous variation in ownership has a real impact on firms' CSR performance.

The discontinuity in institutional ownership around the cutoff is essential to our identification strategy, because it



**Fig. 1.** Institutional ownership discontinuity. This figure presents graphical analyses of the institutional holdings for firms around the Russell 1000/2000 threshold based on end-of-May market capitalization rank, calculated from CRSP. The x-axis is the relative distance of a firm to the Russell 1000/2000 cutoff. We plot 40 equally spaced bins with a bin width of 50 firms. The solid green line represents the regression discontinuity using a fitted quadratic polynomial estimate on either side of the cutoff. The dots represent average institutional ownership for each bin, and the gray lines represent the 95% confidence intervals. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

enables us to identify a causal relation between ownership and CSR policy. Fig. 1 illustrates institutional ownership relative to the end-of-May market capitalizations in the Russell 1000 and 2000 indices; it reveals a large discontinuity in the percentage of total institutional holdings (about 7%) around the 1000/2000 threshold.

We report estimates of our first-stage regression (Eq. (1)) of institutional ownership on index ranks in Panel A of Table 2. To ensure the robustness of the estimation, we test the results using firms within different bandwidths around the threshold ( $\pm 50$ ,  $\pm 150$ , and  $\pm 250$ ) and varying polynomial orders ( $\kappa = 2$  and 3). Consistently, we find significantly positive coefficients of  $D_{i,t}$ , suggesting that firms at the top of Russell 2000 have significantly higher institutional ownership than firms at the bottom of Russell 1000, after the index reconstitution. For example, the significant coefficient on  $D_{i,t}$  in Column (5) shows that switching from the Russell 1000 to 2000 could exogenously increase firms' institutional ownership by 12.8%; this result is comparable with the results of previous studies that find a 10% increase (Crane et al., 2016). The standard errors are clustered at the firm level.

Both the figures and estimates consistently show that firms at the top of the Russell 2000 Index display significantly higher institutional ownership than firms at the bottom of the Russell 1000 Index, which reflects institutions' need to minimize tracking errors when weighting their holdings based on the index weights.

Then, we test the impact of institutional ownership on CSR (CSR, *Strengths*, and *Concerns*, respectively) by estimating the second-stage regression in Eq. (2). We standardize

the CSR measures (to have a zero mean and a standard deviation of one) to easily interpret the economic significance. The results show that institutional holdings significantly increase firms' CSR performance, as evidenced by the significantly positive coefficients of  $\hat{IO}_{i,t}$ . The impact is consistent when we use different bandwidths and varying polynomial orders. Specifically, as shown in Column (5), a one percentage increase in IO can result in about 0.028 standard deviation, or 0.045 point increase in CSR ratings.<sup>11</sup> Also, given that switching from the Russell 1000 to the Russell 2000 Index results in an increase of 12.8% in IO, inclusion in the Russell 2000 could on average cause firms to increase 0.58 point higher CSR ratings (i.e., on average, firms engage in about 0.58 more positive than negative social activities). This increase in CSR performance rating is economically significant, which represents 27% of the standard deviation of CSR ratings for firms in the Russell 1000 Index. When we further investigate the *Strengths* and *Concerns*, we find that the increased CSR performance around the 1000/2000 threshold is mainly generated by a reduction in *Concerns*.<sup>12</sup>

<sup>11</sup> The standard deviation of CSR in the full sample is 1.62.

<sup>12</sup> In untabulated tests, we conduct simple OLS regressions by regressing CSR measures on institutional ownership, firm-level controls, and industry and year fixed effects using the same sample. We find that institutional ownership does not affect total CSR score or the strengths score, but it significantly reduces concerns. The results can be found in the online Internet Appendix. Comparing the results, we can see that using the simple OLS regressions could lead to biased conclusions, probably due to the endogeneity concern.



**Table 2**

IO and CSR: results from the Russell Index assignment.

Panel A: IO and CSR: IV estimates						
	Bandwidth $\pm 50$ (1)	(2)	Bandwidth $\pm 150$ (3)	(4)	Bandwidth $\pm 250$ (5)	(6)
<i>First-stage</i>						
$D_{i,t}$	IO 0.157*** (0.055)	IO 0.150** (0.073)	IO 0.122*** (0.031)	IO 0.132*** (0.043)	IO 0.128*** (0.025)	IO 0.115*** (0.035)
Adj. $R^2$	0.537	0.546	0.445	0.447	0.436	0.436
<i>Second-stage</i>						
$\hat{IO}_{i,t}$	CSR 5.975** (2.355)	CSR 3.457 (3.660)	CSR 5.184*** (1.751)	CSR 5.407*** (2.065)	CSR 2.817** (1.263)	CSR 4.342** (1.965)
Adj. $R^2$	0.236	0.240	0.157	0.160	0.107	0.107
<i>Second-stage</i>						
$\hat{IO}_{i,t}$	Strengths 0.933 (2.812)	Strengths −0.409 (4.137)	Strengths 2.565 (1.989)	Strengths 2.230 (2.498)	Strengths 1.323 (1.448)	Strengths 2.282 (2.306)
Adj. $R^2$	0.175	0.176	0.088	0.088	0.080	0.080
<i>Second-stage</i>						
$\hat{IO}_{i,t}$	Concerns −7.717*** (1.695)	Concerns −5.539** (2.514)	Concerns −5.047*** (1.442)	Concerns −5.681*** (1.567)	Concerns −2.798*** (1.077)	Concerns −4.115*** (1.508)
Adj. $R^2$	0.229	0.234	0.203	0.206	0.166	0.167
Polynomial order, $\kappa$	2	3	2	3	2	3
Controls	Yes	Yes	Yes	Yes	Yes	Yes
FloatAdj.	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	314	314	983	983	1631	1631

Panel B: Relation between CSR and SG&A expenses	
	Dependent variable log(SG&A)
CSR	0.061*** (0.011)
Firm controls	Yes
Industry FE	Yes
Year FE	Yes
Adj. $R^2$	0.605
Obs.	8404

This table presents the results of the analysis of the effect of institutional ownership on firms' CSR investments and its economic significance as measured by SG&A expenses. Panel A provides estimates of our two-stage least-squares regressions. Eq. (1) is based on a sharp regression discontinuity (RD) design, which estimates institutional ownership as a function of the Russell index reconstitutions:

$$IO_{i,t} = \alpha + \tau D_{i,t} + f(R_{i,t}) + \beta_1 X_{i,t} + \beta_2 \text{FloatAdj}_{i,t} + u_i + v_t + \epsilon_{i,t}. \quad (1)$$

Eq. (2) presents the effect of institutional ownership, as instrumented by membership in the Russell 2000 Index, on standardized firms' total CSR performance (CSR), CSR strengths (*Strengths*), and CSR concerns (*Concerns*):

$$Y_{i,t} = \beta_0 + \beta_1 \hat{IO}_{i,t} + g(R_{i,t}) + \beta_2 X_{i,t} + \beta_3 \text{FloatAdj}_{i,t} + u_i + v_t + \xi_{i,t}. \quad (2)$$

The function  $f$  (and likewise for  $g$ ) is parameterized as a  $\kappa$ -order polynomial as follows:

$$\sum_{j=0}^{\kappa} \delta_j R_{i,t}^j + \sum_{j=0}^{\kappa} \gamma_j D_{i,t} R_{i,t}^j. \quad (3)$$

The models are estimated over the 2003–2006 period using different bandwidths ( $\pm 50$ ,  $\pm 150$ , and  $\pm 250$ ) and varying polynomial orders ( $\kappa=2$  and 3). Panel B presents the estimated coefficients from the OLS regressions of the natural log of SG&A expenses on CSR. All of the regressions are controlled for industry and year fixed effects. The control variables include Size rank in its polynomial forms, Leverage, ROA, M/B, Cash holdings, Advertising, R&D intensity, Sale growth, Dividends, BoardIndep, AnaCov, 8-KFilingNum, and JuneReturn. FloatAdj is the difference between the rank implied by the end-of-May market capitalization and the actual rank assigned by Russell in June. Standard errors are clustered at the firm level and reported in parentheses. Definitions for all of the variables are provided in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Although we have documented a significant statistical causal relationship between institutional ownership and CSR rating, it is difficult to determine the economic implications, as the CSR measures are unit-less. To evaluate the economic significance of these changes in CSR ratings, we follow the method provided by Di Giuli and Kostovetsky (2014) for translating the statistical effect into dollars. They argue that a firm's SG&A expenses will increase if it

implements more social activities, as money spent on activities such as charitable giving and pollution prevention would show up in SG&A.<sup>13</sup>

<sup>13</sup> Although there are several caveats about this method, as discussed in Di Giuli and Kostovetsky (2014), for example, it tends to understate the full costs of CSR; it is a reasonable and intuitive method to interpret the economic significance of our results.

