

The Globalization of Corporate Environmental Disclosure: Accountability or Greenwashing?

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The Globalization of Corporate Environmental Disclosure: Accountability or Greenwashing?[§]

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Despite the increase in corporate environmental disclosure, there remains substantial heterogeneity in the extent to which corporations reveal their environmental impacts. To better understand this heterogeneity, we identify key country- and organization-level determinants of corporate environmental disclosure. We focus on institutional factors related to firms' global embeddedness to describe how external environmental pressures emanating from governments and civil society influence corporations environmental transparency. We also focus on the extent to which corporate environmental disclosure is symbolic and, in particular, what leads corporations to selectively disclose relatively benign environmental impacts to create an impression of transparency while masking their true environmental performance. We hypothesize that key organizational characteristics reflecting visibility, such as size and environmental impact, shape this type of symbolic compliance and that these relationships are moderated by institutional pressures. We test our hypotheses using a novel panel dataset of 4,646 public companies in many industries, headquartered in 46 countries during 2005-2008, when environmental disclosure increased among many global corporations. Controlling for a host of organizational, industry, and national characteristics, we find evidence to support most of our hypothesized relationships. Contributions to understanding the decoupling of globalization processes and how organizations respond to institutional change are discussed.

Research on globalization has consistently shown that the behaviors of states and other actors are converging to isomorphic rationalized models (e.g., Guler et al. 2002; Longhofer and Schofer 2010; Meyer et al. 1997). Worldwide trade networks, the interconnection of nations in international non-governmental organizations (INGOs), and associated cross-national discourse have all been shown to lead to similarities in economic behavior across countries and other

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global actors (see Guillén 2001a for a review). For example, Frank, Hironaka, and Schofer (2000a) analyzed how national government actions to protect the natural environment (e.g., passing an environmental impact law, initiating an environmental ministry) diffused across countries as a result of countries' connections to global institutions such as the United Nations and INGOs. But an alternative stream of research, mainly examining actor behavior in more limited sets of countries, has identified several factors that impede convergence, including path dependencies and longstanding traditions that maintain national distinctions (Bebchuk and Roe 1999; Hall and Soskice 2001; Hamilton and Biggart 1988). Key questions at the intersection of these two approaches relate to variation in the implementation of global norms by different types of actors. For example, how and why do national institutional characteristics influence the extent to which global trends are adopted by lower-level such actors as corporations? Are national government actions enacted in response to globalization merely “myth and ceremony” with little actual effect on the actual actions of lower-level actors (Buttel 2000; Yearley 1996)? Or do certain country-level characteristics facilitate corporate adoption of global practices? When are organizations' apparent adoption of global norms particularly likely to be mere symbolic compliance?

We seek to address these outstanding issues regarding influences that operate at multiple levels of the global system by studying the behaviors of corporations headquartered in countries around the world. Corporations' behaviors have been shown to be shaped in part by exposure to global norms (Guler et al. 2002), but also by the idiosyncratic characteristics of their national environments (e.g., Dobbin 1994). Furthermore, corporations are susceptible both to “top-down” institutional pressures from governmental actors (e.g., Dobbin and Sutton 1998) and to “bottom-up” institutional pressures from civil society and activists (e.g., King 2008). In addition, a

corporation's organizational characteristics are likely to significantly influence its response to institutional pressures; for instance, corporations' pollution intensity and size may influence response to global environmental norms. Most prior work on the globalization of organizational practices has analyzed country-level aggregations, not behavior at the organizational level (e.g., Guler et al. 2002), so the processes by which corporate responses vary in response to globalization pressures remains unclear. Lacking has been a systematic analysis of not only how individual corporations balance different types of institutional pressures associated with globalization, but also how organizational responses to these pressures might be symbolic and contingent upon organizational characteristics.

