How does Corporate Environmentalism Affect Political Activity?
An Experimental Investigation

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Version: May 2015
Preliminary. Comments welcome!

Abstract
This paper investigates how corporate environmentalism affects the willingness of citizens to mobilize politically and pressure governments to regulate firms. We conducted experiments involving two types of people: environmental activists and members of the mass public. Our experiments presented information about voluntary environmental initiatives by firms, and measured how this information affected support for regulation. We found that voluntary corporate initiatives demobilized both environmental activists and the mass public by dissuading them from calling for stiffer government regulations. To achieve this effect, though, nearly all companies within an industry needed to join the voluntary effort. When only some firms took voluntary action, citizens typically did not back down. Our experiments also show that deep reforms disarmed citizens to a greater degree than shallow reforms, but only if all firms in the industry participated. Hence, the breadth of the participation by companies was more important that the depth of measures that firms took.
1. Introduction

Firms engage in environmental corporate social responsibility (ECSR) when they go beyond the requirements of current environmental law. ECSR can take many forms. Firms can, for example, change their business operations by cutting back on pollution and developing green products that are not mandated by regulations. Firms can also donate money to environmental NGOs and partner with them on green initiatives. Firms may take these steps unilaterally or coordinate with other players in their industry (Prakash and Potoski 2006). Academic research has explored the emergence of ECSR and its efficacy in achieving environmental results (for an overview, see Potoski and Prakash 2013).

Some scholars claim that firms use ECSR as a strategy for averting political conflict. Firms voluntarily over-comply with regulations, it is argued, in an effort to preempt new legislation, avoid stiff enforcement, mollify interest groups, and prevent public protests (Werner 2012; Maxwell, Lyon, and Hacket 2000; Lyon and Maxwell 2004a,b; Manzini and Mariotti 2003). To date, however, there has been no systematic experimental research about whether and under what conditions ECSR forestalls political action against firms.

In this paper we investigate how ECSR affects the willingness of citizens to mobilize politically and pressure governments to regulate firms. We conducted experiments involving two types of people: environmental activists and members of the mass public. Our activist samples included affiliates of the Audubon Society (the second largest environmental organization in the United States) and people who had previously signed an environmental petition demanding government regulations to address climate change. Our mass public sample was supplied by Survey Sampling International, a professional polling firm.
We randomized information about voluntary environmental initiatives by firms and measured how this information affected support for regulation. We found that voluntary corporate initiatives demobilized both environmental activists and the mass public by dissuading them from calling for stiffer government regulations. To achieve this effect, though, nearly all companies within an industry had to join the voluntary effort. If only some firms took voluntary action, citizens typically did not back down. Our experiments also showed that deep reforms disarmed citizens to a greater degree than shallow reforms, but only if all firms in the industry participated. Hence, the breadth of the participation by companies was more important that the depth of measures taken by firms.

The paper is organized as follows. We first present a series of competing theoretical predictions from the literature, motivating our empirical inquiry. We then describe our sampling procedures, experimental design, and statistical model. Finally, we present the results and discuss their implications for understanding the effects of voluntary corporate action on environmental politics.

2. Hypotheses

How does ECSR affect the political preferences, beliefs, and behaviors of citizens in a democracy, particularly those who are passionate about protecting the environment? A longstanding research tradition in political science has argued that government officials are responsive to public opinion (e.g. Stimson, Mackuen, and Erikson 1995), suggesting that mass opinion affects the regulatory environment firms face. Further, political elites may be most attentive to “issue publics” (Krosnick 1990), groups of citizens who are passionate about given issues for which they have well-structured preferences and the motivation to engage in political
activity. Members of issue publics may also serve as opinion leaders within their social networks, influencing the beliefs of citizens who may not be as passionate (Berelson et al. 1954; Huckfeldt and Sprague 1987). Hence, we contend that understanding how environmental activists respond to ECSR is especially important to understanding the efficacy of regulatory preemption strategies undertaken by firms.

It is not obvious how ECSR would affect the willingness of citizens to protest and demand environmental regulations. On the one hand, ECSR could demobilize the public by persuading citizens that environmental problems have been solved, or at least reduced to the point that the marginal costs of lobbying, protesting, and regulating exceed the marginal benefits (Maxwell, Lyon, and Hacket 2000; Lyon and Maxwell 2004a,b). ECSR could also reduce public support for spending on monitoring and enforcement (Maxwell and Decker 2006). Moreover, once firms have invested in technologies that partially solve an environmental problem, citizens may be reluctant to demand stiffer standards that would destroy the value of the firms’ investments.

On the other hand, ECSR could mobilize the mass public. Citizens could interpret ECSR as proof that environmental problems are real and that firms can afford to behave more responsibly. Moreover, some firms might use ECSR as part of an conscious strategy for promoting—rather than avoiding—stiffer regulation. Large firms, in particular, may engage in ECSR and then lobby for government to impose the same standards on other firms. In this way, the voluntary actions of environmental leaders could lead to involuntary regulations against environmental laggards (Denicolò 2008; Urpelainen 2011). Finally, instead of satisfying the environmental demands of citizens, ECSR might raise their aspirations, leading to demands for more action (Bendor et al. 2011).
To arbitrate between these competing perspectives we designed a series of experiments, which we administered to environmental activists and the mass public. In the remaining sections we describe our sampling procedures, experimental design, and findings.