In Panel B, we report the results of the regression of the natural log of SG&A expenses on firms' total CSR in the same year. We control for firm-level characteristics and industry and year fixed effects. We find that an increase of one point in a firm's CSR score is significantly associated with a 6.1% increase in SG&A spending. Then, we convert the CSR score into SG&A dollars using SG&A expenses. For example, as the mean value of SG&A expenses in the sample is \$633 million, a one-score increase in CSR is associated with a \$38.6 million increase in SG&A expenses for the focal firm. A one standard deviation increase in ownership causes an average increase in CSR ratings of 0.8 points ( $=0.045 \times 18.3\%$ ), which would convert to an extra \$32 million in SG&A expenses. Given the mean net income of our sample firms is \$214 million, this effect encompasses 15% of the net income. These results suggest that when index assignment leads to an increase in institutional ownership, managers increase CSR investments, which represent a large change in shareholder value.

### 3.4. Institutional ownership and material CSR ratings

Prior studies have found that the number of sustainability issues that can potentially attract investment is very large, and that the categories that are financially material for firms vary systematically between industries (see, e.g., Eccles and Serafeim, 2013; Khan et al., 2016). For example, greenhouse gas emissions can be a material issue for utility firms but are immaterial for financial companies. To shed light on the specificity of CSR pressure from institutions, we examine whether institutional shareholders focus on improving material or immaterial CSR categories. To discriminate between material and immaterial CSR issues we use the classifications of the SASB.<sup>14</sup> Using SASB's materiality guidelines, Khan et al. (2016) find that firms with good ratings on material sustainability issues significantly outperform firms with poor ratings on these issues, whereas there are no significant differences based on immaterial sustainability issues.

To determine the materiality of the firm-level CSR ratings drawn from the MSCI ESG KLD database, we hand map them to the industry-specific guidelines on materiality created by the SASB for ten sectors, representing 79 industries.<sup>15</sup> Specifically, we first follow the SASB's industry standard to classify each of the 53 KLD subcategories as material or immaterial for firms within each industry. Then, we construct the *material CSR* index for each firm by subtracting the material concerns from the material strengths. We then construct the *immaterial CSR* index using the same method. The mean material CSR score is  $-0.067$  with a standard deviation of  $0.781$ , and the mean immaterial CSR score is  $-0.355$  with a standard deviation

of  $1.823$ ; these are comparable to the scores in Khan et al. (2016). In the online Internet Appendix, we present the mapping of the SASB material topics to the KLD data items across the four sectors that are not included in Khan et al. (2016).

Panel A of Table 3 presents the percentage of the KLD subcategories that are financially material in each SASB sector. For example, in Column (3), 25 material items are identified, which account for 47% of the 53 CSR subcategories included in this study. Material items make up 15% of the KLD subcategories in the healthcare, technology, and renewable resource sectors; 30% in the consumption sector; 17% in the resource transformation sector; 21% in the financials, non-renewable resource, and transportation sectors; 23% in the infrastructure sector; and 28% in the service sector. In untabulated tests, we find that *Community* and *Employee* issues tend to be more material in the infrastructure sector; *Diversity* issues tend to be more material in the financials, technology, services, and consumption sectors; *Environmental* issues tend to be more material in the nonrenewable resource, transportation, service, and consumption sectors; and *Production* issues tend to be more material in the healthcare, financials, services, and consumption sectors.

Then we examine whether institutional shareholders mainly drive improvements in CSR issues that are material to firm values. We standardize the material and immaterial CSR ratings within each year following Kotchen and Moon (2012) and estimate Eq. (1) and Eq. (2) for the material and immaterial index, respectively, using polynomial order  $\kappa = 2$  and different bandwidths ( $\pm 50$ ,  $\pm 150$ , and  $\pm 250$ ). We further test the equality of the estimated coefficients in the two types of samples using the Wald tests. The results are reported in Panel B of Table 3. The positive and significant coefficients of instrumented institutional ownership in the material group and the insignificant coefficients in the immaterial group (except Column (2)) suggest that institutional shareholders primarily focus on the material rather than immaterial CSR improvements. The Wald tests show that the coefficients on material groups are significantly different from those on the immaterial groups.

In sum, the tests of material/immaterial CSR ratings suggest that institutional shareholders mainly improve CSR issues that are material to firm values.

### 3.5. Institutional ownership and dimensions of CSR performance

Our main results, given in previous sections, show that institutional shareholders induce portfolio firms to increase their CSR ratings, primarily by reducing negative social consequences. These analyses assume that all five dimensions of CSR ratings are equally important to institutional investors. However, prior studies suggest that only certain SRI screen strategies can raise returns higher than the benchmark: specifically, employee satisfaction, efficient environmental protection strategies, and competitive products (see, e.g., Derwall et al. 2005; Luck and Pilotte, 1993). If only certain CSR strategies increase firm value, then we expect that institutional investors will encourage firms to engage in activities in these dimensions.

<sup>14</sup> See: [www.sasb.org](http://www.sasb.org).

<sup>15</sup> Khan et al. (2016) include six out of a total of ten sectors with 45 industries because the SASB had only produced guidance for these six sectors in early 2014, which are healthcare, financials, technology and communications, nonrenewable resources, transportation, and services. We extend the mapping to the other four sectors in this paper, which are resource transformation, consumption, renewables and alternative energy, and infrastructure.

**Table 3**IO and CSR: material CSR ratings (using  $\kappa = 2$ ).

Panel A. Summary of material CSR items						
SASB sectors	(1) % of the 29 strength categories that are financially material	(2) % of the 24 concern categories that are financially material	(3) % of the 53 CSR categories that are financially material			
Health care	21%	8%	15%			
Financials	21%	21%	21%			
Technology	17%	13%	15%			
Nonrenewable resource	21%	21%	21%			
Transportation	17%	25%	21%			
Services	24%	33%	28%			
Resource transformation	14%	21%	17%			
Consumption	31%	29%	30%			
Renewable resources	14%	17%	15%			
Infrastructure	21%	25%	23%			
Panel B. IO and material CSR ratings						
	Bandwidth ±50		Bandwidth ±150		Bandwidth ±250	
	(1)	(2)	(3)	(4)	(5)	(6)
	Material	Immaterial	Material	Immaterial	Material	Immaterial
$\widehat{IO}_{i,t}$	3.646** (1.556)	0.551* (0.317)	3.331** (1.531)	0.391 (0.319)	2.387** (1.080)	0.187 (0.233)
Test “Material=Immaterial”	6.97***		6.92***		28.08***	
Controls	Yes	Yes	Yes	Yes	Yes	Yes
FloatAdj.	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	314	314	983	983	1631	1631
Adj. R^2	0.215	0.248	0.198	0.203	0.277	0.234

This table provides the results of the analysis of the effect of institutional ownership, instrumented by membership in the Russell 2000 Index, on the material and immaterial CSR ratings in the 2003–2006 period. The material and immaterial CSR issues are defined by the SASB. Columns (1), (2), and (3) of Panel A present, respectively, the percentage of the 29 Strengths, 24 Concerns, and 53 CSR subcategories in the MSCI ESG KLD ratings that are financially material to each of the SASB ten sectors. Panel B reports the estimates of the second-stage regressions using polynomial order  $\kappa=2$  and different bandwidths ( $\pm 50$ ,  $\pm 150$ , and  $\pm 250$ ). We standardize the material and immaterial CSR ratings within each year and report the Wald test of the equality of the estimated coefficients in the two samples. All of the regressions are controlled for industry and year fixed effects. The control variables include Size rank in its polynomial form, Leverage, ROA, M/B, Cash holdings, Advertising, R&D intensity, Sales growth, Dividends, BoardIndep, AnaCov, 8-KFilingNum, and JuneReturn. FloatAdj is the difference between the rank implied by the end-of-May market capitalization and the actual rank assigned by Russell in June. Standard errors are clustered at the firm level and reported in parentheses. Definitions for all of the variables are provided in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

To better understand which social issues are more relevant for institutional investors, we extend the baseline specification to separately study the effect of institutional ownership on the five different dimensions of CSR activities. The estimations are reported in Table 4 in which Panels A, B, and C present the impact of IO on the CSR score in each dimension using different bandwidths. We show that higher ownership increases firms' CSR activities in employee satisfaction, environmental protection, and product quality, consistent with the literature.