We examine when and how corporations respond to global and national institutional pressures in the context of the global movement for corporate environmental disclosure. This is an appropriate context for a number of reasons. First, this topic lies at the intersection of the global environmental movement (Yearley 1996; Frank et al. 2000a) and the increasing rationalization of society through the spread of accounting and recordkeeping norms and practices (Ventresca 1995; Drori, Jang, and Meyer 2006; Jang 2006). Second, many corporate environmental impacts are truly global issues (Frank et al. 2000a). Greenhouse gas emissions, for instance, are associated with global climate change, and many other pollution issues cross national boundaries. Even local environmental issues that many governments confront often resemble those being confronted by governments in other countries. Finally, the idea that corporations should voluntarily disclose information about their environmental impacts has recently become increasingly pervasive (Eccles and Krzus 2010). But while environmental disclosure is increasingly seen as a global issue with best practices based on global standards such as the Global Reporting Initiative, there is still tremendous variation in the types and

amount of information disclosed.

We examine the voluntary environmental disclosure decisions of 4,646 large publicly traded companies, with headquarters in 46 countries, during the years 2005-2008. This was a period of a dramatic increase in environmental disclosure activity; of the 250 largest companies in the world, fewer than half issued sustainability reports in 2004, but more than 80% did so by 2008 (KPMG 2008). Using company- and country-level data, we focus on organizational characteristics and national institutional factors that may promote greater environmental disclosure, both in quantity and in substance. We examine global embeddedness through processes associated with home-country governmental action in the environmental realm, including environmental governance and membership in international governmental organizations (IGOs). We also examine processes associated with a country's citizenry, such as access and exposure to the global society and civil protections that allow for activism.

Studying the behavior of thousands of corporations across 46 nations' institutional environments, we can better identify the extent to which actors within national systems are influenced by globalization pressures, not only directly but also through processes mediated by the government and citizenry of their headquarters country. As Longhofer and Schofer (2010: 506) note in their study of environmental associations, it is important to understand how the "world polity not only affects the state but penetrates down to civil society as well." By examining how thousands of corporations across scores of countries respond to global institutional pressures, our study builds on this insight, and furthermore, contributes to globalization research by addressing the critique that the globalization of environmentalism is nothing more than myth and ceremony at the nation-state level with limited effect on lower-level actors such as organizations (Buttel 2000; Yearley 1996).

Recognizing that disclosures issued in response to global trends may only be symbolic, we also investigate how key visibility-enhancing characteristics of corporations, including their size and the environmental damage associated with their operations, affect the extent to which firms engage in this behavior. We identify a specific strategy of symbolic compliance—selective disclosure, whereby firms overemphasize positive aspects of particular performance metrics to mask their less impressive actual performance—that has not previously been well-examined. Our study thus connects institutional research with the emerging focus on environmental greenwashing (Lyon and Maxwell 2011), the promotion “environmentally friendly programs to deflect attention from an organization’s environmentally unfriendly or less savory activities” (Webster’s New Millennium Dictionary of English 2009). While greenwashing is specific to our environmental context, our approach contributes to institutional theory by unpacking selective disclosure of less-damaging activities to deflect attention from more-damaging activities as a general and pervasive strategy of symbolic corporate compliance.

THE GLOBALIZATION OF CORPORATE ENVIRONMENTAL DISCLOSURE

The Globalization of Environmentalism

Researchers disagree about the extent to which increasing globalization is changing the behavior of economic actors (Guillén 2001a). Some have shown increasing homogeneity among global societies, governments, and corporations (Coffee 1999; Guillén 2001b; Inglehart and Baker 2000; Williamson 1996) as global trade and international organizations have led to nation-states increasingly adopting Western-style rationality and governance principles and structures (Meyer et al. 1997; Drori et al. 2006). Empirical assessments of this “world society” hypothesis have focused significantly on the globalization of national environmental laws and activities. The

rise of the environmental movement is seen as a prime example of the global “blueprints” that influence the actions of nation-states. For instance, many environmental institutions—including national parks, international environmental organizations, and environmental laws and ministries—diffused to nation-states as a result of countries’ engagement with intergovernmental organizations such as the United Nations and INGOs rather than as a result of country-specific factors such as environmental degradation and support for environmentalism (Frank 1997; Frank et al. 2000a; Schofer and Hironaka 2005). Recently, Longhofer and Schofer (2010) showed that environmental associations have spread—particularly to the developing world—through global cultural processes rather than through material factors.