3. Sampling Procedures

We embedded experiments in opinion surveys, which we administered to two samples of environmental activists and one representative sample of ordinary citizens. We obtained the first activist sample in collaboration with Audubon, the second largest environmental organization in the United States. On October 25, 2013, Audubon sent email invitations to a random sample of people who satisfied at least one of the following criteria: they were dues-paying members of Audubon and subscribers to *Audubon* magazine; they had donated money to Audubon in the past; or they had signed up to receive emails alerting them to take political action—such as signing petitions and contacting politicians—on environmental issues.

The invitation explained, “As a member of Audubon’s community, your thoughts and opinions are tremendously valuable to us. In order to better engage supporters like you, we invite you to take a special community survey that we are conducting in collaboration with researchers at Stanford University.” The email contained a link to a web-based survey that we designed to study the effects of voluntary corporate action on political activity. A total of 2,368 Audubon affiliates completed the survey between October 25 and December 9, 2013.

We obtained a second activist sample by cosponsoring an environmental petition on Care2, a social networking website that was founded in 1998 and grew to become one of the most popular hosts for petitions about environmental issues. The petition urged members of Congress to take strong and swift action on climate change. Figure 1 displays the summary page
that appeared on the Care2 website in July 2013, and Figure 2 presents the full text of the petition that visitors had an opportunity to sign. Each signatory typed their name, email address, and mailing address, thereby enabling us to contact them in the future.¹

After harvesting contact information from each signatory, we emailed them on February 2, 2014. Our email explained: “In July, you signed an online petition encouraging Congress to act on climate change. Today, we are contacting you about another issue: fracking.” We then displayed two petitions: one arguing that the U.S. government should ban fracking; the other arguing that the U.S. government should not. We asked whether they preferred the first petition, the second petition, or neither. Viewers who registered an opinion were redirected to an online survey, which invited them to express opinions about other environmental issues. That survey contained our embedded experiments. Of the 10,700 people we emailed, 1,734 (16%) clicked on our email and completed our questionnaire. These people represent our second sample of environmental activists.

¹ Respondents were told that, after signing, they would receive regular communications from Audubon and “may also receive email from Stanford University about an environmental research project.”
I strongly support efforts to reduce industrial carbon pollution from power plants, while at the same time pursuing renewable energy and energy efficiency. We must take these critical steps to reduce greenhouse gas emissions that are causing dangerous climate change.

Already, climate change is producing extreme weather, which is destroying life and property across the country. Last year, Hurricane Sandy left 131 dead, demolished 380,000 homes, and created a storm surge that broke the all-time record in New York Harbor. Wildfires in the U.S. were the largest on record; they destroyed hundreds of homes and millions of acres of land. In 2012, more than 40,000 daily heat records were broken around the country, causing heat-related deaths to rise dramatically. Disease transmitted by food, water and insects are becoming more widespread. Inaction is costing lives and billions of dollars. These problems will only get worse if nothing is done.

Leading climate scientists agree that we need to reduce carbon dioxide, methane and other carbon pollution by 80% by 2050 in order to avoid the worst impacts of climate change. We must act so that we have a planet that supports life for generations to come. Poll after poll shows that a majority of Americans want climate action now.

I urge Congress to take strong and swift steps to significantly reduce carbon pollution.

FIGURE 2. Text of the Environmental Petition
Finally, to investigate whether corporate environmentalism had different effects on ordinary citizens than on environmental activists, we administered experiments to a representative sample of 1,707 adults in the United States. Survey Sampling International, a professional polling firm, provided the respondents, who were interviewed during the first week of April 2014. To further enhance the representativeness of the sample, we constructed poststratification weights to match U.S. census benchmarks for gender, age, education, and race, and to match the Pew Research Center’s benchmarks for political party affiliation (Pew 2015). In this paper we report weighted analyses, but our conclusions remained the same when we ran analyses without weights (see the online appendix).

Before turning to the experiments, we offer some descriptive statistics about our three samples. As expected, the activist and mass samples differed on many demographic dimensions. Table 1 shows that activists were older and more educated than the mass public. They were also more likely to be female and white. Activists also hewed more closely to the left wing of the political spectrum. Approximately 47% of Audubon affiliates and 61% of petition signatories declared themselves as Democrats, whereas only 32% of the mass sample identified with the Democratic party. Likewise, 56% of Audubon affiliates and 78% of petitioners professed to be somewhat or very liberal. Among members of the mass public, the analogous statistic was only 23%.

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2 We weighted to match the marginal distribution for each variable, rather than the joint distribution of all five variables.
**TABLE 1. Demographic Variables, by Sample**

<table>
<thead>
<tr>
<th></th>
<th>Audubon Affiliates</th>
<th>Petition Signatories</th>
<th>Mass Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>63 %</td>
<td>60 %</td>
<td>51 %</td>
</tr>
<tr>
<td>Male</td>
<td>35</td>
<td>40</td>
<td>49</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-44 years</td>
<td>10 %</td>
<td>12 %</td>
<td>47 %</td>
</tr>
<tr>
<td>45-64 years</td>
<td>42</td>
<td>43</td>
<td>35</td>
</tr>
<tr>
<td>65 and over</td>
<td>38</td>
<td>42</td>
<td>18</td>
</tr>
<tr>
<td>Not reported</td>
<td>10</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school or less</td>
<td>7 %</td>
<td>6 %</td>
<td>42 %</td>
</tr>
<tr>
<td>Some college</td>
<td>20</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>College degree</td>
<td>39</td>
<td>34</td>
<td>19</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>34</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>91 %</td>
<td>88 %</td>
<td>79 %</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Latino</td>
<td>2</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Not reported</td>
<td>4</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Political Party</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democrat</td>
<td>47 %</td>
<td>61 %</td>
<td>32 %</td>
</tr>
<tr>
<td>Independent</td>
<td>31</td>
<td>27</td>
<td>39</td>
</tr>
<tr>
<td>Republican</td>
<td>10</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Not reported</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Ideology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very liberal</td>
<td>26 %</td>
<td>48 %</td>
<td>10 %</td>
</tr>
<tr>
<td>Somewhat liberal</td>
<td>30</td>
<td>30</td>
<td>13</td>
</tr>
<tr>
<td>Moderate, middle road</td>
<td>21</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td>Somewhat conservative</td>
<td>13</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Very conservative</td>
<td>5</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Not sure/not reported</td>
<td>5</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