First, human capital-related theories view employees as key organizational assets and a source of sustained competitive advantage. Edmans (2011) provide empirical evidence that employee satisfaction leads to significant long-term stock returns. Consistently, we find that institutional investors influence managers to increase employee satisfaction. In the subcategory analysis in Section 3.6, we show that institutional investors focus on improving workplace safety by both reducing the concerns and increasing the strengths in this dimension.

Secondly, both anecdotal and empirical evidence indicates that firm value is sensitive to a firm's environmen-

tal position. For example, British Petroleum's stock price dropped by over half in the two months after an oil spill that contaminated a large marine environment in the Gulf of Mexico. Based on the environmental-related events covered in the Wall Street Journal, Flammer (2013) suggests that investors reward corporations for eco-friendly behavior and penalize firms for irresponsible activities. In a study of the market value of S&P 500 firms relative to their environmental performance, Konar and Cohen (2001) find that a 10% reduction in toxic chemical emissions results in a \$34 million increase in the market value of a firm's intangible assets. Moreover, Heinkel et al. (2001) show that polluting firms are associated with higher cost of capital because of a "lack of risk sharing among non-green investors." Consistent with the literature, we show that an exogenous increase in institutional ownership leads to better environmental protection. And the subcategory tests in Section 3.6 show that improvements in this dimension mainly consist of better compliance with environmental regulations.

Product quality also affects firm value because it is the main determinant of firms' sales and future cash flows.

**Table 4**

IO and CSR: analysis of CSR dimensions.

	Com	Div	Emp	Env	Pro
Panel A. Bandwidth $\pm 50$					
$\hat{IO}_{i,t}$	-0.136 (0.590)	3.151 (2.247)	4.000** (1.938)	2.599** (1.207)	2.869*** (0.931)
Controls	Yes	Yes	Yes	Yes	Yes
FloatAdj.	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. $R^2$	0.047	0.220	0.130	0.236	0.163
Obs.	314	314	314	314	314
Panel B. Bandwidth $\pm 150$					
$\hat{IO}_{i,t}$	0.321 (0.562)	2.972* (1.762)	3.111** (1.267)	1.698** (0.845)	1.779** (0.827)
Controls	Yes	Yes	Yes	Yes	Yes
FloatAdj.	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. $R^2$	0.045	0.125	0.101	0.180	0.103
Obs.	983	983	983	983	983
Panel C. Bandwidth $\pm 250$					
$\hat{IO}_{i,t}$	-0.302 (0.489)	2.351* (1.324)	1.610* (0.944)	1.092* (0.620)	0.994* (0.537)
Controls	Yes	Yes	Yes	Yes	Yes
FloatAdj.	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adj. $R^2$	0.031	0.098	0.061	0.152	0.082
Obs.	1631	1631	1631	1631	1631

This table provides the estimates of our second-stage regression of the effect of institutional ownership, instrumented by memberships in the Russell 2000 Index, on the five CSR dimensions, community (Com), diversity (Div), employee relations (Emp), environment (Env), and product quality (Pro), using polynomial order  $\kappa=2$  in the 2003–2006 period. Panels A, B, and C report the regression results over bandwidths of  $\pm 50$ ,  $\pm 150$ , and  $\pm 250$ , respectively. All of the regressions are controlled for industry and year fixed effects. The control variables include Size rank in its polynomial form, Leverage, ROA, M/B, Cash holdings, Advertising, R&D intensity, Sale growth, Dividends, BoardIndep, AnaCov, 8-KFilingNum, and JuneReturn. FloatAdj is the difference between the rank implied by the end-of-May market capitalization and the actual rank assigned by Russell in June. Standard errors are clustered at the firm level and reported in parentheses. Definitions for all of the variables are provided in [Appendix A](#). \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Firms with CSR initiatives focused on improving product quality tend to have enhanced consumer loyalty, and consumers are willing to pay a higher price for “ethical” goods ([Luo and Bhattacharya, 2006](#)). As addressed in LG’s sustainability report, product quality is the center of “customer value creation” and thus “must be ensured under any circumstance...” with “...the highest priority.” The significantly positive coefficients in our analysis show that firms at the top of the Russell 2000 Index have better performance in the product quality dimension than those at the bottom of the Russell 1000 Index, due to increased institutional ownership. And the subcategory analysis in [Section 3.6](#) suggests that institutional investors influence this dimension by reducing improper marketing and increasing product innovation.

However, we do not find significant results in the dimension of community relations. The community dimension mainly measures the generosity of a firm’s charitable giving, which might reflect agency problems, as managers may seek to improve their self-image in the communities at the expense of shareholders. Consistently, in [Section 3.6](#) our regression of ownership on each community sub-

category shows a weakly significantly negative relation between increased ownership and charitable giving issues, suggesting that institutional shareholders do not encourage corporate investment in these initiatives. Finally, [Table 4](#) shows that the dimension of diversity issues is weakly affected by institutional ownership. Our analysis of the diversity subcategories in [Section 3.6](#) shows that ownership only affects issues related to gender discrimination (*Non-representation*).

### 3.6. Institutional ownership and CSR subcategories

Our main results find that higher institutional ownership leads to better overall CSR ratings, and the effect is generally achieved by reducing concern ratings rather than significantly increasing strength ratings. However, concern ratings usually reflect actual consequences of prior irresponsible behavior that could not be changed timely. To address this concern and further our understanding of what aspects of CSR issues are significantly influenced by institutional investors, we investigate each subcategory of our CSR ratings. One of the advantages of the MSCI ESG



**Table 5**  
IO and CSR: subcategory analysis.

Panel A. Concern subcategories			
Description	Second-stage coefficient bandwidth $\pm 50$	Second-stage coefficient bandwidth $\pm 150$	Second-stage coefficient bandwidth $\pm 250$
Non-representation	−3.033*** (0.874)	−2.097*** (0.729)	−1.369** (0.566)
Health and safety	−0.700** (0.338)	−0.645** (0.295)	−0.354 (0.224)
Ozone depleting chemicals	−0.375* (0.210)	−0.300* (0.162)	−0.141 (0.120)
Climate change	−0.442 (0.456)	−0.499 (0.356)	−0.622** (0.294)
Marketing/Contracting	−0.874* (0.449)	−0.980** (0.446)	−0.530 (0.324)
Other product concerns	−0.219 (0.268)	−0.415** (0.208)	−0.310* (0.164)
Panel B. Strength subcategories			
Description	Second-stage coefficient bandwidth $\pm 50$	Second-stage coefficient bandwidth $\pm 150$	Second-stage coefficient bandwidth $\pm 250$
Health and safety	−0.042 (0.065)	0.054 (0.105)	0.168* (0.095)
Recycling	0.593 (0.383)	0.477* (0.281)	0.375** (0.171)
R&D/Innovation	0.742 (0.537)	0.695** (0.322)	0.378* (0.194)

This table studies the effect of institutional ownership on the subcategories of CSR ratings with polynomial order  $\kappa=2$ . In Panel A, we regress the instrumented ownership on each of the 24 concern subcategories and report the second-stage coefficients that are most affected by having more IO. *Non-representation* measures the diversity of a firm's workforce. If the company has no women on its board of directors or among its senior line managers, it is assigned a score of one in this concern subcategory, and zero otherwise. *Health and safety* assesses the severity of controversies related to employee safety at the firm. If a company has been involved in legal cases or fines for unsafe workplace accidents, or been criticized by other observers, it is assigned a score of one in this concern subcategory, and zero otherwise. *Ozone depleting chemicals* identifies whether a company is among the top manufacturers of ozone depleting chemicals such as HCFCs, methyl chloroform, methylene chloride, or bromines. If yes, it is assigned a score of one in this concern subcategory, and zero otherwise. *Climate change* assesses the severity of controversies related to a firm's climate change and energy-related policies and initiatives. If a firm has had accidents involving greenhouse gas (GHG) emissions, resisted the implementation of improved practices, or been criticized by other observers, it is assigned a score of one in this subcategory, and zero otherwise. *Marketing/Contracting* assesses the severity of controversies related to a firm's marketing and advertising practices. If a firm has had accidents due to false, discriminatory, or improper marketing/advertising or been criticized by other observers, it is assigned a score of one in this concern issue, and zero otherwise. *Other product concerns* assesses customer-related controversies that are not covered by other concern issues in the product dimension. In Panel B, we regress the instrumented ownership on each of the 29 strengths subcategories and report the second-stage coefficients that are most affected by having more IO. *Health and safety* identifies whether a company has strong employee health and safety programs. *Recycling* assesses whether a firm proactively complies with regulations related to recycling of packaging materials. *R&D/Innovation* identifies whether a company is a leader in its industry for R&D, particularly by bringing innovative products to market. All of the regressions are controlled for industry and year fixed effects. The control variables include *Size* rank in its polynomial form, *Leverage*, *ROA*, *M/B*, *Cash holdings*, *Advertising*, *R&D intensity*, *Sale growth*, *Dividends*, *BoardIndep*, *AnaCov*, *8-KFilingNum*, and *JuneReturn*. *FloatAdj* is the difference between the rank implied by the end-of-May market capitalization and the actual rank assigned by Russell in June. Standard errors are clustered at the firm level and reported in parentheses. Definitions for all of the variables are provided in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

KLD database is that it provides richly detailed information of each CSR subcategory. Table 5 reports the second-stage coefficients of the 24 concern and 29 strength subcategories that are most affected by increased institutional ownership.

