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Social Movements, Risk Perceptions, and Economic Outcomes: The Effect of Primary and Secondary Stakeholder Activism on Firms' Perceived Environmental Risk and Financial Performance

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Abstract

Although risk assessments are critical inputs to economic and organizational decision-making, we lack a good understanding of the social and political causes of shifts in risk perceptions and the consequences of those changes. This article uses social movement theory to explain the effect of environmental activism on corporations' perceived environmental risk and actual financial performance. We define environmental risk as audiences' perceptions that a firm's practices or policies will lead to greater potential for an environmental failure or crisis that would expose it to financial decline. Using data on environmental activism targeting U.S. firms between 2004 and 2008, we examine variation in the effectiveness of secondary and primary stakeholder activism in shaping perceptions about environmental risk. Our empirical analysis demonstrates that primary stakeholder activism against a firm affects its perceived environmental risk, which subsequently has a negative effect on the firm's financial performance.

Keywords

environment, organizations, risk, social movements

Environmental activism has contributed to the growing interest in sustainability among corporations. Studies of social movements and organizations argue that activists frequently target firms, universities, and other organizations, in addition to states, to affect social change on issues ranging from human rights to energy to the environment (e.g., Lounsbury 2001; Rao 2009; Schurman and Munro 2009; Sine and Lee 2009; Soule 2009; Vasi 2009, 2011; Zald, Morill, and Rao 2005). These studies show that organizational change is often a direct consequence of social movement activism, caused by the potential threat activists make to their targets through protest

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and other extrainstitutional tactics (King 2008a; King and Soule 2007). The environmental movement, in particular, has been successful at changing corporate behavior through changes in state regulation and direct pressure (Hoffman 1997; Vasi 2009, 2011). Coercive pressures from activists and legislators contribute to companies' decisions to adopt practices that increase their legitimacy by making them appear greener (Hoffman and Ventresca 2002; Milstein, Hart, and York 2002). Other scholars argue that environmental organizations are key stakeholders that, under certain circumstances, may influence companies to improve their environmental performance (Hendry 2006; Lenox and Eesley 2009).

Research on environmental activism is, more generally, related to the growing literature on social movement outcomes (e.g., Giugni 1998). Although most research on movement outcomes focuses on political consequences (Amenta et al. 2010), the link between environmental activism and corporate environmental consequences provides a context in which to study the economic and organizational outcomes of movement activity (for an overview of research on movements' market consequences, see King and Pearce 2010). Furthermore, we lack a good understanding of how social movements affect cultural outcomes, like perceptions and attitudes about risk (Armstrong and Bernstein 2007; Van Dyke, Soule, and Taylor 2004). Although past research shows, for example, that environmental activism may shape firms' decisions to adopt either genuine environmental practices (Lenox and Eesley 2009) or ceremonial green façades (Forbes and Jermier 2002), we know less about the effect of activism on intermediate, sociocultural outcomes, such as firms' perceived environmental risk.

The influence of environmental activism—and, more generally, of any type of social movement activism—results not only from activists' pressure on corporations to adopt certain practices, but also from activists' ability to change perceptions about a firm's behavior, potentially altering a firm's image, reputation, and risk profile. Recent disasters such as the BP oil spill show that firms are aware of the importance of these perceptions to their financial well-being. As an investment firm representative noted, "extracting fossil fuels is becoming increasingly risky, and that is a financial risk. . . . The latest spate of environmental crises is pushing investors to become more interested in how environmental risk translates into financial risk" (Orol 2010:1).

Risk perceptions are shaped by activists and other critical audiences, such as analysts, the media, and especially professional risk managers.[1] We define perceived environmental risk as audiences' perceptions that a firm's practices or policies will lead to greater potential for an environmental failure or crisis that could expose it to financial decline.[2] Perceived environmental risk is neither an objective measure of how green companies actually are[3] nor an indicator of the "actual or potential threat of adverse effects on living organisms and environment by effluents, emissions, wastes, resource depletion, etc., arising out of an organization's activities."[4] We focus on professionals' perceived environmental risk because, independent of observable differences in firm environmental threats, their assessments of environmental risk fundamentally shape how investors and others in the business community react to firms' policies. For our purpose, perceived environmental risk is a professional assessment of a firm's environmental vulnerabilities and their potential economic consequences.[5] These professional assessments are made by mediating actors—professional risk analysts—whose role is to construct particular risk categories and evaluate firms as "risk producers" (Maguire and Phillips 2009:25).

Although risk management increasingly drives organizing efforts within firms (Scheytt et al. 2006), and society, in general, has become more dependent on risk assessments as an input to important decisions (Beck 1992), no studies have examined the link between activism directed at corporations and risk perceptions. This not only reflects a gap

in our understanding of the relations between social movements and corporations, it more fundamentally reflects a lack of theorization in economic sociology about the sources and consequences of risk (Perrow 1999; Short 1984). Our study addresses this gap by asking the following empirical questions: (1) to what extent does environmental activism influence perceptions of environmental risk and (2) what influence does environmental risk have on firms' actual financial performance? Our analysis indicates that certain forms of activism have different effects on the development of environmental risk perceptions. In particular, we assess the influence of primary and secondary stakeholder activism on firms' perceived environmental risk and financial performance, arguing that primary activism—that is, activism initiated by a firm's shareholders—has a stronger effect on environmental risk than does secondary activism—that is, activism spearheaded by nonshareholders. In short, we argue that activism by firm insiders has a greater effect on environmental risk than does activism initiated by firm outsiders.

Second, we investigate the relationships between activism, environmental risk, and firm financial performance, arguing that environmental activism against a firm affects perceived environmental risk, which subsequently has a negative effect on a firm's financial performance. Our study thus demonstrates an indirect link between environmental movement activism and firm performance via audiences' perceptions of risk. Derived from theories of social movements and organizations, we develop a number of hypotheses and test them using an original dataset that follows the perceived environmental risk and financial performance of approximately 700 large U.S. firms over five years.

SOCIAL MOVEMENTS AND CORPORATE GREENING

Corporate greening has received growing attention in the U.S. media, particularly during the past decade. When the CEO of General Electric announced in 2005 that his corporation would be staking its future on the ability to "define the cutting edge in cleaner power and environmental technology," one newspaper cited this as "the most dramatic example yet of a green revolution that is quietly transforming global business" (Schneider 2005). Indeed, a recent analysis of green reporting in U.S newspapers found that the number of "green stories" in business sections increased from less than 40 in 2000 to more than 180 in 2007, and the number of all green stories increased from less than 160 in 2000 to more than 1,700 in 2007 (Reynolds 2007).[6] Moreover, much academic research on corporate social responsibility focuses on firms' environmental performance. As Vogel (2006:133) points out, "no dimension of corporate social responsibility has attracted as much attention from the business community as environmental protection."

Interestingly, increased interest in corporate environmental performance was preceded by a growth in environmental activism and public interest in environmental issues (Dunlap and Mertig 1992). It is conceivable that the rising tide of interest in environmental practices in the corporate sphere is partially a product of social movement activism. The literature on social movement outcomes could therefore help us understand the impact of environmental activism on corporations.

Most studies of social movement outcomes show that movements influence the adoption of public policies directly, by engaging in lobbying and protest activities (Andrews 2001; Cress and Snow 2000; McCammon et al. 2001; Minkoff 1999; Soule et al. 1999; Soule and Olzak 2004), and indirectly, by changing public opinion (Burstein 1999; Burstein and Linton 2002). A growing number of social movement studies, however, have begun to focus on activists who target corporations (King and Pearce 2010). Movements' tactics reflect their positions as outsiders to corporate life and their inability to gain access to critical decision-making forums inside target companies (King 2008a; King and Soule 2007; Schurman and Munro 2009; Weber, Rao, and Thomas 2009). Social movements thus try to

affect organizations' policymaking processes by engaging in collective action and changing the cognitive grounds of action using diverse tactical means (Rao 2009; Soule 2009; Zald et al. 2005). Related specifically to environmental performance, a number of studies demonstrate that social movement actions, under certain conditions, may initiate changes in corporate environmental policy (Hendry 2006; Lenox and Eesley 2009; Reid and Toffel 2009). Although past research shows that environmental activism may lead to adoption of either genuine green practices (Lenox and Eesley 2009) or ceremonial façades (Forbes and Jermier 2002), we still do not know much about the intermediate shifts in perceptions and attitudes that make such practices more acceptable.