*Note: Sample size was 2,368 for Audubon affiliates; 1,734 for petition signatories; and 1,707 for the mass public. Percentages for race sum to more than 100% because respondents could check more than one racial category.*
As we anticipated, Audubon affiliates and environmental petitioners were extremely active in environmental politics. We asked which of the following seven actions (if any) respondents had taken on an environmental or conservation issue: attended a rally, boycotted a product, contacted a politician, donated money, organized a protest, signed a petition, or volunteered time. As Table 2a shows, a majority of Audubon affiliates and petition signatories had done at least four of the seven activities, and over a quarter had completed at least five. Practically all respondents in these groups had taken at least one concrete action in support of an environmental cause.3

We also measured willingness to express environmental preferences during elections. “About how often do you vote in national elections—that is, for President, Senator, or Representative?” we asked. As Table 2b shows, at least 86% of Audubon affiliates and petition signatories reported voting “every time,” and an additional 8% said “most of the time.”

Finally, we asked, “Generally speaking, when deciding whom to vote for in a national election, how important to you is the candidate’s position on environmental issues?” Among Audubon affiliates, 52% answered that environmental issues were “essential,” and an additional 37% said the environment was a “very important” voting criterion. Petition signatories assigned an even higher political priority to environmental issues: fully 66% regarded the candidate’s environmental stance as essential, and another 29% deemed it very important (Table 2c).

3 Technically, 100% of petition signatories should have answered that they had taken at least one environmental action. In our data, only 99% reported that they had done so.
TABLE 2. Environmental Activism, by Sample

(a) Number of environmental actions

<table>
<thead>
<tr>
<th></th>
<th>Audubon Affiliates</th>
<th>Petition Signatories</th>
<th>Mass Public</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Cumulative</td>
<td>Frequency</td>
</tr>
<tr>
<td>All seven</td>
<td>3 %</td>
<td>3 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Six</td>
<td>10</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Five</td>
<td>15</td>
<td>28</td>
<td>14</td>
</tr>
<tr>
<td>Four</td>
<td>24</td>
<td>52</td>
<td>30</td>
</tr>
<tr>
<td>Three</td>
<td>20</td>
<td>72</td>
<td>22</td>
</tr>
<tr>
<td>Two</td>
<td>14</td>
<td>86</td>
<td>12</td>
</tr>
<tr>
<td>One</td>
<td>9</td>
<td>94</td>
<td>6</td>
</tr>
<tr>
<td>None</td>
<td>5</td>
<td>99</td>
<td>1</td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

(b) Frequency of voter turnout

<table>
<thead>
<tr>
<th></th>
<th>Audubon Affiliates</th>
<th>Petition Signatories</th>
<th>Mass Public</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Cumulative</td>
<td>Frequency</td>
</tr>
<tr>
<td>Every time</td>
<td>86 %</td>
<td>86 %</td>
<td>87 %</td>
</tr>
<tr>
<td>Most of the time</td>
<td>8</td>
<td>93</td>
<td>8</td>
</tr>
<tr>
<td>About half of the time</td>
<td>1</td>
<td>94</td>
<td>1</td>
</tr>
<tr>
<td>Less than half the time</td>
<td>0</td>
<td>95</td>
<td>1</td>
</tr>
<tr>
<td>Rarely or never</td>
<td>3</td>
<td>98</td>
<td>3</td>
</tr>
<tr>
<td>Not sure/not reported</td>
<td>2</td>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>

(c) Importance of environment when voting

<table>
<thead>
<tr>
<th></th>
<th>Audubon Affiliates</th>
<th>Petition Signatories</th>
<th>Mass Public</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Cumulative</td>
<td>Percent</td>
</tr>
<tr>
<td>Essential</td>
<td>51 %</td>
<td>51 %</td>
<td>66 %</td>
</tr>
<tr>
<td>Very important</td>
<td>37</td>
<td>88</td>
<td>29</td>
</tr>
<tr>
<td>Somewhat important</td>
<td>8</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Slightly important</td>
<td>1</td>
<td>97</td>
<td>0</td>
</tr>
<tr>
<td>Not important at all</td>
<td>0</td>
<td>98</td>
<td>0</td>
</tr>
<tr>
<td>Not sure/not reported</td>
<td>2</td>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Panel A shows how many of the following a respondent had done on an environmental issue: attended a rally, boycotted a product, contacted a politician, donated money, organized a protest, signed a petition, or volunteered time. Panel B presents answers to the question, “About how often do you vote in national elections—that is, for President, Senator, or Representative?” Panel C shows answers to the question, “Generally speaking, when deciding whom to vote for in a national election, how important to you is the candidate’s position on environmental issues?” N = 2,368 for Audubon, 1,734 for petition signatories, and 1,707 for the mass public.
Levels of environmental activism were considerably lower among ordinary citizens. Most had not taken any of the seven measures we listed, and only 26% had participated in two or more. Moreover, only half of ordinary citizens reported voting all the time, less than half regarded the environmental stances of politicians as very important, and only 19% indicated that environmental issues were essential to their vote. By administering experiments to all three samples, we tested whether ordinary citizens were more or less responsive to ECSR than people who were deeply engaged in environmental activism.