Panel A shows that only certain concern issues—those that are associated with risks of lawsuits or regulatory

penalties—are relevant when institutional ownership is increased. The first concern issue *Non-representation* belongs to the *Diversity* dimension, which measures the diversity of a firm's workforce. The concern is the risk of gender discrimination, which institutional investors wish to avoid. The *Health and safety* concern belongs to the *Employee* dimension, which assesses the severity of controversies re-

lated to the workplace safety of a firm's employees. The *Ozone depleting chemicals* and *Climate change* concerns belong to the *Environment* dimension and assess the severity of controversies related to a firm's compliance with environmental regulations. The US Environmental Protection Agency (EPA) identifies a firm's environmental problems according to local complaints and random on-site inspections. If institutional shareholders push a company to reduce environmental violations, the company is more likely to pass EPA's inspections and avoid potential lawsuits and significant penalties. The concerns of *Marketing/Contracting* and *Other product concerns* belong to the *Product* dimension. They assess the severity of controversies related to a firm's marketing and advertising practices and other customer-related controversies. Generally speaking, the concerns most sensitive to institutional ownership can be improved within a relatively short time (e.g., workplace accidents can be reduced in a timely manner by investing in health and safety measures.).

Other concerns that are marginally significantly affected by increased ownership include *Retirement benefits concern*, which assigns a score of one to a company if it has either a substantially underfunded defined benefit pension plan or an inadequate retirement benefits program; and *Regulatory problems*, which assigns a score of one to a company if it has paid fines or civil penalties for violations of air, water, or other environmental regulations. For brevity, the results are not tabulated in the paper.

Panel B presents the strength issues that are most affected by increased institutional ownership. It shows that institutional ownership significantly increases the following three strength subcategories: *Health and safety*, which identifies whether a company has strong employee health and safety programs; *Recycling*, which assesses whether a firm proactively complies with regulations related to the recycling of packaging materials; and *R&D/Innovation*, which identifies whether a company is an R&D leader in its industry, particularly whether it brings innovative products to market. The results suggest that institutional shareholders only encourage the implementation of certain aspects of positive CSR policies (e.g., those that achieve a safer workplace, increase compliance with environmental regulations to reduce penalties, and increase R&D investments in potentially new products to increase sales), probably because investing in positive CSR policies is costly and the expected benefits usually fall short of the costs (see, Margolis et al., 2009 for a review).

Besides the positive effect of institutional ownership on the above CSR strength subcategories, in untabulated tests, we also find that increased ownership is marginally negatively associated with two strength issues in the *Community* dimension that mainly measure the generosity of a firm's charitable giving. These results are consistent with Krüger (2015), who finds that the average abnormal returns upon announcement of positive CSR news are negative, especially for community-related issues, as such initiatives often reflect agency problems (Masulis and Reza, 2015).

In sum, the analyses of the CSR subcategories suggest that increased ownership mainly reduces the negative CSR issues that might lead to lawsuits or regulatory penalties

and which can be addressed relatively quickly. Similarly, higher ownership tends to increase positive CSR policies related to increasing compliance with environmental regulations or improving R&D.

### 3.7. Robustness tests

As discussed in related literature, there are multiple ways to explore Russell Index reconstitutions. We provide evidence that our main results hold in various sensitivity tests. The results for this section are not tabulated for brevity but can be found in the online Internet Appendix. First, using placebo thresholds of 500, 800, 1200, and 1500, we find no significant ownership jumps in any of these tests. We also test whether the causal effect of institutional ownership on CSR performance is robust under different model specifications.<sup>16</sup> We conduct the two-stage IV estimation method based on Appel et al. (2016) and find that our results do not change qualitatively under the alternative model specification.

### 3.8. Effects of different types of ownership: further evidence

In this section, we investigate whether different ownership types have different motives for influencing portfolio firms' CSR policies. As CSR could help mitigate negative externalities, such as regulatory penalties or law suits, and usually generate long-term benefits, we argue that institutions with market portfolios and long-term investment horizons have higher incentives to push for improved social impact outcomes. We use three measures for these institutional investors: quasi-indexers, passive mutual funds, and pension funds and endowments of universities and foundations (P&E).

Specifically, we first use the approach defined in Bushee (2001) to classify quasi-indexers as those with low turnover and high diversification. Second, we flag a fund as passively managed if its fund name includes a string that identifies it as an index fund or if the CRSP Mutual Fund Database classifies the fund as an index fund, following Appel et al. (2016). Third, we classify pension funds and endowments (P&E) by keywords in the fund names including "employee," "pension," "teacher," "public," "institute," and "college."<sup>17</sup> We empirically test which types of shareholder ownership drive the improvements in portfolio firms' CSR performance using Eq. (1) and Eq. (2). Consistent with our hypotheses, we find that institutions with market portfolios and long-term investment horizons are the main force to drive CSR improvements, as quasi-index funds, passive mutual funds, and P&Es all have significant effects on portfolio firms' CSR policies. The results for this section are not tabulated for brevity but can be found in the online Internet Appendix.

<sup>16</sup> We further find that institutional ownership has more pronounced effect in portfolio firms whose initial CSR ratings are lower than their industry average, and this result is mainly driven by the reduction in concerns.

<sup>17</sup> We test the effect of P&E for two reasons. First, according to Bushee (2001) about 74% of the institution-years of the P&Es belong to quasi-indexers. Second, P&Es have social norm effects and tend to avoid sin stocks (Hong and Kacperczyk, 2009).

In addition, SRI funds are widely recognized as ESG activist institutions and are expected to push firms to adopt more socially responsible policies. In untabulated tests, we identify SRI mutual funds using biennial reports of the Social Investment Forum,<sup>18</sup> and we find results consistent with the literature.

#### 4. Shareholder attention and CSR

The above analysis consistently shows that firms with more institutional holdings invest more in CSR activities. In this section, we examine whether the concentration of shareholder attention affects CSR given a fixed level of their ownership in the firms.

##### 4.1. Identification strategy

Like institutional ownership, shareholder attention is likely endogenous to our variables of interest. It is possible that firms with certain characteristics might both attract monitoring attention and engage in CSR activities. To cope with this concern, we adopt a natural experiment that measures exogenous shocks to shareholder attention to a particular firm.

We construct our shareholder attention measure following Kempf et al. (2017) and use an inverse firm-level measure of monitoring intensity, i.e., *Distraction*, to represent it. First, we use exogenous shocks to unrelated industries held by a given firm's institutional shareholders to identify time periods during which shareholders are likely to be distracted and shift their attention away from the focal firm. We define an industry shock if it has the highest or lowest return across all Fama-French 12 industries in a given quarter. Then we construct firm-level distraction measures by aggregating the distraction measures across all of the institutional investors for each firm. Finally, we calculate an average to get an annual measure for each firm. Higher *Distraction* implies higher levels of attention distracted from shareholders and lower levels of monitoring intensity.