Shifts in risk perceptions and financial performance likely shape the issues that firms pay attention to and the tone of the broader debate about corporate environmental policies. Many companies care deeply about how external audiences perceive their environmental performance, as demonstrated by the fact that they spend significant amounts of money on advertising their environmental initiatives and green products.[7] Corporations have good reason to be concerned about how the general public and other audiences perceive their environmental performance. A 2005 survey, for example, found that the general public is concerned about environmental pollution issues and that most people believe corporations need to do much more to protect the environment.[8] By elevating perceptions about the riskiness of a firm's policies (in this case, their environmental policies), activists may indirectly force environmental issues onto the corporate agenda.

Environmental activism can play an important role in shaping perceptions of risk because risks are socially constructed. As theorists of risk society (Beck 1992; Giddens 1991) point out, risk construction is a widespread practice in contemporary societies. Giddens (1991:124), for example, argues that "thinking in terms of risk and risk assessment is a more or less ever-present exercise, of a partly imponderable character." Similarly, Adam and van Loon (2000:2–3) note that "one cannot observe a risk as a thing-out-there—risks are necessarily constructed. . . . The immateriality and invisibility of the threats that suffuse the 'risk society' mean that all knowledge about it is mediated and as such dependent on interpretation." Environmental activists influence the interpretation of risks associated with corporate activities by raising awareness about the environmental consequences of those activities. Indeed, the environmental movement has had a major impact on public perceptions of risks associated with industrial sectors such as biotechnology (Weber et al. 2009) and energy production (Vasi 2011).

What forms of activism shape environmental risk perceptions? Although activists use many different nuanced tactics to influence targets, two general forms of corporate activism exist: secondary and primary stakeholder activism. First, activists may mobilize adherents to publicly express their outrage at a company's policies via street protests, boycotts, and other forms of public demonstration (King and Soule 2007). We refer to these kinds of tactics as secondary stakeholder activism because they involve individuals and groups who, although they do not engage in direct economic exchange with firms or have a formal contractual bond or direct legal authority over firms, are affected by firms' actions (Eesley and Lenox 2006; King 2008b). Secondary stakeholders, like community activists, religious organizations, and nongovernmental organizations, often use these sorts of tactics because they lack other, more direct means to communicate their grievances about a firm (Walker, Martin, and McCarthy 2008). Secondary stakeholder activists tend to use tactics that leverage the emotional reaction of reference publics (Lipsky 1968), such as consumers, investors, or analysts, against a firm. Inasmuch as these publics come to support the movement's view, the corporate target is at risk of being labeled a deviant and may face future declines in reputation and legitimacy and potential regulatory

actions (Jonsson, Greve, and Fujiwara-Greve 2009; Pozner 2008).

The second medium of expression is through using institutional means of influence, such as shareholder resolutions, to directly influence corporate decision-makers (Davis and Thompson 1994; Proffitt and Spicer 2006; Reid and Toffel 2009). Institutional activism involves working through conventional channels of change and feedback (Lounsbury 2001; Raeburn 2004; Santoro and McGuire 1997). Because such channels are usually limited to employees, investors, and other primary stakeholders, we refer to these tactics as primary stakeholder activism. This form of activism involves individuals who engage in economic transactions with the firm or whose financial situation is correlated directly with the firm's performance: shareholders, employees, suppliers, or creditors. Whereas the function of secondary activism is to promote public debate and call into question a company's reputation, the function of primary activism is to generate debate about a company's policies among other primary stakeholders, thereby generating internal discontent with a company's policies.

These two forms of activism—primary and secondary stakeholder activism—are parallel to insider and outsider activism in the policymaking realm of the state (Santoro and McGuire 1997; Soule et al. 1999). A key difference, however, is that unlike state-oriented activism in which insiders hold institutional positions of influence and decision-making (e.g., agency heads and legislators), the activists we assess in this study—protestors and shareholders—have no official role in corporate decision-making. Compared to democratic states, corporations are relatively closed polities that purposefully limit the participation of their various constituents (Weber et al. 2009). Even insiders like shareholder activists must mobilize support through unconventional channels, such as using shareholder resolutions, to make their voices heard in the corporate context.[9] By assessing how stakeholder activists shape risk perceptions we explain how, despite their limited access, they might generate some level of influence in the corporate domain.

HYPOTHESES

Activism and Perceived Environmental Risk

Different forms of activism may affect perceptions of environmental risk differently. We posit that risk managers use activism as a signal of a firm's potential exposure to costly environmental hazards. This assumption is based on prior research that posits that economic actors monitor activism to assess market conditions (Ingram, Yue, and Rao 2010) and interpret movement activities as cues about unobserved market information (King and Soule 2007). The strength of activism's signal depends on activists' closeness to the firm itself. Activists who have more frequent interactions with a firm and more credibility in the eyes of risk managers will produce stronger (less noisy) signals. Activists with less frequent contact and who lack credibility in the eyes of risk managers will provide weaker (noisier) signals about a firm's underlying risk exposure.

We expect that when activism involves primary stakeholders, the perceived environmental risk may be even higher than when activism involves secondary stakeholders. Risk managers likely give more weight to information revealed through primary stakeholder activism, because shareholders' interests are less likely to be perceived as in conflict with the firm's economic interests. Shareholder activists are in a unique position to observe corporate activities and to report what they perceive as environmental misdeeds. Indeed, they are the main manifestation of socially responsible investing (SRI), a form of investing that has grown in importance over the past two decades.[10] Given that primary stakeholder activists' economic interests are aligned with those of the firm, their complaints of companies' policies send a clearer signal to investors about the potential liabilities associated with firms' environmental policies.

Shareholder resolutions are usually filed by investment management groups devoted to sustainable investing or religious groups involved in environmental activism (Vogel 2006). One example is the resolution filed in 2004 by Brothers of Holy Cross, Dominican Sisters of Hope, Sisters of Mercy of the Americas, and other religious groups asking General Electric to disclose the cost of PCB cleanup. The resolution received support from 12.7 percent of shareholders. Another example is the resolution filed in 2007 by Trillium Asset Management asking Dow Chemical Company to publish a report analyzing the extent to which its products might cause or exacerbate asthma. This resolution received support from 6.7 percent of shareholders. Although shareholder resolutions rarely receive enough support to force a change in corporate policies, they present confirming evidence that investors have reason to be concerned with firms' environmental practices.

In contrast, protests, demonstrations, and boycotts likely have a weaker effect on risk managers' perceptions because they are frequently organized by environmental groups that may be easily dismissed as radical or marginal and may not involve large numbers of people.[11] Secondary activism may become repetitive and commonplace in the eyes of risk managers. For example, Exxon Mobil was frequently the target of protests organized by Greenpeace and other environmental organizations because it was accused of being unwilling to take action to curb global warming. Yet, many of these protests were described in the media as involving a small number of people with unreasonable requests. When Greenpeace used images inspired by the movie *The Day After Tomorrow* in a demonstration against Exxon, the media quoted an Exxon Mobil spokesman who said it was fitting that Greenpeace was using a fictional movie to attack his company "because that's usually what they have done when they have discussed Exxon Mobil or our position on global climate change" (Associated Press 2004).