4. Experimental Design and Statistical Model

We designed survey experiments to investigate whether voluntary environmental action by companies would increase or decrease support for government regulations. Specifically, we asked people whether they would support a policy ($q'$) that would substantially increase environmental regulations on corporations, relative to the status quo ($q$). We then presented scenarios in which firms engaged in a less intense form of self-regulation ($q''$), where $q < q'' < q'$, and investigated how the voluntary corporate initiatives affected support for $q'$.

Our experiments focused on six environmental issues: plastic packing for foods and beverages; labels for genetically modified foods (GMOs); new-generation insecticides called neonicotinoids; bird deaths due to wind turbines; overfishing of bluefin tuna; and fuel efficiency standards for automobiles. In our studies involving environmental activists, each participant was randomly assigned to consider three of the six issues; in our study of the mass public, each participant saw two of the six.

We selected issues on which environmental activists and ordinary citizens might feel ambivalent, favoring regulations for some reasons but opposing regulations for other reasons. We made these conflicting considerations salient by mentioning the pros and cons of government
regulation. For instance, we explained that regulations on wind turbines could reduce bird mortality but could also increase reliance on fossil fuels. On other issues we noted that regulations to ameliorate environmental problems could hurt businesses, make products more expensive, or undermine other humanitarian goals.

For each issue we described the environmental problem without mentioning ECSR and measured support for stiffer government regulations. We then presented hypothetical scenarios in which firms were engaging in ECSR, and we re-measured the same respondents' support for government regulations. The scenarios varied on two dimensions, each with two levels: the breadth of participation by companies within the industry (broad versus narrow), and the depth of the measures that participating firms were taking to protect the environment (deep versus shallow).

We randomized these dimensions independently, resulting in four types of ECSR: broad and deep, broad and shallow, narrow and deep, and narrow and shallow. Each respondent considered two of the four ECSR scenarios. Thus, each respondent expressed their preferences under three conditions: a baseline scenario that did not mention voluntary action, and two of the four conditions in which firms were voluntarily protecting the environment. Figure 3 displays our randomization scheme and the measures we elicited.
Note: After introducing an issue, we measured support for regulation in a baseline scenario that did not mention ECSR. We then assigned the respondent to one of four tracks. Each track measured support for regulation under two distinct scenarios in which firms were engaging in ECSR.

To illustrate these procedures, we describe our protocol for one issue, plastic packaging (the full question wordings for all six issues can be found in Appendix 1). We introduced the issue by explaining, “Some people think the U.S. government should ban plastic containers for prepackaged foods and drinks. They say the production and disposal of plastic containers hurts the environment. Other people think the government should not ban plastic containers for prepackaged foods and drinks. They say a ban would impose high costs on businesses and consumers by significantly increasing the price of food.”

We then asked, “Do you think the government should or should not ban plastic containers for prepackaged foods and drinks?” The response options were should ban, should not ban, or
don’t know. We also administered a follow-up question that measured how strongly respondents felt about their answer: very strongly, somewhat strongly, or not strongly at all. These questions revealed the respondent’s baseline level of support for government regulation. We used the answers to construct a seven-point scale that ranged from 0 (very strongly opposed a ban) to 100 (very strongly supported a ban). Respondents who said “don’t know” were scored at the midpoint, 50.

Next, we randomly presented one of four scenarios in which companies were taking voluntary action to recycle plastic. Thus, respondents read about a situation in which ECSR was either deep or shallow and participation was either broad or narrow. We operationalized ECSR as deep if companies committed to use containers with at least 70 percent recycled content, but shallow if they committed to use only 30 percent recycled content. In scenarios with broad ECSR, all food and beverage manufacturers changed their practices; in scenarios with narrow ECSR, on the other hand, only half of the manufacturers made the shift.

The deep and broad scenario read: “Companies sometimes take voluntary steps to protect the environment; they do more than what the government requires. Suppose that all food and beverage manufacturers voluntarily increase their efforts to recycle plastic, by making sure their plastic containers have at least 70 percent recycled content. If all food and beverage manufacturers make this change without being required by the government, do you think the government should or should not ban plastic containers for prepackaged foods and drinks?” The other scenarios were similar, but we substituted 30 percent for 70 percent, and/or replaced “all manufacturers” with “half of the manufacturers.”

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4 Malhotra, Krosnick and Thomas (2009) have shown that for bipolar constructs it is better to branch people at the endpoints of a survey question than the midpoint, since people had the midpoint have less well-developed attitudes and therefore any discernment likely contributes measurement error.
We analyzed data from the experiment by estimating the following OLS regression model:

\[ Y_i = \alpha + \beta_1 BD_i + \beta_2 BS_i + \beta_3 ND_i + \beta_4 NS_i + \epsilon_i \]  

(1)

where \( i \) indexes respondent-issue observations; \( Y_i \) represents support for environmental regulation on a scale from 0 to 100; \( BD_i, BS_i, ND_i, \) and \( NS_i \) are dummy variables representing the four treatment conditions (broad and deep, broad and shallow, narrow and deep, and narrow and shallow), and \( \epsilon_i \) is a normally distributed stochastic error. For some analyses we pooled data from all respondents and environmental issues; for other analyses, we estimated equation (1) for each issue or category of respondents. As noted earlier, each participant opined on several issues, and on any given issue they answered questions about three scenarios. To correct for the possibility of inter-personal correlation, we clustered standard errors by respondent.