The measure is based on the intuition that a given institutional investor  $j$  in a firm  $i$  is more likely distracted if an attention-grabbing event is occurring in an unrelated industry and if that unrelated industry is important in that given investor  $j$ 's holding portfolio. Specifically, we first define *Distraction* for each firm  $i$  and quarter  $q$  as

$$Distraction_{i,q} = \sum_{j \in I_{q-1}} \sum_{Ind \neq Ind_i} w_{i,j,q-1} \times w_{j,q-1}^{Ind} \times IndShock_q^{Ind}, \quad (4)$$

where  $I_{q-1}$  refers to the set of firm  $i$ 's institutional investors at the end of quarter  $q-1$ , and  $Ind_i$  denotes firm  $i$ 's Fama-French 12 industry.  $IndShock_q^{Ind}$  is a dummy variable,

which is equal to one if a distracting event occurs in an industry  $Ind$  other than  $Ind_i$ , and zero otherwise. We define a distracting event if an industry has the highest or lowest return across all 12 Fama-French industries in a given quarter.  $w_{i,j,q-1}$  and  $w_{j,q-1}^{Ind}$  are two weight variables, with  $w_{i,j,q-1}$  measuring how important investor  $j$  is to firm  $i$  and  $w_{j,q-1}^{Ind}$  capturing how important the shocked industry is to investor  $i$ . Specifically,  $w_{j,q-1}^{Ind}$  is calculated as the weight of industry  $Ind$  (the shock industry) in the total portfolio holdings of investor  $j$ .  $w_{i,j,q-1}$  is the weight used to aggregate investors to get a firm-level distraction measure, which captures both the proportion of investor  $j$ 's holding in firm  $i$  (%Own) and the weight of firm  $i$  in investor  $j$ 's portfolio (%Portfolio). We follow Kempf et al. (2017) and sort all of the stocks held by investor  $i$  by %Own into quintiles (denoted  $Q\%Own$ ) and sort firm  $i$ 's institutional shareholders by %Portfolio into quintiles (denoted  $Q\%Portfolio$ ) to minimize measurement error. We also standardize the data to make the weights add up to one. To be more specific, this weight is calculated as follows:

$$w_{i,j,q-1} = \frac{Q\%Own + Q\%Portfolio}{\sum_{j \in I_{q-1}} (Q\%Own + Q\%Portfolio)}. \quad (5)$$

As can be seen from the calculation procedure, the distraction measure has a higher value if 1) exogenous shocks occur in other industries, 2) the shocked industry is important in the investor's holdings, and 3) distracted investors are important monitors of the focal firm. Therefore, a higher value of *Distraction* indicates lower levels of monitoring intensity. We then take the average of the quarterly measure to get an annual measure of distraction for each firm.

The summary statistics are reported in Panel C of Table 1. We start our sample in 1991, the first year for which KLD data is available, and we obtain 28,020 firm-year observations. We find that an average firm has a *Distraction* measure of 0.163, which is in line with Kempf et al. (2017). We find that the mean value of total assets is 7.352 million. We also find that the mean ROA and the mean market-to-book ratio are 0.113 and 2.013, respectively. About 16.6% of the total assets are cash and short-term investments, and an average firm has 22.4% debt in its assets. We further find that, on average, institutional ownership is about 65.3%. The significant level of institutional ownership in a typical firm highlights the important monitoring role of institutional investors. In untabulated analysis, we further divide the sample into high and low distraction subsamples according to the median value of *Distraction* for each industry (the results are available in the online Internet Appendix).<sup>19</sup> We find that firms in the high distraction subsample have similar institutional ownership, firm size, leverage ratio, ROA, and advertising expenses as firms in the low distraction subsample. Low distraction firms have slightly higher M/B, cash holdings, sales growth, and dividends payouts. This also highlights the importance of controlling for these factors and firm fixed effects as well in our regression model, as detailed in the

<sup>18</sup> Most SRI funds are actively managed, and the Russell reconstitution does not force these investors to mechanically alter their portfolio allocation. However, to the extent that these investors evaluate their performance using the Russell Index as the benchmark, the shock can increase the probability that these investors hold firms with larger relative weights (Boon and White, 2015).

<sup>19</sup> This is because industry is a first-order determinant of CSR.

**Table 6**

Shareholder attention and CSR: baseline results.

	Dependent variable					
	CSR (1)	Strengths (2)	Concerns (3)	CSR (4)	Strengths (5)	Concerns (6)
Distraction	−8.983*** (1.737)	−4.645*** (1.535)	4.577*** (1.177)	−16.169*** (1.871)	−14.131*** (1.493)	2.267** (1.096)
IO	0.005 (0.084)	−0.227*** (0.074)	−0.201*** (0.054)	−0.184 (0.122)	−0.327*** (0.109)	−0.104 (0.078)
Size	0.129*** (0.032)	0.747*** (0.033)	0.588*** (0.022)	−0.123* (0.065)	0.175*** (0.054)	0.285*** (0.041)
M/B	0.099*** (0.022)	0.139*** (0.020)	0.036*** (0.014)	−0.001 (0.021)	−0.003 (0.018)	−0.000 (0.012)
Leverage	−0.525*** (0.149)	−0.844*** (0.130)	−0.274*** (0.100)	0.026 (0.175)	0.081 (0.150)	0.031 (0.114)
ROA	1.396*** (0.250)	0.892*** (0.221)	−0.565*** (0.161)	0.412* (0.243)	0.077 (0.195)	−0.403** (0.165)
Cash holdings	0.016 (0.164)	0.514*** (0.141)	0.445*** (0.104)	0.175 (0.177)	0.416*** (0.154)	0.180 (0.114)
Advertising	7.017*** (1.320)	6.625*** (1.167)	−0.537 (0.690)	−0.026 (1.560)	0.761 (1.431)	0.140 (0.899)
R&D intensity	2.191*** (0.555)	3.417*** (0.481)	0.976*** (0.326)	−0.615 (0.689)	−0.090 (0.573)	0.399 (0.407)
Sales growth	−0.152* (0.085)	−0.335*** (0.078)	−0.190*** (0.052)	0.228*** (0.069)	0.035 (0.054)	−0.182*** (0.044)
Dividend	0.347*** (0.072)	0.301*** (0.063)	−0.048 (0.044)	0.206** (0.095)	0.161** (0.078)	−0.062 (0.057)
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	No	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.131	0.313	0.364	0.556	0.695	0.666
Obs.	28,020	28,020	28,020	28,020	28,020	28,020

This table presents the results of the analysis of the effect of shareholder attention on firms' CSR performance. The primary sample is drawn from the MSCI ESG KLD database for the 1991–2012 period. It reports the baseline regression results. The dependent variables are *CSR*, *Strengths*, and *Concerns*. We use an inverse measure of monitoring intensity, i.e., *Distraction*, which is the weighted average exposure of firm shareholders to the shock industries. First, we use exogenous shocks to the unrelated industries held by a given firm's institutional shareholders to identify the time periods during which shareholders are likely to be distracted and shift their attention away from the focal firm. We define an industry shock if the industry has the highest or lowest return across all Fama-French 12 industries in a given quarter. Then we construct firm-level distraction measures by aggregating distraction measures across all of the institutional investors for each firm. Finally, we calculate an average to get an annual measure for each firm. Higher *Distraction* implies higher levels of attention distracted from shareholders and lower levels of monitoring intensity. Institutional ownership is the fraction of the firm's stock owned by institutional investors. All of the other variables are defined in Appendix A. Heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

next section. This is consistent with our empirical setting, as we are more interested in the within firm (time series) effects where we can explore the effect of monitoring intensity on CSR when shareholders' attention is distracted away for a particular firm given a fixed level of institutional ownership, rather than cross-firm variations.

#### 4.2. Shareholder attention and CSR: baseline results

In this section, we examine the effect of shareholder attention on CSR performance by running multivariate regressions. We first construct the following model:

$$CSR_{i,t} = \alpha + \beta_1 Distraction_{i,t-1} + \beta_2 IO_{i,t} + \beta_3 X_{i,t} + u_i + v_t + \xi_{i,t}, \quad (6)$$

where  $CSR_{i,t}$  is our measure of CSR performance. As in the previous section, we use three main measures of CSR performance: 1) total CSR score (*CSR*), 2) *Strengths*, and 3) *Concerns*. *Distraction* is the inverse measure of shareholder at-

tention and monitoring intensity.<sup>20</sup>  $IO$  is the level of institutional ownership.  $X_{i,t}$  includes a set of time-varying firm characteristics as controls, including *Size*, *Leverage*, *ROA*, *M/B*, *Cash holdings*, *Advertising*, *Sales growth*, *R&D intensity*, and *Dividends*.  $u_i$  and  $v_t$  represent industry (or firm) and year fixed effects, respectively, which are included to resolve the concern that the results are driven by different industries (or firm) or sector-related changes in CSR.

As *Distraction* is an inverse measure of monitoring intensity, a statistically significant and negative (positive)  $\beta_1$  for *CSR* or *Strengths* (*Concerns*) indicates a positive effect of monitoring intensity on firms' CSR performance. We report our baseline regression results in Table 6.

In Columns (1)–(3) of Table 6, we include Industry × Year fixed effects following Kempf et al. (2017). As ex-

<sup>20</sup> We lag distraction by one year, as in the construction of the measure the weights are based on the last quarter information, which could possibly distort the findings. In untabulated results, we find qualitatively similar results if we do not lag the distraction measure.