We therefore distinguish between the effect of primary stakeholder activism, such as shareholder resolutions, and secondary stakeholder activism, such as protests, lawsuits, and boycotts. This leads us to formulate the first two hypotheses:

Hypothesis 1: Both primary and secondary stakeholder activism targeted at a firm will increase the firm's perceived environmental risk.

Hypothesis 2: Primary stakeholder activism targeted at a firm will increase the firm's perceived environmental risk more than secondary stakeholder activism.

Activism and Financial Performance

Social movement research maintains that protests and other forms of activism result in significant costs to their targets (Gamson 1990; King and Soule 2007; Luders 2006; McAdam and Su 2002; Piven and Cloward 1977). Protests and boycotts may influence firms because they impose a disruption cost—for example, boycotts and sit-ins organized by civil rights activists effectively curtailed sales at segregated businesses in the South (Luders 2006). Protests may also affect firms because they threaten intangible assets such as reputation and legitimacy (King and Soule 2007).

Although social movement research has not yet examined the effect of both primary and secondary stakeholder activism on firms' financial performance, there is reason to believe the effect of primary stakeholder activism differs from the effect of secondary stakeholder activism. More specifically, primary stakeholder activism may have a stronger negative effect on firms' financial performance than secondary stakeholder activism because primary stakeholders are more influential than secondary stakeholders in shaping investors' perceptions. We distinguish between effects of primary and secondary stakeholder activism and formulate the following two hypotheses:

Hypothesis 3: Primary and secondary stakeholder activism will have negative effects on target firms' financial performance.

Hypothesis 4: Primary stakeholder activism will have a larger negative effect on firms' financial performance than will secondary stakeholder activism.

Perceived Environmental Risk and Actual Financial Performance

Activism might also indirectly influence financial performance through the creation of risk perceptions. Providers of risk management argue that companies should be concerned about perceived environmental risks because they affect firms' profitability. According to Matthew Kiernan, the founder and executive managing director of Innovest, "companies' eco-efficiency and environmental performance are becoming far more critical to their competitiveness, profitability, and even survival" (Business Wire 2000). Some company executives also argue that having a low environmental risk provides a competitive advantage because companies that are seen as "green leaders" are able to "attract the young, talented engineers that are essential to sustain growth and keep [them] at the leading edge of the industry" (Business Wire 2000). Recent evidence suggests that companies consider managing environmental risk to be a crucial impression management tool (Bansal and Clelland 2004). For example, a growing number of banks are "taking a stand on industry practices that they regard as risky to their reputations and bottom lines," such as mountaintop removal mining (Zeller 2010). Additionally, numerous Fortune 500 companies invest in energy efficiency and wind power to be seen as environmental leaders (Vasi 2011).

Environmental risk also influences financial performance by shaping investors' evaluations of a company's worth. Investors may be especially cautious of firms that have high environmental risk because they are nervous about the possibility of financial loss occurring from a low-probability environmental crisis. Indeed, psychological research under the prospect (or loss aversion) theoretical framework shows that people are risk averse when they evaluate a possible gain, because people are more motivated to avoid losses than they are to pursue gains (Kahneman and Tversky 1979; Tversky and Kahneman 1974). Most people would buy insurance to avoid a significant loss, even if the probability of the loss is small, because most people overweigh low probabilities. Fearing potential losses, investors may thus undervalue companies exposed to high environmental risks. Finally, environmental risk negatively influences financial performance because companies perceived to have low environmental risks are assumed to have a lower probability of being fined, sued, or publicly criticized. In contrast, if the public perceives that a firm is overly exposed to environmental risk, the firm may face greater scrutiny from regulatory agencies and be a more attractive target of future boycotts and lawsuits. Based on these assumptions, we hypothesize the following:

Hypothesis 5: Firms' financial performance is negatively associated with their perceived environmental risk.

RESEARCH DESIGN

Data and Dependent Variables

Our dataset consists of the largest (in terms of revenue) 700 U.S. companies in 2004.[12] We followed these firms from 2004 to 2008 to compile a five-year panel dataset. Data about firms' environmental risk was available from iRatings (formerly Innovest) during this five-year span. We use two dependent variables. The first is perceived environmental risk, which we measured using the environmental risk score developed by iRatings.[13] The environmental risk score ranges between 0 (lowest) and 9.7 (highest) and combines four dimensions: historic liabilities, operating risk, leading sustainability risk indicators, and industry specific risk.[14] The iRatings data measure perceived environmental performance for companies from all industrial

sectors and, rather than indicate differences in objective performance criteria, reflect analysts' perceptions of the environmental risks companies face. However, the measure has one important drawback: it is updated annually. A monthly or even quarterly updated measure would permit a more detailed analysis of how risk managers assess the effect of environmental activism—yet, such a measure is not available. Despite this shortcoming, the current rating, because of its wide use and breadth of coverage, is the most complete and useful measure of environmental risk available.[15]

The iRatings indicator of environmental risk is not simply a measure of health effects associated with exposure to chemicals and other products produced by firms; it is a measure of perceived environmental hazards that potentially affect a firm's financial health. As an iRatings document states, the measure of environmental risk is an indicator "for management quality and long-term financial performance, not [a commentary] on the intrinsic ethical worth of the companies. At the heart of iRatings analytical model is the attempt to balance the level of environmentally and socially driven investment risk with the companies' managerial and financial capacity to manage that risk successfully and profitably into the future."[16]

This measure of environmental risk captures the perception among analysts that organizations face potential threats to their financial well-being due to their environmental practices and policies.[17] We note that this perceptual measure contrasts sharply with objective measures of environmental performance, the most common indicator being the toxic release inventory (TRI). TRI data measure emissions of harmful chemicals at the facility level primarily for firms in the manufacturing sector: almost 90 percent of facilities in the TRI dataset list a manufacturing code as their primary Standard Industrial Classification (SIC) code (Potoski and Prakash 2005). Although we do not possess any direct evidence that iRatings' environmental risk scores influence firms or investors, the fact that more and more companies publish sustainability reports suggests that environmental risks are taken seriously by increasing numbers of corporations.[18]

The second dependent variable, Tobin's q, is a measure of corporate financial performance and has been used in numerous studies to assess the captured value resulting from strategic changes (e.g., Anand and Singh 1997; Hanson and Song 2003; Lang and Stulz 1994; Servaes 1991). Tobin's q is the ratio of firm market value divided by the book value of its assets.

Independent Variables

Hypotheses 1 and 2 predict that companies targeted frequently by environmental activists will have higher levels of perceived environmental risk. We include two variables to test these hypotheses. The first variable captures primary stakeholder activism as measured through shareholder resolutions. We obtained data on resolutions from the Interfaith Center on Corporate Responsibility (ICCR), an association of faith-based institutional investors that presses companies to be socially and environmentally responsible and collects information about shareholder resolutions on major social and environmental issues. We recorded the total number of shareholder resolutions on environmental issues for the period 2003 to 2007. We applied the natural logarithm of the resolution count to stabilize skew in the data and lagged the variable by one year to avoid simultaneity bias.[19]

The second variable captures secondary stakeholder activism as measured through counts of environment-related protests, demonstrations, boycotts, and lawsuits. This variable is operationalized as the number of newspaper articles discussing an environmental protest, demonstration, boycott, or lawsuit during the 2003 to 2007 period. We also created an alternative set of measures that distinguishes between activism organized by large environmental organizations and activism organized by small groups; we categorized an environmental organization as large if it was in the top 20 in 2003 and small otherwise.[20]

We coded this variable as 1 if the article mentioned at least one large environmental organization and 0 otherwise. We lagged these variables by one year. We chose to examine only activism covered in the media because, as previous research has argued, protests that do not receive media coverage are unobservable and therefore have less informational value to the public and investors (Baron 2005; King 2008a; King and Soule 2007). Lipsky (1968:1151) sums up the importance of media attention for protests using an effective metaphor: "If protest tactics are not considered significant by the media . . . protest organizations will not succeed. Like a tree falling unheard in the forest, there is no protest unless protest is perceived and projected."