While these studies highlight the importance of global cultural diffusion, others have argued that national cultures and traditions have an enduring influence (Hofstede 2001). Rationality in this perspective is neither universal nor reflected in global culture, but instead is derived locally through country-specific rationalized meaning systems (Dobbin 1994). In a sense, firms are embedded in national institutions and relationships that make each national economy unique (Bebchuk and Roe 1999; Guillén 2001b; Hamilton and Biggert, 1988; Khanna, Kogan, and Palepu 2006).

In the environmental realm, Yearly (1996) disputed the intrinsic global character of modern environmentalism. Critiques have argued that the Frank, Hironaka, and Schofer studies described earlier overlooked a substantial body of literature identifying domestic antecedents of national and international environmental policy (Buttel 2000). A number of studies have found that rising environmentalism has resulted from changes in domestic circumstances, including increasing degradation of the natural environment (Nanda 1983; Thomas 1992) and rising affluence which frees citizens to pursue cleaner environments, having met their more basic needs

(Inglehardt 1990). An important element of the critique of global environmentalism is that many environmental actions by nation-states could merely be examples of decoupling—simply a veneer of compliance to appear legitimate. For example, in a related context, Hafner-Burton and Tsutsui (2005) showed that states adopted human rights treaties to appear legitimate, but did not improve their own human rights practices. Similarly, nation-states might adopt environmental laws and policies to acquire or maintain legitimacy, but then do little to alter the behavior of polluters.

To better understand the extent to which globalization processes are having an actual effect on the behaviors of actors—and eventually on the environment—scholars must look beyond the diffusion of national environmental institutions (cf. Longhofer and Schofer 2010). We therefore examine (a) the extent to which corporations are directly affected by both global norms and domestic institutional environments and (b) how corporations’ characteristics shape their strategic responses.

Corporate Environmental Disclosure

Transparency about corporate environmental impacts is an important part of the global environmental movement that has emerged over the past decade (Eccles and Krzus 2010). A growing number of stakeholders—including investors, consumers, and governments—are concerned that assessing organizational performance requires a more holistic picture than financial indicators can provide and have increasingly advocated that companies disclose information about their environmental and social performance (AICPA 2008). Many advocate that corporations’ sustainability should be evaluated according to a “triple bottom line” of environmental, social, and financial performance (Elkington 1998; Marshall and Toffel 2005). The governments of France and Denmark, among others, have recently required various degrees

of social and environmental reporting. The capital allocated to socially responsible investment (SRI) funds, many of which screen for environmental performance, has also dramatically increased. As of 2010, approximately 11% of all assets under management in the United States were in mutual funds that had social or environmental screens.^a

Since the first separate voluntary corporate environmental reports were published in 1989, the number of companies across the globe that have issued these reports has increased dramatically (Kolk 2004; Kolk and Perego 2010). Prior research has focused extensively on the industry-level and company-level antecedents of reporting, with the general conclusion that industries and firms are more likely to issue voluntary environmental reports to the extent that they pollute more (Kolk, Walhain, and Van de Wateringen 2001; Kolk 2005). Figure 1 illustrates the substantial growth in sustainability reporting over the last 20 years, depicting the growing prevalence of sustainability reports among the 100 largest companies in five countries (KPMG 2002, 2005, 2008; Kolk 2004). The chart shows that, while environmental reporting has increased, there is significant variation across countries. In Japan and the United Kingdom, almost all of the largest companies issue environmental reports and over 75% do in the United States, but for many other countries, the figure is dramatically lower.