**Table 7**  
Shareholder attention and CSR: analysis of CSR dimensions.

	Dependent variable				
	Com (1)	Div (2)	Emp (3)	Env (4)	Pro (5)
Distraction	−1.503*** (0.383)	−5.727*** (0.703)	0.069 (0.596)	−8.573*** (0.744)	−0.682** (0.295)
Controls	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.607	0.686	0.481	0.494	0.500
Obs.	28,020	28,020	28,020	28,020	28,020

This table presents the results of the analysis of the effect of shareholder distraction on firms' CSR performance, for each of the five dimensions of CSR: community (*Com*), diversity (*Div*), employee relations (*Emp*), environment (*Env*), and product quality (*Pro*). The primary sample is drawn from the MSCI ESG KLD database for the 1991 to 2012 period. We use an inverse measure of monitoring intensity, i.e., *Distraction*, which is the weighted average exposure of firm shareholders to the shocked industries. First, we use exogenous shocks to the unrelated industries held by a given firm's institutional shareholders to identify the time periods during which shareholders are likely to be distracted and shift their attention away from the focal firm. We define an industry shock if the industry has the highest or lowest return across all Fama–French 12 industries in a given quarter. Then we construct firm-level distraction measures by aggregating distraction measures across all of the institutional investors for each firm. Finally, we calculate an average to get an annual measure for each firm. Higher *Distraction* implies higher levels of attention distracted from shareholders and lower levels of monitoring intensity. The control variables include *Size*, *Leverage*, *ROA*, *M/B*, *Cash holdings*, *Advertising*, *R&D intensity*, *Sale growth*, and *Dividends* and are defined in Appendix A. Heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

pected, we find a negative and significant  $\beta_1$  for *CSR* and *Strengths* and a positive and significant  $\beta_1$  for *Concerns*. The results are all significant at the 1% level. Taking Column (1) as an example, a decrease of one standard deviation in *Distraction* results in a  $0.404 (=8.983 \times 0.045)$  increase in a firm's CSR score, which is 17% of one standard deviation of CSR. The result is therefore both statistically and economically significant. We further add firm fixed effects together with *Industry × Year* in Columns (4)–(6), and our results remain robust. The economic magnitudes are even larger, nearly doubling the results in terms of CSR.

#### 4.3. Shareholder attention and dimensions of CSR performance

To better understand what aspects of CSR issues are most affected by shareholder attention, we extend the baseline specification to separately study the effect of attention distraction on the five different dimensions of CSR activities. Specifically, we use the five dimensions of CSR activities instead of the total CSR score in the regressions. We report the results in Table 7.

As can be seen from Table 7, *Distraction* negatively affects *Community*, *Diversity*, *Environment*, and *Product*, suggesting that as shareholder attention increases, firms tend to invest more in these four dimensions.

#### 4.4. Cross-sectional tests: corporate governance

So far, we have obtained supporting evidence that the intensity of institutional investors' monitoring positively affects firms' CSR performance. In this section, we exam-

ine the possible reasons that corporate managers decrease CSR investments when shareholder monitoring decreases due to distraction. Prior research suggests that CSR spending represents a significant expense, and its benefits are usually only visible in the long run (see, e.g., Deng et al., 2013; Edmans, 2011); its immediate effect is to reduce interim profits. If such investments do not pay out for purely stochastic reasons, managers risk being fired. As a result, managers may be reluctant to invest in CSR due to career concerns. We hypothesize that the effect is more pronounced in firms with inferior corporate governance when managers' interests are not well aligned with shareholders' interests and they have inadequate incentives to act in the shareholders' interest.

We empirically test this prediction. Specifically, we use board independence (*BoardIndep*), E-index, executive incentive compensation, and analyst coverage (*AnaCov*) to measure the quality of corporate governance. If a firm's *BoardIndep*, executive incentive compensation, or *AnaCov* are in the bottom tercile of the sample, or E-index is in the top tercile of the sample, the firm has a low level of corporate governance; otherwise, if top (bottom) tercile for *AnaCov*, *BoardIndep*, executive incentive compensation (E-index), it has a high level of corporate governance. We estimate Eq. (6) for the two subsamples. We find that the negative impact of shareholder distraction on CSR performance is indeed stronger in the subsample of firms with weaker corporate governance. We further test the equality of the estimated coefficients in the two types of subsamples using the Wald tests and find that they are also statistically different. The results for this section are not tabulated for brevity but can be found in the online Internet Appendix.

#### 4.5. Alternative measures of shareholder attention

In this section, we use three alternative measures of shareholder attention by exploring institutional investors' recent performance, fund outflow and voting behavior. The first measure is based on the weighted average of the past six-month performance of the institutional investors who hold the shares of the firm, with the weight being each investor's fraction of holding shares of the firm. We measure investors' performance using [Carhart's \(1997\)](#) four-factor abnormal returns. We obtain the institutional investors' monthly total return data from the CRSP Mutual Fund Database, at the class shares level. Our data screening process follows [Kacperczyk et al. \(2008\)](#). We aggregate

the assets among different class shares to get the total assets at the portfolio level. The fund monthly return is computed as the weighted average return of different class shares, with the weight being the lagged total net asset. The intuition is that if an institutional investor had bad performance, they might care more about firms' stock performance than about social responsibility. Therefore, a lower value of this measure would indicate a lower level of attention from institutional investors.

The second measure is based on the weighted average of the past six-month fund outflow for the institutional investors who hold the shares of the firm, following [Barber et al. \(2016\)](#). Specifically, for each fund, we subtract the end-of-period total net asset (TNA) from the before-

**Table 8**

Shareholder attention and CSR: alternative measures of attention.

	Dependent variable								
	Attention based on past 6-m fund performance			Attention based on past 6-m fund outflow			Attention based on recent decline in shareholder participation in voting		
	CSR (1)	Strengths (2)	Concerns (3)	CSR (4)	Strengths (5)	Concerns (6)	CSR (7)	Strengths (8)	Concerns (9)
Attention	0.611*** (0.150)	0.460*** (0.111)	-0.177* (0.100)	-0.849*** (0.219)	-0.637*** (0.176)	0.272* (0.143)	-0.220*** (0.021)	-0.165*** (0.017)	0.066*** (0.013)
IO	-0.181 (0.123)	-0.333*** (0.110)	-0.116 (0.078)	-0.184 (0.123)	-0.339*** (0.110)	-0.119 (0.078)	-0.191 (0.125)	-0.189* (0.102)	0.007 (0.084)
Size	-0.114* (0.066)	0.182*** (0.055)	0.284*** (0.042)	-0.113* (0.066)	0.183*** (0.055)	0.283*** (0.042)	-0.020 (0.067)	0.151*** (0.052)	0.186*** (0.044)
M/B	-0.006 (0.021)	-0.006 (0.018)	0.001 (0.012)	-0.006 (0.021)	-0.006 (0.018)	0.001 (0.012)	-0.004 (0.021)	-0.008 (0.017)	0.000 (0.014)
Leverage	0.056 (0.177)	0.103 (0.151)	0.022 (0.115)	0.043 (0.178)	0.092 (0.152)	0.024 (0.115)	-0.012 (0.181)	0.135 (0.130)	0.085 (0.119)
ROA	0.456* (0.246)	0.117 (0.198)	-0.415** (0.167)	0.435* (0.246)	0.100 (0.198)	-0.410** (0.167)	0.255 (0.245)	0.011 (0.169)	-0.286* (0.171)
Cash holdings	0.175 (0.178)	0.412*** (0.155)	0.176 (0.114)	0.170 (0.178)	0.403*** (0.154)	0.172 (0.114)	0.272 (0.191)	0.347** (0.140)	0.032 (0.126)
Advertising	0.183 (1.578)	0.926 (1.448)	0.108 (0.903)	0.280 (1.573)	0.985 (1.446)	0.062 (0.898)	-0.283 (1.932)	1.137 (1.582)	1.220 (1.277)
R&D intensity	-0.657 (0.698)	-0.061 (0.578)	0.459 (0.410)	-0.672 (0.700)	-0.064 (0.578)	0.470 (0.411)	-0.430 (0.587)	-0.471 (0.433)	0.071 (0.377)
Sales growth	0.208*** (0.069)	0.014 (0.055)	-0.182*** (0.045)	0.213*** (0.069)	0.016 (0.055)	-0.185*** (0.045)	0.178** (0.073)	0.059 (0.053)	-0.120** (0.048)
Dividend	0.211** (0.095)	0.167** (0.078)	-0.062 (0.057)	0.208** (0.095)	0.163** (0.078)	-0.063 (0.057)	0.080 (0.092)	0.059 (0.067)	-0.031 (0.064)
Industry × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R <sup>2</sup>	0.554	0.694	0.667	0.555	0.695	0.667	0.600	0.772	0.702
Obs.	27,899	27,899	27,899	27,810	27,810	27,810	17,741	17,741	17,741