We identified relevant articles on protests, demonstrations, campaigns, boycotts, and lawsuits through a LexisNexis search of all U.S. newspapers and wire services. We focus only on protests and other forms of secondary stakeholder activism directed at corporations, not on shareholder resolutions. We tested different search algorithms and ultimately settled on the most inclusive search string. This algorithm included the following elements: (environmental group *or* environmental organization *or* environmental activist *or* environmentalist) *within the same paragraph* (protest *or* boycott *or* demonstration *or* lawsuit) *within the same paragraph* (company name). We checked results for accuracy and eliminated false positives.[21] Similar to the shareholder resolution measure, we used the natural logarithm of the article count to stabilize the variable's skew. The correlation between the secondary and primary stakeholder variables was low (.20), indicating that the two forms of activism are not redundant.

We also examined a number of cases of primary and secondary stakeholder activism and found that they usually involve different activist groups. For example, protests, boycotts, and rallies are often organized by traditional environmental groups such as Rainforest Action Network, Natural Resources Defense Council, Earth First!, Sierra Club, Greenpeace, and Environmental Defense. In contrast, shareholder resolutions are often filed by investment management firms devoted to sustainable investing (e.g., Trillium Asset Management, Domini Social Investments, Boston Common Asset Management, and Green Century Funds) or religious groups involved in environmental activism (e.g., Evangelical Lutheran Church in America, Religious of the Sacred Heart of Mary, Maryknoll Fathers and Brothers, and Sisters of St. Dominic of Caldwell). Sometimes environmental groups form coalitions with religious groups or sustainable investment management firms. For example, Ceres, a national network of investors, environmental organizations, and public interest groups working with companies and investors to address sustainability challenges, has filed numerous shareholder resolutions seeking greater corporate transparency about the financial risks posed by climate change.[22] Because the correlation between forms of activism is low and qualitative evidence suggests different groups initiate different activist tactics, we are reasonably confident that our two measures of activism capture distinct forms of movement influence.

In the Tobin's q analysis, we also included the environmental risk measure as an independent variable. It is possible that a negative correlation between environmental risk and financial performance could be due to risk analysts' use of past financial performance to help predict future environmental risk. To account for this possibility, we transformed the risk measure by first regressing it on past financial performance and then used the predicted residual from that model as the independent variable in the regression of Tobin's q. By doing this, we essentially stripped our environmental risk measure of any perceptual influence of past financial performance.

Control Variables

We included a number of control variables to examine the effect of factors identified by stakeholder, social movements, and institutional theories. Previous research shows that size, research, and development activities and

reputation influence how companies respond to activists' demands (Etzion 2007; Florida 1996; King 2008a; Lenox and Eesley 2009). We measured company size as the natural logarithm of a firm's total assets. We coded this variable using information from the Compustat database. We measured research and development (R&D) activities using information from KLD Research and Analytics, an independent rating agency that assesses corporate social and environmental performance. We used the year 2003 as a baseline. R&D activities is a dummy variable, with the value 1 if a company is considered a leader in its industry for research and development. We measured reputation as an ordinal variable using raw scores from *Fortune* magazine's list of the most admired companies between 2004 and 2008. We created an ordinal variable to account for skewness in the data. Most firms are not ranked on the index (therefore having a default score of zero). We created four ordinal levels with the lowest level consisting of all unranked firms and the top three levels consisting of evenly divided quantiles based on the distribution of raw scores.

We included corporate governance as a control variable, because companies with strong shareholder rights are more likely to respond positively to primary stakeholders' demands. We measured corporate governance using the Governance Index data developed by Gompers, Ishii, and Metrick (2003). High values indicate that companies are in the *dictatorship portfolio,* which means they have the highest management power or the weakest shareholder rights; low values indicate companies are in the *democracy portfolio,* which means they have the lowest management power or the strongest shareholder rights.

We also included a control variable that captures the degree to which corporations have a progressive corporate culture. Previous research shows that companies with a green corporate culture are more likely to adopt environmental practices because they value social responsibility as well as profitability (Andersson and Bateman 2000; Bansal and Roth 2000; Forbes and Jermier 2002; Vogel 2006). This variable uses data from KLD Research and Analytics and is constructed as an index that combines different dimensions—community strengths, diversity strengths, employee relations strengths, and human rights strengths.[23] Community strengths includes measures such as charitable giving and support for housing and education; diversity strengths includes measures such as employee benefits addressing work and life concerns, women and minority contracting, and gay and lesbian policies; employee relations strengths includes measures such as employee involvement and retirement benefits; and, finally, human rights strengths includes measures such as indigenous people and labor rights initiatives. The composite variable has the extreme values of 0 if a company does not score high on any dimension of socially responsible corporate culture and 3 if a company scores high on all of the dimensions.

To ensure our assessment of risk is independent from other environmentally proactive policies a firm takes, we included a measure of environmental strengths, using data obtained from KLD Research and Analytics. The environmental performance measure is the sum of all environmental strengths listed by KLD.[24] Although KLD rates firms based on seven possible environmental strengths (including offering environmentally beneficial products and having a recycling program), no firms in our sample had more than four strengths.

We included regulatory pressure faced by companies as a control variable because regulators can specify environmental targets that must be achieved, create economic frameworks for redistributing environmental costs and benefits, and improve information flow by mandating pollution disclosure (Hoffman and Ventresca 2002; Konar and Cohen 1997). This is an ordinal variable, with the value 1 if a company is headquartered in a state with weak environmental regulation and 4 if headquarters are in a state with strong environmental regulation. Data for the variable come from the Green Index, which ranked states on a variety of dimensions of environmental

regulation in 1990.[25] We also included dummy variables for industry sectors. We used the information sector as a reference group to establish the baseline coefficient.

We included measures of free cash flow and price to equity ratio in the model to account for a company's financial health. We obtained these variables from Compustat. We controlled for past media attention to ensure that our measures of environmental activism are not substituting for overall media exposure. We created this variable similarly to the variable for secondary stakeholder activism; we used a LexisNexis search of all U.S. newspapers and wire services from 1990 to 2004 to identify articles on environmental protests, demonstrations, campaigns, boycotts, and lawsuits. Finally, to account for unmeasured temporal heterogeneity, we included annual time dummies in our models. For simplicity in presentation we do not show the temporal fixed effects in our tables. In models not shown, we included interaction effects between primary and secondary stakeholder activism and corporate size, governance style, and reputation; these effects were not significant, so we left them out of the final model. Table 1 shows descriptive statistics and correlations for all of the independent variables.

Estimation

Because both of our dependent variables are continuous, ordinary least squares regression is appropriate for estimating our model; however, because we use panel-level data we need to control for unmeasured firm-level heterogeneity. To account for this source of variance, we estimated a random-effects model. Although a fixed-effects model would be ideal, several of our variables, including the industry dummy variables, do not vary over time, making fixed-effects regression inappropriate because this would have forced us to drop those measures from the analysis. We also verified that a random-effects model was appropriate by running a Hausman test. The chi-squared test was not statistically significant at the .05 level, which indicates that the coefficients between models are not systematically different. In addition to using random effects, we obtained robust standard errors by clustering the observations by firm to account for heteroskedasticity in the error term. To ensure our models were not biased by multicollinearity, we obtained variance inflation factor scores for all of the independent variables. All of the scores were in an acceptable range (i.e., none of the scores exceeded three), indicating multicollinearity was not a concern. In models not shown, we ran the regressions using generalized least squares regression to see if serial autocorrelation affected our results; we did not find this to be a source of bias.