Using equation (1), we estimated the effects of voluntary corporate action on support for regulations. The constant term, \( \alpha \), represented support for government regulations in the baseline condition without ECSR, and the \( \beta \)'s quantified how each type of ECSR changed opinion relative to the baseline. By combining parameters, we were able to estimate conditional effects, as well. The effect of broad ECSR conditional on deep action was \( \beta_1 - \beta_3 \), whereas the effect of broad ECSR conditional on shallow action was \( \beta_2 - \beta_4 \). Likewise, the effect of deep ECSR conditional on broad participation was \( \beta_1 - \beta_2 \), while the effect of deep ECSR conditional on narrow participation was \( \beta_3 - \beta_4 \).
5. Findings

How did voluntary corporate action affect our two samples of environmental activists? Figure 4 presents the effects on Audubon affiliates (the top graph) and petition signatories (the bottom graph) when we pooled all six issues. Within each graph, the first four dots represent the average effects of ECSR on support for regulation, relative to the baseline condition in which no voluntary action was mentioned. The remaining dots summarize the effects of broad CSR conditional on whether corporate efforts were deep or shallow, and the effects of deep CSR conditional on whether corporate efforts were broad or narrow. In these plots and all others, the thin horizontal lines represent 95% confidence intervals.

We found that voluntary corporate action demobilized Audubon affiliates, especially when a broad swath of the industry participated. Broad and deep ECSR reduced support for regulations by 20 points, a substantively large change relative to the baseline of 69 points when no corporate action was mentioned. Broad but shallow actions were also consequential; they depressed support for regulations by 14 points, on average, across the six issues in our experiment.

When only half the firms in an industry participated, the effects of ECSR on Audubon affiliates were far more modest. Enthusiasm for regulations fell by only 3 points when firms engaged in narrow and deep CSR, and dropped by only 2 points when firms undertook narrow and shallow CSR. Although both effects were statistically significant, owing to the large sample, they represented substantively small movements on our 100-point scale. Overall, Audubon affiliates were far more willing to relax their regulatory demands when all firms participated in the environmental effort, than when only half undertook voluntary environmental initiatives.
FIGURE 4: Effects of CSR on Environmental Activists

Note: Effects are defined as changes in support for regulations, relative to a baseline score when no CSR was mentioned. The baseline score was 69 for Audubon affiliates and 76 for petition signers. The Audubon graph is based on 21,161 observations, and the petitioners’ graph is based on 15,536 observations, distributed equally across the same six issues.
Our interviews with Audubon affiliates further revealed that the effects of breadth depended on depth. When firms in an industry were taking deep voluntary action, support for regulation was 17 points lower if all firms joined than if only half did. When voluntary action was shallow, however, breadth proved less consequential: moving from narrow to broad participation reduced regulatory sentiment by 12 points, rather than 17. These conditional effects, with confidence intervals, appear in Figure 4 under the labels “effect of broad CSR when CSR is deep,” and “effect of broad CSR when CSR is shallow.”

In a similar way, the effects of depth depended on breadth. When all members of an industry were undertaking voluntary action, the regulatory impulse was 6 points weaker if efforts were deep than if they were shallow. When only half the firms were acting voluntarily, though, respondents did perceive deep action as significantly better than shallow action; the effect of depth given narrow CSR was less than one point and statistically insignificant.

We replicated these findings with a second sample of environmental activists, who had signed our environmental petition to Congress (bottom half of Figure 4). Among petitioners, baseline support for regulation was 76 out of 100 when we presented environmental issues without mentioning autonomous corporate action. Compared to this baseline, enthusiasm for regulation was 18 points lower when firms displayed broad and deep CSR and 11 points lower when firms displayed broad but narrow CSR.

Petitioners, much like Audubon affiliates, were less impressed by corporate initiatives that engaged only half the firms in an industry. Narrow but deep actions moved the regulatory needle by only 1 point, a statistically significant but substantively miniscule shift. The effect of narrow and shallow activities was even smaller—only 0.3 points on the 100 point scale—and could have arisen by chance alone.
Finally, our study of petitioners confirmed that the effects of breadth depended on depth, and vice versa. The marginal effect of breadth was 17 points given deep initiatives, compared with 11 points given shallow initiatives. Likewise, respondents perceived a bigger difference between deep and shallow behavior when efforts involved the entire industry (7 points) than when efforts were confined to only half the industry (less than 2 points).

In summary, our studies of Audubon affiliates and petition signatories showed that voluntary corporate action demobilized environmental activists, especially when nearly all members of an industry joined the voluntary effort. This finding was not preordained. As emphasized earlier in the paper, activists could have responded with indifference, or they could have mobilized to demand even stricter standards in the wake of corporate action.

Would the mass public respond similarly? To find out, we administered identical experiments to a representative sample of adults in the United States. Figure 5 presents our findings, again averaging across all six environmental issues. When we did not mention voluntary corporate action, support for regulations was 50 points out of 100. Relative to this baseline, regulatory sentiment fell by 10–11 points when CSR was broad, versus only 2–3 points when CSR was narrow. In this fundamental sense, ordinary citizens behaved just like activists: reacting strongly when all firms pitched in but barely budging when only half contributed.