This table presents the results of the analysis of the effect of shareholder attention on firms' CSR performance, using alternative measures of attention. The primary sample is drawn from the MSCI ESG KLD database for the 1991–2012 period. The dependent variables are CSR, *Strengths*, and *Concerns*. We use three alternative measures of attention. The first is based on the weighted average of the past six-month performance of the institutional investors who hold the shares of the firm. We measure funds' performance using [Carhart's \(1997\)](#) four-factor abnormal returns. A lower value of this measure indicates lower levels of attention from the firm's institutional investors. The second measure, following [Barber et al. \(2016\)](#), is based on the weighted average of the past six-month fund outflow of the funds that hold the shares of the firm. Specifically, for each fund, we subtract end-of-period TNA from before-the-period TNA multiplied by (1 + return) to get the cash flow of the mutual fund during the six-month period; we only consider funds that have net cash outflows. The return is the compounded return during the period. To be able to compare different funds, we scale the difference by the before-the-period TNA to get a percentage value. A higher value of this measure means less attention from the firm's institutional investors. We look at shareholder voting behavior to construct the third alternative measure, which is based on the recent percentage decline in the weighted average of the funds' likelihood of participation in shareholder voting for all the institutional investors who hold the shares of the firm, with the weight being each fund's proportion of firms' equity. We use the increase in non-participation rate to capture the decline in the likelihood of participation in voting. Specifically, for each year we first calculate the non-participation rate for each mutual fund in the entire shareholder voting of the firm. We then aggregate to the firm level based on each fund's weight of the firm's shares. Finally, we take the annual difference to measure the recent decline in voting participation (%). The sample is restricted to the 2004–2012 period due to the availability of voting data. We hand match mutual fund voting data with Thomson Reuters Mutual Funds Holding S12 and 13F data by fund names. This is a direct measure of institutional investors' distraction to the firm, reflected in their recent decline in participation in shareholder voting. A higher value of the measure indicates less attention from institutional investors. All of the other variables are defined in [Appendix A](#). Heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. \*, \*\*, and \*\*\* represent statistical significance at the 10%, 5%, and 1% levels, respectively.

the-period TNA multiplied by  $(1 + \text{return})$  to determine the cash flow to the mutual fund during the six-month period. We focus on funds that have net cash outflow in the past six months. The return is the compounded return during the period. To be able to compare the different funds, we scale the difference by the before-the-period TNA to get a percentage value. The fund flow data are from the CRSP Mutual Fund Database. The intuition is that if mutual funds have greater outflows, their attention might focus more on their investors rather than on their holdings.<sup>21</sup> Therefore, a higher value of this measure means a lower level of attention from institutional investors.

We look at shareholder voting behavior to construct the third alternative measure, which is based on the recent decline in the weighted average of the funds' likelihood of participation in shareholder voting for all the institutional investors who hold the shares of the firm, with the weight being each fund's proportion of firms' equity. We use the increase in non-participation rate to capture the decline in the likelihood of participation in voting. Specifically, for each year we first calculate the non-participation rate for each mutual fund in the entire shareholder voting of the firm. We then aggregate it to the firm level based on each fund's weight of the firm's shares. Finally, we take the annual difference to measure the recent decline in voting participation (%). The voting data come from the ISS Voting Analytics Database. The sample is restricted to the 2004–2012 period due to the availability of the voting data. We hand match mutual fund voting data with Thomson Reuters Mutual Funds Holding S12 and 13F data by fund names. This is a direct measure of institutional investors' distraction to the firm, reflected in their recent decline in participation in shareholder voting. A higher value of the measure indicates less attention from institutional investors.

We replace these three alternative measures of shareholder attention in regression Eq. (6). We present the results in Table 8.<sup>22</sup> Columns (1)–(3) show the results using the first alternative measure based on past six-month fund performance. We find that a higher level of shareholder attention translates into a significantly better CSR performance in terms of *CSR*, *Strengths* and *Concerns*. Columns (4)–(6) use the second alternative measure based on past six-month fund outflows, while columns (7)–(9) use the third alternative measure based on recent decline in voting participation. While these two measures are negatively correlated with shareholder attention, we find a positive effect of shareholder attention on CSR performance in terms of *CSR* and *Strengths* and a negative effect on *Concerns*.

Overall, the results of the analyses using alternative measures of shareholder attention provide further support to our hypothesis that firms with more concentrated shareholder attention invest more in CSR activities.

<sup>21</sup> Edmans et al. (2012) show that flow-driven equity price changes can affect takeover probability.

<sup>22</sup> Instead of all the institutional shareholders, we also try focusing on the top ten largest shareholders of the firm to construct the three alternative measures of shareholder attention, and the results are qualitatively similar.

## 5. SRI shareholder proposal: the monitoring channel

If institutional shareholders exert effort to improve their portfolio firms' CSR activities, we should observe that both higher ownership and monitoring intensity by institutions would lead to an increase in CSR shareholder proposals. McCahery et al. (2016) survey 143 institutional investors and find that socially "irresponsible" corporate behavior is considered by 72% of the respondents as very important triggers of shareholder activism. Flammer (2015) finds that CSR proposals can improve firm value. The use of "voice" or the mere threat of voting can increase shareholders' influence over firm policies. To verify this potential channel, we collect data from the ISS Risk Metrics Shareholder Proposal and Vote Results database.

**Table 9**

Evidence on the monitoring channel of shareholder activism.

Panel A. IO and SRI proposals		
	(1) SRI	(2) Prob. (SRI)
$D_{i,t}$	0.060* (0.033)	0.055* (0.031)
Controls	Yes	Yes
FloatAdj.	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Adj. $R^2$	0.032	0.034
Obs.	1631	1631
Panel B. Monitoring intensity and SRI proposals		
	SRI	Prob. (SRI)
Distraction	-1.895*** (0.611)	-1.349*** (0.475)
Controls	Yes	Yes
Industry $\times$ Year FE	Yes	Yes
Firm FE	Yes	Yes
Adj. $R^2$	0.388	0.309
Obs.	15,795	15,795

This table presents the analysis of the effects of CSR activism. Panel A reports the regression discontinuity tests of SRI proposals around the 1000/2000 threshold by controlling for industry and year fixed effects in the 2003–2006 period, using bandwidths of  $\pm 250$  and polynomial order  $\kappa=2$ . The control variables include *Size* rank in its polynomial form, *Leverage*, *ROA*, *M/B*, *Cash holdings*, *Advertising*, *R&D intensity*, *Sale growth*, *Dividends*, *BoardIndep*, *AnaCov*, *8-KFilingNum*, and *JuneReturn*. *FloatAdj* is the difference between the rank implied by the end-of-May market capitalization and the actual rank assigned by Russell in June. Panel B reports the effect of shareholder distraction on SRI proposals in the 1997–2012 period. We use an inverse measure of monitoring intensity, i.e., *Distraction*, which is the weighted average exposure of firm shareholders to the shocked industries. First, we use exogenous shocks to the unrelated industries held by a given firm's institutional shareholders to identify the time periods during which shareholders are likely to be distracted and shift their attention away from the focal firm. We define an industry shock if the industry has the highest or lowest return across all Fama–French 12 industries in a given quarter. Then we construct firm-level distraction measures by aggregating distraction measures across all of the institutional investors for each firm. Finally, we calculate an average to get an annual measure for each firm. Higher *Distraction* implies higher levels of attention distracted from shareholders and lower levels of monitoring intensity. The control variables include *Size*, *Leverage*, *ROA*, *M/B*, *Cash holdings*, *Sale growth*, *Advertising*, *R&D intensity*, and *Dividends*. Standard errors are clustered at the firm level and reported in parentheses. Definitions for all of the variables are provided in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

We test both the number and probability of SRI shareholder proposals in Table 9. Panel A presents the results of the difference in SRI shareholder proposals between firms around the Russell 1000/2000 threshold. We estimate the following model based on Crane et al. (2016), using a bandwidth of  $\pm 250$  and polynomial order  $\kappa=2$ :

$$SRI(or\ Prob.(SRI))_{i,t} = \alpha + \tau D_{i,t} + f(R_{i,t}) + \beta_1 X_{i,t} + \beta_2 FloatAdj_{i,t} + u_i + v_t + \epsilon_{i,t}, \quad (7)$$

where *SRI* and *Prob. (SRI)* represent the number and probability of SRI proposals, respectively. Our results show that, consistent with our expectation, firms at the top of the Russell 2000 Index tend to receive more SRI proposals from institutional shareholders than firms in the bottom of the Russell 1000 Index. Also, the probability of SRI proposals is higher for firms near the cutoff for the Russell 2000.