RESULTS

Environmental Risk Analysis

Table 2 shows results of the random-effects regressions of perceived environmental regression. Model 1 tests the effect of control variables, and Model 2 provides a test for Hypotheses 1 and 2. Larger firms and companies headquartered in states with strong environmental policies are more likely to be perceived as having high environmental risk, and firms with a good reputation and a progressive corporate culture have lower perceived environmental risk. Somewhat surprisingly, firms that had shown environmental strengths in the past are not perceived as having lower environmental risk.

Model 2 shows support for Hypotheses 1 and 2. Firms targeted by primary and secondary stakeholder activism are significantly more likely to be perceived as having high environmental risk. The effect of secondary activism, however, is slightly smaller than that of primary activism. The effect of a standard deviation increase in secondary activism on perceived risk is about half that of the effect associated with a standard deviation increase in primary activism.

In addition to testing our hypotheses with a standard random-effects model, we also

Table 1. Means, Standard Deviations, and Correlations of Variables

Variable Name	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Environmental risk	4.669	1.559	1																				
2. Tobin's q	.965	.406	−.129	1																			
3. Shareholder resolutions (Ln)	.104	.405	.081	−.021	1																		
4. Protests, boycotts, etc. (Ln)	.122	.919	.009	−.012	.186	1																	
5. Assets (Ln)	9.146	1.475	.074	−.492	.218	.139	1																
6. Reputation	1.683	1.081	−.104	.019	.199	.118	.289	1															
7. R&D activities	.031	.174	−.105	.080	−.011	.019	.045	.088	1														
8. Governance style	9.470	2.495	.049	−.063	−.094	−.070	−.103	−.035	−.106	1													
9. Progressive corp. culture	.696	.792	−.143	−.143	.169	.102	.407	.281	.139	−.122	1												
10. State environmental policy	1.868	.893	.146	−.015	.040	.080	−.016	−.040	−.121	.121	−.193	1											
11. Environmental strengths	.347	.789	−.089	−.018	.156	.046	.163	.176	.259	−.007	.323	−.100	1										
12. Manufacturing sector	.352	.477	−.023	.261	.018	−.018	−.217	.022	.144	.088	.055	−.163	.347	1									
13. Mining sector	.031	.173	.133	.104	.024	.008	−.036	−.031	−.039	−.008	−.134	.241	−.077	−.184	1								
14. Utilities sector	.055	.227	−.008	−.097	.025	.056	.098	−.100	−.052	.014	−.061	.079	.032	−.246	−.058	1							
15. Finance and insurance sector	.145	.353	.084	−.422	−.066	−.046	.448	−.085	−.080	−.028	.003	−.038	−.195	−.378	−.089	−.119	1						
16. Construction sector	.012	.110	.038	.028	.030	.010	−.050	.080	−.025	−.017	−.118	.027	−.065	−.117	−.028	−.037	−.057	1					
17. Trade sector	.072	.258	−.028	.080	.058	.077	−.098	.071	−.060	−.041	.017	.036	−.105	−.285	−.067	−.090	−.138	−.043	1				
18. Transportation sector	.022	.146	.046	−.015	−.021	−.012	.075	.041	−.028	.018	−.014	.179	−.034	−.134	−.032	−.042	−.065	−.020	−.049	1			
19. Professional services sector	.025	.156	−.017	−.078	−.027	−.023	−.046	−.071	.047	−.015	.007	−.045	−.002	−.136	−.032	−.043	−.066	−.020	−.049	−.023	1		
20. Administrative sector	.016	.127	−.067	.012	−.028	−.012	−.151	.077	−.026	−.005	−.088	.031	−.068	−.124	−.029	−.039	−.060	−.018	−.045	−.021	−.021	1	
21. Health sector	.010	.100	−.183	.014	−.033	−.017	−.047	−.038	−.021	−.044	−.067	.042	−.055	−.099	−.023	−.031	−.048	−.015	−.036	−.017	−.017	−.016	1
22. Accommodation sector	.019	.135	.039	.011	.099	−.002	−.049	.084	−.027	.038	.085	.075	−.044	−.125	−.029	−.039	−.061	−.019	−.046	−.022	−.022	−.020	−.016

Table 2. Random-Effects Regression of Perceived Environmental Risk

Variables	Model 1	Model 2	Model 3 (IV regression)
Constant	3.411***	3.502***	3.081***
	(.513)	(.519)	(.389)
Primary Stakeholder Activism			
Lagged shareholder resolutions (Ln)		.131*	.608*
		(.069)	(.273)
Secondary Stakeholder Activism			
Lagged protests, demonstrations, boycotts (Ln)		.029*	–.242
		(.014)	(.175)
Controls			
Assets (Ln)	.142*	.131*	.163*
	(.053)	(.054)	(.039)
Reputation	–.111***	–.116***	–.133***
	(.035)	(.035)	(.032)
R&D activities	–.635	–.621	–.485*
	(.336)	(.330)	(.234)
Governance style	–.006	–.004	.006
	(.023)	(.023)	(.016)
Progressive corporate culture	–.298***	–.305***	–.289***
	(.080)	(.079)	(.059)
State environmental policy	.156*	.150*	.183*
	(.064)	(.064)	(.050)
Environmental strengths (KLD)	–.012	–.013	–.063
	(.059)	(.059)	(.045)
Manufacturing sector	.248	.229	.203
	(.214)	(.214)	(.146)
Mining sector	.933**	.907**	.769**
	(.331)	(.327)	(.244)
Utilities sector	–.130	–.151	–.141
	(.266)	(.264)	(.204)
Finance and insurance sector	.213	.225	.167
	(.248)	(.249)	(.175)
Construction sector	.660	.627	.570
	(.427)	(.428)	(.325)
Trade sector	.044	.015	.059
	(.254)	(.254)	(.184)
Transportation sector	.350	.360	.297
	(.376)	(.378)	(.307)
Professional services sector	.026	.019	–.019
	(.440)	(.441)	(.279)
Administrative sector	–.565	–.578	–.507
	(.419)	(.418)	(.318)
Health sector	–2.580***	–2.577***	–2.514***
	(.302)	(.303)	(.357)
Accommodation sector	.895	.851	.644
	(.517)	(.520)	(.323)
R Squared	.114	.128	.11
Number of Observations	2,483	2,483	2,483

Note: Annual time dummy variables are not shown; robust standard errors are in parentheses.
*$p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

sought to confirm the robustness of our findings by testing for potential endogeneity bias. Endogeneity is typically a concern when the dependent variable has a potential causal effect on the independent variables in question. This necessitates isolating the causal effect of the independent variable through the use of an instrument (Gangl 2010). We created instrumental variables with two-stage least square regression, using the *xtivreg* command in Stata 12, with random effects. The first stage of the model regresses primary and secondary stakeholder activism on three exogenous variables. In the second stage of the regression, the endogenous variables, environmental and shareholder activism, are replaced with predicted values produced from the first stage regression, which produces consistent and unbiased regression estimates.

As exogenous variables in the first stage analysis, we used the number of instances of primary stakeholder activism (1998 to 2003), the number of instances of secondary stakeholder activism (1998 to 2003), and the number of human rights concerns as reported by KLD. Past activist behavior should be predictive of future activism. The latter variable should be correlated with the extent to which primary and secondary activists target companies, inasmuch as activists tend to target firms that have a negative public image (King 2008a). Firms that are viewed poorly due to human rights violations are more likely to be in the activist limelight.[26] These variables are adequate exogenous predictors if they (1) are strongly correlated with the endogenous variables and (2) are uncorrelated with the structural error term in the model. To assess their fit as exogenous variables we used the post-estimation commands provided for instrumental variable regression in Stata, *estat firststage* and *estat overid*, to assess our two assumptions about their adequacy. The *F*-statistic was statistically significant and greater than 10, which allows us to reject the null hypothesis that these are weak instruments (Stock and Yogo 2005). In addition, the Wooldridge's score test of overidentifying restrictions was not statistically significant (p = .31), which indicates that our instruments are uncorrelated with the structural error term. We can therefore safely assume that our exogenous variables are adequate instruments. Following the earlier regression, we obtained robust standard errors in the instrumental variable regression in order to deal with heteroskedasticity in the error term.