In three important respects, however, ordinary citizens responded differently from activists. First, ordinary citizens did not perceive a distinction between deep and shallow CSR; they reacted just as favorably to minor changes as to major ones. Second, because the mass public did not distinguish between deep and shallow, our experimental manipulations did not interact, whereas in the activist samples, the effect of breadth depended on depth and vice-versa. Finally, ordinary citizens were less responsive to treatment. Broad and deep CSR moved public
opinion by only 10 points, for example, but the same corporate actions shifted activist opinion by 18–20 points. Overall, our experiments confirmed that CSR can demobilize both ordinary citizens and environmental activists, while also revealing differences in responsiveness between the two groups.

FIGURE 5: Effects of CSR on the Mass Public

Note: Effects are defined as changes in support for regulations, relative to a baseline score of 50 when no CSR was mentioned. The Audubon graph is based on 10,242 observations, distributed equally across six environmental issues.
6. Effects by Issue and Demographic Subgroup

In the previous section we pooled data from all six issues to infer the average effects of corporate environmentalism on support for regulation. In this section we extend the analysis by examining each issue separately, and by comparing the behavior subgroups within the activist and mass samples.

Our central conclusions held when we split the data by issues. Figure 6 shows how Audubon affiliates responded by topic. Regardless of whether our scenario involved bluefin tuna, car fuel efficiency, genetically modified foods, neonic insecticides, plastic packaging, or wind turbines, broad CSR reduced support for government regulations. The effects were larger for some issues than for others, but broad and deep CSR always moved the regulation meter by at least 13 points, and on half of the issues the estimated effects stretched into the mid 20s. Broad but shallow efforts also proved consequential, albeit to a lesser degree: they moved the dependent variable by 8–19 points, depending on the issue.

The effects of narrow CSR were small by comparison, typically changing the opinions of Audubon affiliates by only 2–3 points on the 100-point scale. Moreover, on one issue, wind turbines, narrow and shallow CSR efforts actually backfired, making Audubon affiliates more willing to ban wind turbines in the migratory pathway of birds. As we will see, this finding was not a fluke: it recurred when we surveyed petition signatories and members of the mass public.
FIGURE 6. Effects of CSR on Audubon Affiliates, by Issue

Note: Effects were calculated relative to a baseline in which no CSR was mentioned. Baseline levels of support for regulations were 77 for Bluefin tuna (N=3,591); 70 car fuel efficiency (N=3,484); 65 for genetically modified foods (N=3,413); 76 for neonic insecticides (N=3,497); 64 for plastic packaging (N=3,625); and 61 for wind turbines (N=3,551).
Figure 7 presents estimates, by issue, for people who signed our online petition. The patterns were extremely similar to ones we observed with Audubon affiliates. Broad and deep initiatives moved the attitudes of petitioners by 9–24 points; broad but shallow initiatives shifted their preferences by 7–16 points; and narrow CSR typically did not matter one way or the other. The one exception was wind turbines, where narrow action inspired activists to demand even tougher government regulations. Overall, though, Figures 6 and 7 imply that broad CSR demobilized environmental activists, whereas narrow CSR did not.

Earlier in the paper we identified similarities and differences between environmental activists and ordinary citizens. Those patterns persisted when we split the data by issue (Figure 8). On most issues, broad CSR proved more potent than narrow CSR in the eyes of the mass public. The main exception involved wind turbines, where broad CSR failed to placate citizens and narrow but deep CSR actually backfired. Figure 8 also shows that, in nearly all cases, ordinary citizens perceived no significant difference between deep initiatives and shallow ones.
FIGURE 7. Effects of CSR on Petition Signatories, by Issue

Note: Effects were calculated relative to a baseline in which no CSR was mentioned. Baseline levels of support for regulations were 86 for Bluefin tuna (N=2,547); 82 car fuel efficiency (N=2,512); 84 for genetically modified foods (N=2,672); 88 for neonic insecticides (N=2,641); 75 for plastic packaging (N=2,593); and 41 for wind turbines (N=2,571).
FIGURE 8. Effects of CSR on the Mass Public, by Issue

Note: Effects were calculated relative to a baseline in which no CSR was mentioned. Baseline levels of support for regulations were 53 for Bluefin tuna ($N=1,677$); 56 car fuel efficiency ($N=1,653$); 60 for genetically modified foods ($N=1,698$); 54 for neonic insecticides ($N=1,734$); 44 for plastic packaging ($N=1,716$); and 34 for wind turbines ($N=1,764$).
Finally, using the Audubon data, we tested for heterogeneity in the treatment effects according to three moderating variables. First, we assessed whether people who engaged in more environmentally activist behaviors responded more strongly to the ECSR treatments. Using the list of activist behaviors described earlier, we bifurcated respondents into those who engaged in four or more activities, and those who engaged in less than four actions, thereby splitting the data at the median. As Figure 9 shows, the treatment effects were extremely similar between these two groups.

**FIGURE 9. Effects of CSR on Audubon Affiliates, by number of environmental actions**

*Note:* Respondents were asked how many of the following things they had done on a conservation or environmental issue: attended a rally, boycotted a product, contacted a politician, donated money, organized a protest, signed a petition, or volunteered time. The figure compares people who did at least four types of actions (11,038 observations), with people who did less than four types of actions (9,985 observations). Baseline levels of support for regulation in these two groups were 76 and 62, respectively.
Second, we tested whether sensitivity to ECSR varied, depending on the role environmental issues played in respondents’ voting decisions. We split respondents into three categories: those who said a candidate’s position on environmental issues was essential (51%), those who deemed it very important (37%), and all others (12%). As Figure 10 attests, treatment effects were similar across the three groups.