In Panel B, we examine the difference in the number and probability of SRI proposals when institutional shareholders exert different degrees of monitoring intensity. Our results show that if institutional shareholders shift their attention to other industries or firms, they tend to initiate fewer SRI proposals, and the probability of initiating proposals is also lower.

Our results on SRI shareholder proposals show that “voice” is an important mechanism through which shareholders push firms to achieve better CSR performances.

## 6. Conclusions

This study investigates whether institutional shareholders can induce corporate managers to invest more in social goodness, as measured by CSR ratings provided by the MSCI ESG KLD database. We exploit the question using two quasi-natural experiments. First, using a random index assignment that takes place on the last trading day of May, we find that a higher level of institutional ownership leads to better CSR ratings. More importantly, we show that institutional shareholders mainly drive improvements in CSR issues that are financially material to firm values. In addition, we find that higher ownership specifically reduces certain negative CSR issues that might lead to lawsuits or regulatory penalties due to gender discrimination, unsafe workplaces, non-compliance with environmental regulations, or improper marketing.

Second, we use exogenous shocks to unrelated industries held by a given firm's institutional shareholders to identify periods during which shareholders are likely to shift attention away from the focal firm. We find that when shareholders are distracted, firms significantly reduce their involvement in socially responsible activities. These results do not change qualitatively when we use three alternative methods to construct investor attention measures based on institutional investors' recent performance, fund outflows, and decline in voting participation. Further, we investigate the underlying mechanism of “voice” and find that shareholders use SRI proposals to increase their influence on CSR investments.

We provide evidence that institutional shareholders affect social impact outcomes and that sustainable goals are not merely an attempt to capitalize on investor demand. Our study contributes to the literature on institutional

shareholders and sustainability issues. We provide comprehensive evidence that institutional investors use both their large stakes and concentrated attention to improve social benefits. The study helps further our understanding of the real effect of sustainable investments, which represent a fast growing and increasingly important segment of financial markets.

## Appendix A. Variable definitions

CSR	Strengths score - concerns score Source: MSCI ESG KLD database
Strengths	The sum of community activities, diversity, employee relations, environmental record, and product quality and safety strengths. Source: MSCI ESG KLD database
Concerns	The sum of community activities, diversity, employee relations, environmental record, and product quality and safety concerns. Source: MSCI ESG KLD database
Community concerns (4)	Investment controversies, community impact, tax disputes, and other concerns. Source: MSCI ESG KLD database
Community strengths (6)	Charitable giving, innovative giving, non-US charitable giving, support for housing, support for education, and other strengths. Source: MSCI ESG KLD database
Diversity concerns (4)	Controversies, non-representation, board diversity, and other concerns. Source: MSCI ESG KLD database
Diversity strengths (8)	CEO, promotion, board of directors, work/life benefits, women & minority contracting, employment of the disabled, gay & lesbian policies, and other strengths. Source: MSCI ESG KLD database
Employee relations concerns (5)	Union relations, health and safety concerns, workforce reductions, retirement benefits concerns, and other concerns. Source: MSCI ESG KLD database
Employee relations strengths (6)	Union relations, cash profit sharing, employee involvement, retirement benefits strengths, health and safety strengths, and other strengths. Source: MSCI ESG KLD database
Environment concerns (7)	Hazardous waste, regulatory problems, ozone depleting chemicals, substantial emissions, agricultural chemicals, climate change, and other concerns. Source: MSCI ESG KLD database
Environment strengths (5)	Beneficial products and services, pollution prevention, recycling, clean energy, and other strengths. Source: MSCI ESG KLD database
Product concerns (4)	Product safety, marketing/contracting, antitrust, and other concerns. Source: MSCI ESG KLD database
Product strengths (4)	Quality, R&D/Innovation, benefits to economically disadvantaged, and other strengths. Source: MSCI ESG KLD database
Institutional ownership	The percentage of common shares held by institutional investors. Source: Spectrum Institutional 13(F) filings
Size	Log of total assets (AT) of a firm. Source: Compustat
Leverage	All debt (DLTT + DLC)/Total assets (AT). Source: Compustat
ROA	ROA is calculated as (OIBDP/AT). Source: Compustat

(continued on next page)



M/B	Market value of assets over book value of assets: $(AT - CEQ + PRCC\_F \cdot CSHO) / AT$ . Source: Compustat	Attention based on past six-m fund performance	The weighted average of the past six-month performance of the institutional investors who hold shares in the firm. We measure funds' performance using Carhart's (1997) four-factor abnormal returns. A lower value of this measure indicates less attention from institutional investors. Source: CRSP Mutual Fund Database, Thomson Reuters Mutual Funds Holding S12 data and CDA/Spectrum Institutional 13(F) filings data
BoardIndep	The percentage of independent directors on the board. Source: ISS (former RiskMetrics)		
Cash holdings	The percentage of current assets over total assets. Source: Compustat		
Advertising	Annual firm dollars spent on advertising (XAD) scaled by total sales (AT). Source: Compustat	Attention based on past six-m fund outflow	The weighted average of the past six-month fund outflow for the funds that hold the focal firm's shares, following Barber et al. (2016). Specifically, for each fund we subtract end-of-period TNA from before-the-period TNA multiplied by $(1 + \text{return})$ to get the cash flow of the mutual fund during the six-month period; we only consider funds that have net cash outflows. The return is the compounded return during the period. To be able to compare different funds, we scale the difference by the before-the-period TNA to get a percentage value. A higher value of this measure means less attention from institutional investors. Source: CRSP Mutual Fund Database, Thomson Reuters Mutual Funds Holding S12 data and CDA/Spectrum Institutional 13(F) filings data
R&D intensity	Annual firm dollars spent on R&D (XRD) scaled by total assets (AT) Source: Compustat		
Sales growth	Change in sales (SALE) scaled by lagged total sales (AT). Source: Compustat		
Dividends	An indicator variable that equals one if the firm has a nonzero dividend (DVC) this year, and zero otherwise. Source: Compustat		
FloatAdj.	The difference between the rank implied by the end-of-May market capitalization and the actual rank assigned by Russell in June. Source: Russell Index and Authors' calculation		
Log (SG&A)	The natural log of selling, general, and administrative (SG&A) expenses. Source: Compustat	Attention based on recent decline in shareholder participation in voting	The recent decline in the weighted average of the funds' likelihood of participation in shareholder voting for all the institutional investors who hold the shares of the firm, with the weight being each fund's proportion of firms' equity. We use the increase in non-participation rate to capture the decline in the likelihood of participation in voting. Specifically, for each year we first calculate the non-participation rate for each mutual fund in the entire shareholder voting of the firm. We then aggregate to the firm level based on each fund's weight of the firm's shares. Finally, we take the annual difference to measure the recent decline in voting participation (%). The sample is restricted to the 2004 to 2012 period due to the availability of voting data. We hand match mutual fund voting data with Thomson Reuters Mutual Funds Holding S12 and 13F data by fund names. This is a direct measure of institutional investors' distraction to the firm, reflected in their recent decline in participation in shareholder voting. A higher value of the measure indicates less attention from institutional investors. Source: ISS Voting Analytics Database, Thomson Reuters Mutual Funds Holding S12 data and CDA/Spectrum Institutional 13(F) filings data
AnaCov	Total number of stock analysts following the firm during the year. Source: I/B/E/S		
8-KFilingNum	The number of 8-K filings in the year. Source: SEC Analytics Suite		
E-index	Index of six shareholder rights introduced by Bebchuk et al. (2009) Source: Bebchuk et al. (2009)		
Executive incentive compensation	Ratio of value of stock option grants to total compensation for top five executives, which is measured by the sum of the Black-Scholes value of stock options granted to the top five executives, divided by the sum of the value of stock options, salary, bonus, other annual compensation, total value of restricted stock granted, long-term incentive payouts, and all other total compensation for the top five executives, in a given fiscal year. Source: ExecuComp		
Distraction	An inverse firm-level measure of monitoring intensity that follows Kempf et al. (2017). First, we use exogenous shocks to the unrelated industries held by a given firm's institutional shareholders to identify time periods during which shareholders are likely to be distracted and shift their attention away from the focal firm. We define an industry shock if the industry has the highest or lowest return across all 12 Fama-French industries in a given quarter. Then we construct firm-level distraction measures by aggregating distraction measures across all of the institutional investors for each firm. Finally, we calculate an average to get an annual measure for each firm. Higher values imply higher levels of attention distracted from shareholders and lower levels of monitoring intensity. Source: Thomson Reuters CDA/Spectrum Institutional 13(F) filings data, CRSP, Compustat		

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