Insert Figure 1 about here

While issuing separate reports does indicate a company's orientation to the global voluntary disclosure movement, it only imperfectly indicates the extent of its commitment to environmental disclosure, as reports vary significantly in their content and comprehensiveness (Kolk 2004). Corporate environmental disclosures can also be made through a number of other

^a Social Investment Forum, "Socially Responsible Investing Facts," <http://www.socialinvest.org/resources/sriguide/srifacts.cfm> (accessed June 23, 2010).

channels, including annual financial reports (Meek, Roberts, and Gray 1995), integrated financial and sustainability reports (Eccles and Krzus 2010), corporate websites, carbon registries, and government and industry databases (Kolk, Levy, and Pinkse 2008; Reid and Toffel 2009). Thus, accurately assessing the degree of corporate disclosure, as we do in this study, requires data from multiple sources. In addition, corporate environmental impact can take many forms—including the emission of greenhouse gases, toxic and ozone-depleting substances, and conventional pollutants. Both land and water can be affected, as with the generation of solid waste and the use of pesticides and fertilizers. Disclosing environmental performance along these dimensions demonstrates a company’s commitment to accountability; some observers consider it a requirement for credible corporate sustainability efforts.

THEORY AND HYPOTHESES

Below we develop an interrelated theory and hypotheses that incorporate how both global and national institutional pressures influence corporate actions such as environmental disclosure. In addition to examining direct effects, we examine how organizational factors influence corporate responses to these institutional pressures, leading to variation in symbolic compliance (Meyer and Rowan 1977).

Global Embeddedness of Headquarter-Country Government and Corporate Disclosure

Prior research on global embeddedness is based on the idea that connections with and exposure to global norms leads governments to adopt practices, such as laws and governance, reflecting those norms (e.g., Meyer et al. 1997; Frank et al. 2000a). As Boli and Thomas (1997: 172) note, national governments have come to look like a “unitary social system, increasingly integrated by networks.” In essence, the dense network ties that link countries serve as

pathways through which normative and mimetic forces influence rates of adoption of globally accepted norms such as quality standards (Guler et al. 2002).

Building on this literature, we focus on two interrelated headquarter-country characteristics that would expose corporations to greater institutional pressure for environmental disclosure: the country's membership in international governmental organizations and its own environmental regulation and enforcement. We argue that both factors signal to corporate managers the importance of environmentalism to that country. In our predictions, we focus on a company's headquarter location because, as the likely location of the company's senior managers, board of directors, and shareholders attending annual meetings, it is the institutional environment with the most influence on corporate decisions.^b

International Governmental Organization Connections

Much work on globalization has examined how participation in international organizations and treaties signals a government's incorporation into what Meyer, Boli, and colleagues call the "world polity" (Boli and Thomas 1997, 1999; Meyer et al. 1997). A number of researchers have studied the importance of government involvement in IGOs to the spread of global norms, arguing that such participation reflects the government's values and beliefs and that these organizations are a potent mechanism for the international diffusion of ideas (Guler, Guillén, and McPherson 2002; Drori et al. 2006; Beckfield 2010). Connectedness through the IGO network (Beckfield 2010) has been shown to have a normative influence on nations that spurs democratization (Torfason and Ingram 2010), international trade (Ingram, Robinson, and

^b Conceptually, one might wish to examine the influence from all the countries in which a company operates. Unfortunately, we did not have the data with which to pursue this. We could obtain data on foreign sales from only a small subset of our sample (36%, or 5374 ÷ 14693, of the firm-year observations in our sample) and it is unlikely that this was a random subsample.

Busch 2005), and neoliberal restructuring (Henisz, Zelner, and Guillén 2005).

A number of factors suggest that these effects of IGOs at the nation-state level also likely influence corporate environmental disclosure. First, recent research has revealed that IGO connections influence normative processes within nation-states, as shown by the spread of environmental NGOs (Longhofer and Schofer 2010). Nation-states signal their endorsement of global environmental frameworks by joining environmental IGOs. As noted above, a series of articles by Frank et al. (2000a, 2000b) have shown that involvement in IGOs such as the United Nations influences national governments' adoption of institutions to reduce pollution levels and to promote conservation. Such actions signal to corporations that they should pay more attention to their own environmental activities; disclosing more information is a common practice associated with such adoption of environmental norms (Short and Toffel 2008; Eccles and Krzus 2010). Thus, in the context of corporate environmental reporting, these arguments suggest that a government's participation level in environmental IGOs conveys to corporations its emphasis on environmentalism, which influences the extent to which these corporations adopt global environmental practices such as corporate environmental disclosure.