**FIGURE 10. Effects of CSR on Audubon affiliates, by importance of environment when voting**

*Note:* Respondents were asked: “Generally speaking, when deciding whom to vote for in a national election, how important to you is the candidate’s position on environmental issues?” The graph compares people who answered “essential” (10,889 observations) with those who answered “very important” (7,772 observations) and “others” who answered somewhat important, slightly important, or not important at all (2,023 observations). Baseline levels of support for regulation in these three groups were 78, 63, and 45, respectively.
Finally, we tested whether the reactions of environmental activists varied by political party affiliation. One might wonder, for example, whether Democratic respondents (47% of the Audubon sample) changed their attitudes to a greater degree than independents (31%) or Republicans (10%). Figure 11 shows, however, that the treatment effects were similar across partisan subgroups.

**FIGURE 11. Effects of CSR on Audubon Affiliates, by Political Party**

*Note:* The graph compares the effect of CSR on Democrats (9,868 observations), Independents (6,615 observations), and Republicans (2,205 observations). Baseline levels of support for regulation in these three groups were 73, 66, and 55, respectively. The figure omits people who answered “other party” or refused to give a party affiliation.
7. Conclusions

Our findings have important implications for environmental politics and corporate strategy. Most broadly, we find that voluntary corporate action can mitigate regulatory risk. Companies can reduce support for environmental regulations—even among passionate members of an issue public—by voluntarily doing more than the status quo, but less than what activists and citizens might demand in the absence of self-regulation. Thus, “doing good” might increase profits not only by improving the reputation of firms in the eyes of consumers and employees, but also by aiding firms in the arena of environmental politics.

Our experiments also clarified which types of ECSR were most consequential. Both activists and ordinary citizens more favorably disposed toward broad CSR than toward deep CSR. Activists also perceived a difference between deep and shallow initiatives, but ordinary citizens did not. Moreover, even among activists, breadth was far more important than depth. These findings imply that industry-wide initiatives, including relatively shallow ones, may be the most efficient ways for companies to engage in corporate citizenship. Such initiatives could not only yield cooperative equilibria in which companies agree to compete on a level playing field, but could also protect firms from pressure by activists and the mass public.
References


Appendix 1: Question Wording

Bluefin Tuna:

- **Baseline (no CSR mentioned):** Some people think the U.S. government should ban the sale of bluefin tuna in the United States, because bluefin tuna populations are at very low levels. Other people think the government should not ban the sale of bluefin tuna in the United States, because a ban would cause many people in the fishing and restaurant industries to lose their jobs. Do you think the government should or should not ban the sale of bluefin tuna in the United States? {Should ban, Should not ban, Don’t know}

- **Broad CSR (with deep versus shallow CSR in square brackets):** Companies sometimes take voluntary steps to combat overfishing; they do more than what the government requires. Suppose that all tuna fishing companies voluntarily agree not to fish in [40 OR 20] percent of the waters where bluefin tuna live. If all tuna fishing companies take these steps without being required by the government, do you think the government should or should not ban the sale of bluefin tuna in the United States? {Should ban, Should not ban, Don’t know}

- **Narrow CSR (with deep versus shallow CSR in square brackets):** Here is a different scenario. Suppose that half of the tuna fishing companies voluntarily agree not to fish in [40 OR 20] percent of the waters where bluefin tuna live. The other companies take no voluntary action to reduce their bluefin tuna fishing. In this scenario, do you think the government should or should not ban the sale of bluefin tuna in the United States? {Should ban, Should not ban, Don’t know}

Car Fuel Efficiency:

- **Baseline (no CSR mentioned):** Some people think the U.S. government should require all new cars to get at least 60 miles per gallon by the year 2020. They say that emissions from cars contribute to climate change. Other people say the government should not require all new cars to get at least 60 miles per gallon by the year 2020. They say these requirements would make cars much more expensive, hurting consumers and businesses. Do you think the government should or should not require all new cars to get at least 60 miles per gallon by 2020? {Should require, should not require, Don’t know}

- **Broad CSR (with deep versus shallow CSR in square brackets):** Companies sometimes take voluntary steps to combat climate change; they do more than what the government requires. Suppose that all car companies voluntarily agree that every new car they produce will get at least [50 OR 40] miles per gallon by the year 2020. If all car companies take these steps without being required by the government, do you think the government should or should not require all new cars to get at least 60 miles per gallon by 2020? {Should require, should not require, Don’t know}
• **Narrow CSR (with deep versus shallow CSR in square brackets):** Here is a different scenario. Suppose that half of the car companies voluntarily agree that every new car they produce will get at least \([50 \text{ OR } 40]\) miles per gallon by 2020. The other car companies do not agree to make those improvements in fuel efficiency. In this scenario, do you think the government should or should not require all new cars to get at least 60 miles per gallon by 2020? {Should require, should not require, Don’t know}

Genetically Modified Foods

• **Baseline (no CSR mentioned):** Scientists can change the genes in some food crops and farm animals to make them grow faster and resist pests, drought, and disease. Foods that rely on this process are called “genetically modified foods.” Some people think the U.S. government should ban genetically modified foods. They say that genetically modified foods are unsafe for humans and could disrupt the environment by introducing species that did not arise naturally. Other people think the government should not ban genetically modified foods. They say that genetically modified foods are safe for humans, and they help the environment by significantly reducing the use of water, pesticides, and fertilizers. Do you think the government should or should not ban genetically modified foods? {Should ban, Should not ban, Don’t know}