Model 3 shows results of the instrumental variable regression. Notably, the effect of secondary activism loses statistical significance when accounting for endogeneity, and the coefficient for primary stakeholder activism considerably increases in magnitude. The findings indicate that a standard deviation increase in shareholder resolutions leads to an increase of .25 in the iRatings score. These results confirm our finding that primary stakeholder activism has a statistically significant effect on environmental risk perceptions; however, we cannot support the hypothesis that secondary activism increases perceptions of risk.

Financial Performance Analysis

Table 3 shows results of the financial performance regression. Model 1 provides a test for the effect of control variables, and Model 2 provides a test for Hypotheses 3 and 4. Results do not support Hypotheses 3 and 4. Firms targeted by primary stakeholder activism did not have significantly weaker financial performance. Model 3 in Table 3 provides support for Hypothesis 5. Environmental risk has a significant negative effect on financial performance. More specifically, firms perceived to have a high environmental risk have weaker financial performance in the future. A standard deviation increase in environmental risk, on average, leads to a 2 percent decline in financial performance. Given the magnitude of financial value at stake—a single percentage drop in market value could lead to a loss of tens of millions of dollars—this performance difference has significant implications for corporate decision-makers. Even though primary stakeholder activism does not have a direct effect on financial performance, because it has a positive association with perceived environmental risk and environmental risk negatively affects financial performance, we can surmise that primary activism has an

Table 3. Random-Effects Regression of Tobin's Q

	Model 1	Model 2	Model 3	Model 4 (IV regression)
Constant	2.295***	2.317***	2.279***	2.307***
	(.217)	(.222)	(.216)	(.220)
Primary Stakeholder Activism				
Lagged shareholder resolutions (Ln)		.035	.048	–.040
		(.033)	(.032)	(.098)
Secondary Stakeholder Activism				
Lagged protests, demonstrations, boycotts (Ln)		.006	.005	.089
		(.019)	(.019)	(.057)
Perceived Environmental Risk				
Environmental risk (residual)			–.030*	–.024*
			(.011)	(.012)
Controls				
Assets (Ln)	–.126***	–.130***	–.124***	–.129***
	(.017)	(.018)	(.018)	(.018)
Reputation	.046**	.045**	.043*	.043**
	(.015)	(.016)	(.015)	(.016)
R&D activities	.124	.130	.119	.103
	(.071)	(.073)	(.070)	(.073)
Governance index	–.017**	–.016**	–.016**	–.016**
	(.005)	(.005)	(.005)	(.005)
Progressive corporate culture	–.007	–.007	–.016	–.012
	(.021)	(.021)	(.021)	(.021)
State environmental policy	.002	.001	.004	–.004
	(.015)	(.015)	(.015)	(.017)
Environmental strengths (KLD)	–.024	–.026	–.031	–.023
	(.021)	(.021)	(.021)	(.022)
Cash flow	.467	.459	.407	.387
	(.365)	(.366)	(.362)	(.384)
Price to equity	–.806	–.806	–.731	–.723
	(.962)	(.963)	(.948)	(.978)
Manufacturing sector	.082	.079	.088	.094
	(.071)	(.071)	(.071)	(.073)
Mining sector	.133	.127	.153	.164
	(.087)	(.088)	(.086)	(.095)
Utilities sector	–.032	–.036	–.042	–.045
	(.072)	(.072)	(.072)	(.074)
Finance and insurance sector	–.161*	–.157*	–.157*	–.130
	(.075)	(.075)	(.076)	(.077)
Construction sector	.044	.036	.049	.055
	(.095)	(.095)	(.096)	(.100)
Trade sector	.036	.029	.031	.030
	(.074)	(.075)	(.075)	(.078)
Transportation sector	.041	.045	.055	.079
	(.100)	(.099)	(.098)	(.098)
Professional services sector	–.162	–.164	–.163	–.183
	(.123)	(.124)	(.127)	(.125)
Administrative sector	–.238	–.240	–.252	–.248
	(.259)	(.259)	(.262)	(.264)
Health sector	–.032	–.032	–.036	–.064
	(.103)	(.104)	(.108)	(.102)
Accommodation sector	–.034	–.046	–.022	.008
	(.095)	(.095)	(.095)	(.103)
R Squared	.353	.355	.361	.258
Number of Observations	2,452	2,452	2,442	2,442

Note: Annual time dummies are included but not shown; robust standard errors are in parentheses.
*$p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

indirect negative impact on financial performance. We emphasize that the effect of environmental risk on financial performance is net of the actual environmental performance of the firm, as measured by the environmental strengths variable. Therefore, we can rule out the alternative interpretation that environmental risk perceptions are merely capturing underlying environmental performance. Because we have already stripped the risk measure of the perceptual influence of past financial performance, we can be confident that the result is not simply due to financial forecasting based on previous results. In Model 4 we run the same analysis using instrumental variables regression. We find nearly identical results, confirming the robustness of the random-effects regression.

In analyses not shown in the tables, we examined whether the different forms of activism not only had direct but also interactive effects. The interaction effect was not significant, indicating that secondary and primary activism are not complementary. Previous research also suggests that contextual factors—that is, the corporate opportunity structure—may moderate the effect of activism (King 2008b; Soule 2009; Weber et al. 2009). We included a number of interaction effects between forms of activism and corporate opportunities (in both models predicting environmental risk and financial performance)—specifically, we looked at the moderating effects of firm size, governance type, and reputation[27]—but these variables did not have significant effects. For simplicity in presentation, we do not show these results, but the models are available upon request. Results also show that larger firms and firms with a governance structure with weak shareholder rights have a weaker financial performance, while firms with a good reputation have a strong financial performance.

DISCUSSION AND CONCLUSIONS

Over the past four decades, social movements have increased their pressure on firms to engage in social responsibility. Companies' environmental performance has been a major source of contention for recent activism. Some companies have responded to environmental activists' pressures, but many have resisted. An important, yet understudied, mechanism through which activists can exert influence is by changing perceptions of firms' environmental risk. Our results indicate that certain forms of activism change the perception of risk among potential investors, and that the perception of high environmental risk has a negative impact on firms' financial performance. Specifically, by using shareholder resolutions, activists may pressure investors to "start a dialogue with corporations that don't respond to behind-the-scenes discussions" (Orol 2010).

This study has a number of important findings that speak to the influence of types of activism. First, we show that primary activism is more influential than secondary activism in shaping risk perceptions. This finding contributes to our theoretical understanding of stakeholder models of influence (e.g., Doh and Guay 2006; Freeman 2010), to institutional accounts of the coercive and normative mechanisms of marginal field actors' influence (e.g., DiMaggio and Powell 1983), and to our understanding of insider versus outsider forms of movement influence (Santoro and McGuire 1997). Our results underscore the importance of formal avenues of activist influence. Because risk analysts perceive that shareholder activists' interests are more closely aligned with those of the firm, shareholder activism sends a clearer signal to investors about the potential liabilities of unsound environmental practices. These signals, in turn, translate into higher levels of perceived risk and, ultimately, into weaker financial performance. Furthermore, the contractual bond between shareholder activists and a firm makes primary activists' grievances more legitimate in the eyes of risk managers. In contrast, activists who engage in protests, demonstrations, boycotts, and lawsuits may simply send a weaker signal. Our findings suggest that secondary activists may actually

be more likely to target firms that have higher levels of environmental risk (as indicated by the positive effect of secondary activism on risk in Table 2, Model 2), and they perhaps do this intentionally as an attempt to focus on the economically weakest targets. But after taking into account endogeneity, we find that protests and other forms of secondary activism do not have the same causal effect on risk perceptions as does primary activism (as indicated in Table 2, Model 3). Of course, it is quite possible that secondary activism is important in other ways. For example, secondary activism may be more influential in shaping which issues attract public attention. Moreover, our findings are limited to companies with large revenue: companies with small revenue may be more sensitive to secondary stakeholder activism because they cannot counteract it as efficiently with well-funded PR campaigns. Future research ought to further examine the various ways that secondary activism influences the emergence of new environmental issues and the complementarities it provides to primary activism in shaping the corporate agenda.