Hypothesis 1: Companies will exhibit more environmental disclosure when headquartered in countries with greater participation in environmentally-oriented international governmental organizations.

National Environmental Regulation and Enforcement

National institutions governing the environment, such as environmental regulation and enforcement, can affect corporate environmental disclosure through two processes. First, in line with the sociological perspective on the normative effects of laws, environmental legislation and regulation set expectations and send signals that shape corporate managers' sense of what corporate behaviors are viewed as appropriate. Edelman and Suchman (1997: 495) describe the

law as being “less a threat than a sermon,” a way for the state to signal meaning as opposed to issuing specific commands. A series of studies have shown, for instance, how changes in the legal environment in the wake of the Civil Rights Act of 1964 led organizations to adopt organizational structures that signaled normative compliance with the emerging regulatory regime, even in areas that were not specifically mandated (e.g., Dobbin et al. 1993; Edelman 1990, 1992; Sutton et al. 1994). More stringent environmental laws and regulations, much like a government’s involvement in IGOs, signals to corporations that the government considers environmentalism to be important. The stakeholders that led these governments to be more environmentally stringent are also often particularly interested in corporate environmental behavior, including transparency, resulting in particularly strong demand for corporate environmental disclosure in such countries. These factors will lead corporations in countries with more stringent environmental laws and regulations to be especially attentive to their environmental activities and to be particularly transparent.

Second, a country’s environmental governance can also affect corporate environmental disclosure in line with the economics and strategy perspective that firms adopt self-regulatory practices to preempt regulation or to curry favor with a regulator. Documented examples include companies’ adoption of the Responsible Care program (King and Lenox 2000) and voluntary disclosure of greenhouse gas emissions (Reid and Toffel 2009) and compliance violations (Short and Toffel 2010). Thus, in countries with greater environmental stringency, the threat of regulatory expansion may be perceived (by corporate managers) to be particularly strong, and corporate environmental disclosure is one strategy firms can use to appear accountable in the hope of diffusing the pressures to increasingly tighten regulatory requirements.

These two arguments lead to the following hypothesis:

Hypothesis 2: Companies will exhibit more environmental disclosure when headquartered in countries with more stringent environmental regulations.

Global Embeddedness of Headquarter Country's Civil Society and Pressure on Corporations

A number of studies over the past decade have also shown that, since World War II, local populaces have displayed increasing awareness and activism regarding global social issues (Meyer et al. 1997) and that, in many instances, such growth in civil society activities can be predicted by increases in country-level exposure to global norms. For example, Tsutsui and Wotipka (2004) showed, in their study of citizen participation in international civil rights organizations, that the effects of embeddedness in global civil society and of international flows of human resources grew stronger over time while domestic factors became less important.

Two important factors affect how much pressure civil society pressures exert on corporate actors to disclose more information about their operations and performance. The first is the extent to which the civil society is exposed to global norms. As the networks linking countries, organizations, and individuals expand and become more intense, global norms of transparency are increasingly disseminated. The second factor is ability of a country's civil society to voice its concerns about corporate environmental behavior. To assess the influence of this factor, we focus on the extent to which each country protects its citizenry's civil liberties and political rights. In addition to hypothesizing a direct effect of each of these factors on disclosure, we propose an interaction effect, since the norms a county's citizenry acquires from the global society are more readily expressed in political contexts that provide for civil rights and political liberties, including free speech and the right to seek political redress.