• **Broad CSR (with deep versus shallow CSR in square brackets):** Companies sometimes take voluntary steps to protect humans and the environment; they do more than what the government requires. Suppose that all food companies voluntarily agree to label all genetically modified foods beginning in the year \([2014 \text{ OR } 2020]\), so consumers can make informed decisions. If all food companies take these steps without being required by the government, do you think the government should or should not ban genetically modified foods? {Should ban, Should not ban, Don’t know}

• **Narrow CSR (with deep versus shallow CSR in square brackets):** Here is a different scenario. Suppose that half of the food companies voluntarily agree to label all their genetically modified foods beginning in the year \([2014 \text{ OR } 2020]\). The other food companies do not agree to label their genetically modified foods. In this scenario, do you think the government should or should not ban genetically modified foods? {Should ban, Should not ban, Don’t know}

Neonic Insecticides:

• **Baseline (no CSR mentioned):** In the 1990s, agrochemical companies developed a new generation of insecticides called neonicotinoids, also known as neonics. These chemicals protect crops against damage by aphids, beetles, and other insects. Some people say the U.S. government should ban neonics. They say that neonics are killing the bees that pollinate crops, and are poisoning birds and other wildlife. Other people say the government should not ban neonics. They say that neonics are safe for bees, birds, and other wildlife when properly used. They also warn that banning neonics would cause crop
yields to fall by around 20 percent, hurting farmers and raising food prices. Do you think the U.S. government should or should not ban neonic? {Should ban, Should not ban, Don’t know}

- **Broad CSR (with deep CSR in square brackets):** Companies sometimes take voluntary steps to protect the environment; they do more than what the government requires. Suppose that all neonic manufacturers voluntarily take the following steps: They offer free training for all farmers, to teach safe application methods that will not hurt bees, birds, and other wildlife [; and they voluntarily agree not to sell neonic to farmers who grow the kinds of crops that attract bees]. If all neonic manufacturers take these steps without being required by the government, do you think the government should or should not ban neonic? {Should ban, Should not ban, Don’t know}

- **Narrow CSR (with deep CSR in square brackets):** Here is a different scenario. Suppose that half of the neonic manufacturers voluntarily start offering free training for farmers, to teach safe application methods that will not hurt bees, birds, and other wildlife [; and they voluntarily agree not to sell neonic to farmers who grow the kinds of crops that attract bees]. The other neonic manufacturers do not take these voluntary steps to train farmers [and avoid selling to farmers who grow crops that attract bees]. In this scenario, do you think the government should or should not ban neonic? {Should ban, Should not ban, Don’t know}

**Plastic Packaging:**

- **Baseline (no CSR mentioned):** Some people think the U.S. government should ban plastic containers for prepackaged foods and drinks. They say the production and disposal of plastic containers hurts the environment. Other people think the government should not ban plastic containers for prepackaged foods and drinks. They say a ban would impose high costs on businesses and consumers by significantly increasing the price of food. Do you think the government should or should not ban plastic containers for prepackaged foods and drinks? {Should ban, Should not ban, Don’t know}

- **Broad CSR (with deep versus shallow CSR in square brackets):** Companies sometimes take voluntary steps to protect the environment; they do more than what the government requires. Suppose that all food and beverage manufacturers voluntarily increase their efforts to recycle plastic, by making sure their plastic containers have at least [70 OR 30] percent recycled content. If all food and beverage manufacturers make this change without being required by the government, do you think the government should or should not ban plastic containers for prepackaged foods and drinks? {Should ban, Should not ban, Don’t know}

- **Narrow CSR (with deep versus shallow CSR in square brackets):** Here is a different scenario. Suppose that half of the food and beverage manufacturers voluntarily increase their efforts to recycle plastic, by making sure their plastic containers have at least [70 OR 30] percent recycled content. The other food and beverage manufacturers do not
increase their efforts to recycle plastics. In this scenario, do you think the government should or should not ban plastic containers for prepackaged foods and drinks? {Should ban, Should not ban, Don’t know}

Wind Turbines:

- **Baseline (no CSR mentioned):** Some people think the U.S. government should ban wind turbines in areas where birds might be at risk. They say that wind turbines kill hundreds of thousands of birds each year. Other people say the government should not ban wind turbines in areas where birds might be at risk. They say such restrictions would greatly reduce the ability to generate wind power, which is cleaner than fossil fuels and does not contribute to climate change. Do you think the government should or should not ban wind turbines in areas where birds might be at risk? {Should ban, Should not ban, Don’t know}

- **Broad CSR (with deep versus shallow CSR in square brackets):** Companies sometimes take voluntary steps to protect wildlife; they do more than what the government requires. Suppose that all wind power companies voluntarily change where they locate and how they operate turbines, and these changes reduce bird deaths from wind turbines by [60 OR 25] percent. If all wind power companies take these steps without being required by the government, do you think the government should or should not ban wind turbines in areas where birds might be at risk? {Should ban, Should not ban, Don’t know}

- **Narrow CSR (with deep versus shallow CSR in square brackets):** Here is a different scenario. Suppose that half of the wind power companies voluntarily make changes that reduce bird deaths by [60 OR 25] percent on their wind farms. The other companies take no voluntary action to reduce bird mortality on their wind farms. In this scenario, do you think the government should or should not ban wind turbines in areas where birds might be at risk? {Should ban, Should not ban, Don’t know}