These findings also contribute to our understanding of social movement outcomes by providing further support for the idea that insider activists—in our case, primary stakeholder activists—have an important role in social and political change (Santoro and McGuire 1997). Moreover, our results suggest a specific mechanism by which insiders generate influence: through the creation of strong signals that affect risk perceptions. Although our findings are primarily generalizable to the study of anti-corporate activism, we maintain that similar dynamics may underlie insider influence in the policymaking realm (e.g., ignoring insider demands may expose a politician to significant electoral risk).

These results, however, should not be interpreted as evidence that primary stakeholder activism contributes to the greening of firms while secondary stakeholder activism does not. In fact, according to Eesley and Lenox (2006), actions such as proxy votes generally influence firms' behaviors less than civil suits, protests, boycotts, and letter writing. Taken together with findings from previous studies, our study's findings suggest an intriguing possibility: shareholder resolutions on environmental issues shape perceived environmental risk even though they may not influence firms' behavior. Conversely, actions such as protests, demonstrations, and lawsuits do not alter the perception of environmental risk, even though they may influence firms' behavior. These opposing effects are likely due to different mechanisms of influence. Shareholders and other primary activists work through formal means and make relatively rare appearances in the public eye. Risk analysts who follow these companies closely know about shareholder activism, but the broader public, which cares about a firm's reputation and image, does not.

In contrast, secondary activists use public protest to actively denigrate their targets' public image and reputation (King 2008a). Concerns about image and reputation often force corporate decision-makers to listen to protestors, despite their lack of influence on a firm's risk profile. As King (2008a) demonstrates, boycotts are most likely to influence a firm when that firm has already experienced a reputational decline and is therefore hypersensitive to image concerns. The implication of this is that protests in the aggregate may be ineffective in shaping risk perceptions but, under the right conditions, protests or boycotts can severely threaten a firm's public image, sufficient to impel a change in corporate policy. These shifts in corporate policy are not accompanied, however, by changes in analysts' risk assessments.

A second important (and surprising) finding is that neither primary nor secondary shareholder activism has a direct negative effect on firms' financial performance. These results diverge slightly from King and Soule (2007), who show that protests negatively affect firms' short-term financial performance. We believe the reason for this divergence is the focus on different time frames. King and Soule (2007) measure financial performance as short-term abnormal stock

price returns—immediate investor reactions to a protest event—but we measure it as longer-term firm valuation (Tobin's q). Moreover, they find that protests are most effective when a company is relatively underexposed in the media prior to the protest, suggesting that the revelation of novel information by protestors accounts for the drop in investor confidence. In contrast, taking into account the longer time horizon of our study, it is possible that firms may effectively discredit protestors' claims if given sufficient time.

This interpretation is supported by research demonstrating that companies actively launch public relations counter-attacks against protestors (McDonnell and King 2010). Indeed, greenwashing—making false or misleading marketing claims about products' greenness—is a common preemptive tactic used by companies to insulate themselves against claims of environmental wrongdoing. A survey of more than 1,000 products sold in six category-leading big-box stores found that greenwashing is pervasive: "all but one made claims that are demonstrably false or that risk misleading intended audiences" (TerraChoice Environmental Marketing 2007). Many companies also use marketing strategies to sidestep criticisms of their environmental practices. Consider the following example: when Chevron was the target of a campaign against its offshore drilling and oil exploration in the Arctic National Wildlife Refuge and protestors started a boycott against its support of "wise use" anti-environmental groups during the early 1990s, its response was to launch the "People Do" ad campaign, which touted the environmental benefits of some of its projects (Letto 1995). Secondary activism may thus unintentionally spur financially beneficial campaigns of this type.

A third important finding of the study is that perceived environmental risk has a negative effect on firms' financial performance. Scholars who try to identify the business case for corporate responsibility are searching for a holy grail because "if there is a business case for corporate responsibility then we have a 'win-win' where everybody gains, including shareholders" (Smith 2008:281). So far, the search has produced mixed results. Some researchers argue that corporate social responsibility is positively associated with financial performance (Waddock and Graves 1997), but others argue that the association is spurious because R&D intensity is not taken into account (McWilliams and Siegel 2000). This has led some researchers to conclude that "most investors just don't care" (Kurtz 2008:267). As one champion of corporate social responsibility recognizes: "I have rarely seen a company's share price move up as a result of a new social initiative taken by the company. For most of Wall Street, it's irrelevant" (Kurtz 2008:267). Our findings show that although investors may not really care about firms' actual environmental performance, they care about how firms' environmental risk is perceived. Investors are wary of firms they perceive as unable to manage environmental risks, particularly if environmental crises occur. These results are consistent with the prospect (or loss aversion) theory, which shows that people are risk averse and more sensitive to loss than to potential gains (Kahneman and Tversky 1979; Tversky and Kahneman 1974).

Finally, we suggest that our findings provide an important insight about the construction of financial risk, an understudied topic in economic sociology. Risk is not simply an objective, quantified assessment of uncertainty. Rather, risk is subjectively shaped by the political and social contentiousness of the market. In our case, we show that activists can influence risk perceptions by generating market signals about the underlying environmental activities in which a firm is or is not engaged. Risk assessments are not merely the product of known firm activities that can be assessed in straightforward analysis—as we controlled for known environmental strengths in our models. Rather, risk assessments are shaped by activists challenging firms and offering contrasting views of firms' activities, calling firms' audiences to question the soundness of their practices and policies. Activists, in this sense, extend the debate

around environmental practices and policies by shaping *how* audiences perceive and evaluate firms' actions. Our findings suggest that future research ought to continue to pay attention to the link between movement activism and the various ways corporations combat the market signals created by activists, including through impression management techniques.