Citizenry Embeddedness in Global Society

As the networks linking countries, organizations, and people expand and become more intense, world models are increasingly disseminated to local populaces. Frank et al. (2000a) show that environmental movements grow more quickly in nations more exposed to global civil society. More generally, such a process is known in the literature as a “norm cascade”: A norm emerges in global society, becomes taken for granted, and influences the activities of individuals and organizations across the globe (Sunstein 1997; Risse-Kappen, Ropp, and Sikkink 1999). Tsutsui and Wotipka (2004: 597) describe the basic causal process as “citizens get exposed to models concerning progress and justice, and eventually regard attention to human rights to be the norm. As a result, citizens would be more likely to engage in activities specific to human rights.” in a country having more connections with international society (see also Hafner-Burton and Tsutsui 2005).

There are a number of mechanisms through which a country’s citizenry can be exposed to global society. While the effect of the presence of INGOs on information diffusion and the mobilization of the citizenry has been frequently examined (e.g., Tsutsui and Wotipka 2004), we focus more specifically on information diffusion mechanisms and how the globalization of societies is “mediated through a variety of flows including people, information and ideas, capital and goods” (Dreher 2006: 1092). The globalization of a society is a complex process and can include exposure to global ideas by means as diverse as international trade, payments to foreign nationals, presence of foreign embassies, international personal contacts such as telephone traffic, tourism, and information flows such as Internet access.^c

^c To foreshadow our empirical approach, we measure the global exposure of a country’s citizenry through a widely used index designed for this purpose (Dreher 2006). Our results are also robust to using the more typical measure of INGOs (e.g., see Tsutsui and Wotipka 2004; Hafner-Burton and Tsutsui 2005). We discuss these measures and robustness checks more fully in the methods section.

Research also shows that the effects of global norms are particularly salient for elite actors such as corporate executives. For example, national elites have been shown to be more likely to articulate the need for greater civil society involvement in public debates in countries that participate in international conferences, an indication of the elite's socialization in global norms (Reimann 2002). External corporate stakeholders also have important influences on corporations (Mitchell, Agle, and Wood 1997; Eesley and Lenox 2006). For example, global consumers exert coercive pressures by asking suppliers and contractors to conform to global norms (Guler et al. 2002).

These arguments suggest that, as a country's civil society acquires greater exposure to global norms and ideas, global disclosure norms will spread to corporations in that country.

Hypothesis 3: Companies will exhibit more environmental disclosure when headquartered in countries whose citizens are more connected to global society.

Protection of Civil Liberties and Political Rights

Many social movements, particularly regarding corporate social and environmental issues, have recently shifted tactics from pressuring governments to institute legal changes to pressuring corporations directly (Davis et al. 2008; King 2008; Reid and Toffel 2009).

Researchers have revealed instances of social movements influencing corporate behavior; for example, the German movement against genetic engineering in the 1980s affected six pharmaceutical companies' commercialization of biotechnology (Weber et al. 2009) and activist pressures and the desire to avoid the "sweatshop stigma" (Bobbin 1997) led several major apparel makers to adopt voluntary codes of conduct and internal compliance-monitoring programs (Chatterji and Levine 2006; Bartley 2007; Hiscox, Schwartz, and Toffel 2009).

A variety of global social movement activities have addressed corporate environmental

issues in particular. For example, many environmentalist groups have focused on aggressively campaigning against particular companies (Bartley and Smith 2010), while other groups have worked more collaboratively with firms seeking to avoid more aggressive efforts (Sasser 2003; Eesley and Lenox 2006; Hendry 2006; Bartley 2007). Activists have also promoted corporate self-regulatory structures in areas in which formal legal guidelines are weak or nonexistent (Reid and Toffel 2009).

However, the potential influence of social movements on corporate behavior relies ultimately on collective action and engagement, citizen pressure, and sometimes consumer boycotts. To instigate any of these actions, social movements rely on various forms of the mass media, including media coverage of their protests and campaigns and, more recently, direct access to civil society through blogs, websites, and social media. As a result, the ability of social movements to mobilize via protests and the mass media requires government protection of freedoms of speech and association. We therefore argue that the civil and political freedoms provided in the country of a corporation's headquarters—the location of its senior managers, boards of directors, and shareholders attending annual meetings—will be very salient in terms of permitting or inhibiting the influence on corporate decision-makers of global social movements such as increasing corporate environmental disclosure. As a result, we predict that corporations will provide greater environmental disclosure if they are headquartered in countries whose governments actively protect these freedoms.