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Notes

1. We focus on a specific audience's perception of environmental risk: risk management analysts. We do not examine how other audiences, such as the general public, perceive environmental risks because we lack adequate data. However, we recognize that public opinion on environmental risks can interact with activism and have a significant influence on outcomes such as firms' financial performance. For an analysis of the effect of public opinion and environmental protests on environmental legislation, see Agnone (2007).
2. Investors and lenders have examined environmental risks since the 1980s, when courts started to enforce banks' responsibility for superfund sites, polluting factories, and other environmental problems facilitated by their financing. Since then many banks have developed risk management divisions as part of their commercial banking due diligence efforts. Starting in the late 1990s, a number of rating agencies began estimating firms' environmental risk, arguing that this form of risk is increasingly important for profitability.
3. In fact, as Hoffman (1997:14) notes, "there is no such thing as a 'green company.' The best one can do is describe the progression of how companies are 'going green.'"
4. See http://www.businessdictionary.com/definition/environmental-risk.html.
5. As Renn (2007:31) notes, "since risk is a mental construct there is a wide variety of constructing principles for conceptualizing it. Different disciplines within the natural and social sciences have formed their own concepts of risk; stakeholder groups, driven by interest and experience, have developed specific perspectives on risk; and, last but not least, representatives of civil society as well as the general public are responding to risks according to their own risk constructs and images."
6. This study combined searches of the LexisNexis news database for business-section stories using terms like "green" and "environmental" and "sustainable" or "sustainability" and a content analysis of 154 business stories about corporate environmental initiatives published since 2000 in the nation's 10 largest newspapers (Reynolds 2007).
7. McWilliams and Siegel (2000, 2001) found that superior environmental practices correlate with advertising intensity and suggested that firms with greater contact with consumers are more likely to improve environmental performance to signal to the public that they are environmentally conscious.
8. The survey found that 12 percent of respondents considered themselves environmentalists and an additional 58 percent were sympathetic to environmental concerns. Moreover, 71 percent of respondents believed that large corporations were doing less than their share to help reduce environmental problems, while only 21 percent believed large corporations were doing about right. In fact, corporations were perceived to be doing less than any other entity included in the survey, including Congress, the President, or local businesses (The Harris Poll, August 9 to 16, 2005; accessed July 2011 [http://www.pollingreport.com/enviro2.htm]).
9. Another form of primary stakeholder activism is employee-led movements (Raeburn 2004). However, given the limited availability of information on employee environmentalist movements, we chose not to focus on them in this study.
10. For example, in 1995 there were 55 SRI funds in the United States; by 2010 the number of SRI funds had increased to 250 and, according to one estimate, nearly 1 out of every 8 dollars under professional management in the United States today is involved in SRI. See the Social Investment Forum's website, accessed December 2010 (http://www.socialinvest.org/resources/sriguide/srifacts.cfm).
11. Consider the demonstrations and boycotts organized by Greenpeace activists, which attract considerable media attention for their use of costumes, large banners, and other dramatic forms of protest—yet they are often presented in the mainstream U.S. media as a small minority not representative of general public opinion. For a detailed discussion of mass media's representation of environmental activism, see Elliot (2006).
12. Consequently, our findings are limited to companies with large revenue that are located in the United States. See the Discussion section for more information about these limitations.
13. We use this measure because iRatings is the "number one global provider of 'extra-financial' research," as the Thomson Extel survey of institutional investors described it. Innovest was acquired by RiskMetrics in 2009. For more information on Innovest and its rating

methodology, see http://www.csrwire.com/pdf/Research_Rating_Methodology.pdf.

14. The index has a reasonable level of internal consistency (Cronbach's alpha = .65); more importantly, regressions run on each separate item do not indicate any significant differences between the independent variables of interest.
15. Innovest analysts collect data from a variety of sources, including companies (e.g., annual reports, sustainability reports, and websites), governmental agencies (e.g., Environmental Protection Agency and Department of Energy), nongovernmental organizations, industry associations, and media sources. They also conduct interviews with company representatives.
16. See Innovest's Rating Methodology, accessed August 2010 (http://www.csrwire.com/pdf/Research_Rating_Methodology.pdf).
17. iRatings analysts emphasized during a personal communication that environmental risk is a forecast of future financial performance based on their analysis of risks a company faces, not a measure of actual or past financial performance.
18. For example, the number of top-100 U.S. companies that publish a sustainability report increased from 36 in 2002 to 78 in 2008. Additionally, 20 percent of these sustainability reports include third-party comments (http://www.kpmg.com/global/en/issuesandinsights/articlespublications/pages/sustainability-corporate-responsibility-reporting-2008.aspx). Similarly, the number of U.S. companies that publish sustainability reports that conform to the Global Reporting Initiative's guidelines increased from 24 in 2003 to 183 in 2010 (https://www.globalreporting.org/network/regional-networks/gri-focal-points/focal-point-usa/Pages/default.aspx).
19. A two-year lag would be too long—risk management analysts are unlikely to respond to activism that happened more than a year ago, given that they usually assess environmental risks annually. Regrettably, a shorter lag—a few months or less—is not feasible, also because risk management analysts assess risks annually.
20. Data about top-20 environmental organizations in 2003 in terms of membership and revenue came from Bosso (2005). Most of these environmental organizations are relatively well-known: for example, Sierra Club, National Audubon Society, National Wildlife Federation, World Wildlife Fund, Environmental Defense, Friends of the Earth, Natural Resources Defense Council, and Greenpeace.
21. Although the search algorithm produced mostly valid responses, it also generated some false positives. For example, a valid result is "A group of 50 *environmentalists* and community activists started *protests* outside the Quito offices of Los Angeles-based *Occidental Petroleum* (Oxy) after company officials refused to meet with them." An example of a false positive result is "*Environmental activists* and state Democratic staffers stood under the Pennsylvania Capitol's gilded marble dome Friday and dumped shredded office paper into the boxes marked Special Delivery and addressed them to Giuliani's Manhattan office in *protest* of the Big *Apple's* export of millions of tons of trash to Pennsylvania—which has become the nation's largest trash importer." In the second case, the nickname of a city (Big Apple) is mistaken for the name of a company (Apple).
22. Ceres includes large environmental groups (e.g., Environmental Defense, Friends of the Earth, Natural Resources Defense Council, National Wildlife Federation, and Sierra Club) as well as sustainable investing management firms (e.g., Ethical Funds, Boston Common Asset Management, and Green Century Funds) and religious groups active on environmental issues (e.g., Evangelical Lutheran Church in America and Presbyterian Church). See Ceres's website, accessed December 2010 (http://www.ceres.org/about-us).
23. We checked for index unidimensionality and found that Cronbach's alpha has the value .55. Because this is below the commonly accepted value (.60), we tried alternative models in which we included community strengths, diversity strengths, employee relations strengths, and human rights strengths separately. The main results did not change significantly; for simplicity in presentation we do not show these results.
24. The environmental strengths are beneficial products and services ("the company derives substantial revenues from innovative remediation products, environmental services, or products that promote the efficient use of energy, or it has developed innovative products with environmental benefits); pollution prevention ("the company has notably strong pollution prevention programs including both emissions reductions and toxic-use reduction programs"); recycling ("the company either is a substantial user of recycled materials as raw materials in its manufacturing processes, or a major factor in the recycling industry"); clean energy ("the company has taken significant measures to reduce its impact on climate change and air pollution through the use of renewable energy and clean fuels or through energy efficiency"); communications ("the company is a signatory to the Ceres Principles, publishes a notably substantive environmental report, or has notably effective internal communications systems in place for environmental best practices"); property, plant, and equipment ("the company maintains its property, plant and equipment with above average environmental performance for its industry"); and management systems ("the company has demonstrated a superior commitment to management systems, voluntary programs, or other environmentally proactive activities"). See KLD Research and Analytics (2006).
25. One limitation of this variable is that it uses 1990 as a baseline; to address this limitation, we also used a different, albeit less complex, measure of state-level regulatory pressures. We coded this variable using information from Wingfield and Marcus (2007) about

the Green Score Index, which ranks states on different environmental policies. This alternative measure produced similar results and is not included in the final results. The other limitation of this variable comes from the fact that most companies operate in different states, so different local branches and divisions may be exposed to different levels of regulatory pressure. An alternative measure that would account for environmental pressures in all states in which companies operate is, regrettably, unfeasible.

26. In fact, the first stage regressions (not shown) indicate that this is true. The number of past instances of shareholder and environmental activism and the number of human rights concerns all have statistically significant positive effects on the likelihood of a firm being targeted by primary and secondary activism.
27. One corporate opportunity results from company size: large companies targeted by activists may be perceived to have a higher environmental risk because they are more visible. Another opportunity results from the type of governance: firms with dictatorship-type governance that are targeted by activists may be perceived to have a higher environmental risk because they are less open to engaging stakeholders. A third opportunity results from companies' reputations: firms with very good reputations that are targeted by activists may be perceived to have a higher environmental risk because they are sensitive to reputation loss.

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