Hypothesis 4: Companies will exhibit more environmental disclosure when headquartered in countries that provide more political rights and civil liberties.

We hypothesize that exposure to globalization and protection of political rights and civil liberties will not only directly affect environmental disclosure (H3 and H4, respectively), but will

also interact with each other. Citizens exposed to globalization are better able to voice their demands that corporations conform to global norms such as environmental transparency—and ultimately to change corporate environmental behavior—when they have the civil liberties and political rights which enable them to voice concerns in the public square and to credibly threaten political and civil action. We therefore expect that greater exposure to globalization is especially likely to be associated with higher levels of corporate environmental disclosure in countries that afford high levels of political rights and civil liberties.

Hypothesis 5: Companies will exhibit more environmental disclosure when headquartered in countries whose citizens are more connected to global society, especially in countries that provide greater political rights and civil liberties.

Organizations' Symbolic Compliance with Global Disclosure Pressures

While institutional pressure is an important isomorphic pressure on firms, recent research has shown that organizational features moderate these processes, resulting in variation in institutional systems (Marquis and Huang 2009, 2010). Less explored, however, is how a common organizational response to institutional pressure—symbolic compliance (Meyer and Rowan 1977; Oliver 1991)—may vary with organizational characteristics. Symbolic compliance occurs when organizations seek to gain legitimacy amongst stakeholders by merely appearing to adopt institutionalized practices without actually implementing substantive changes. We build on the symbolic compliance literature in two ways. First, we theoretically distinguish several types of symbolic compliance, including *decoupling* (Meyer and Rowan 1977) and such *attention deflection* mechanisms as *substitution* (Okhmatovskiy and David 2011) and *selective disclosure* (see Figure 2). Second, in our hypotheses, we focus on the novel selective disclosure strategy that we identify, and argue that a key organizational characteristic—visibility—limits

firms' ability to engage in selective disclosure.

Insert Figure 2 about here

Symbolic Compliance Strategies

Perhaps the most well-known symbolic-compliance strategy is decoupling (Meyer and Rowan 1977; Tilcsik 2010), which occurs when organizations purport to “maintain standardized, legitimating, formal structures, while their activities vary in response to practical considerations” (Meyer and Rowan 1977: 357). For example, a series of studies by Westphal and Zajac (1994, 1995, 2001) revealed many instances in which corporations publicized a variety of activities that stakeholders had demanded, such as stock buybacks and executive incentive programs, but did not actually implement them. Thus, decoupling is a strategy whereby companies communicate compliance with external standards, yet do not implement the announced practices.

A less-explored type of symbolic compliance is what we term *attention deflection*, which occurs when companies engage in new practices or selectively report certain activities in order to avoid scrutiny on other domains where their performance does not conform to institutional norms. Attention deflection can take the form of *substitution* when companies substitute a new standard for the institutionally proscribed one (Okhmatovskiy and David 2011). Okhmatovskiy and David (2011) showed that Russian companies created their own internal governance standards in order to appear legitimate when confronted with global standards that were more stringent. Similarly, companies have developed voluntary self-regulation programs to establish their own compliance rules in order to avoid more stringent government regulation or more stringent standards developed by NGOs. In a well-known example of the former, the chemical industry, threatened with stringent regulation following the Bhopal disaster, established its own

less-stringent Responsible Care program (Gunningham 1995). Similarly, when environmental NGOs developed an environmental standard and labeling scheme for the forest products industry, the industry developed its own version that many viewed as less stringent (Sasser et al. 2006). Another substitution tactic is to participate in programs to enhance the organization's social or environmental reputation in order to deflect attention from less admirable activities. For example, companies publicize their corporate social responsibility (CSR) programs to deflect attention from boycotts (Morris and King 2010) and engage in "pinkwash" by adorning their products with pink ribbons in support of breast cancer while manufacturing products associated with causing the disease (Breast Cancer Action 2011). Thus, substitution processes are characterized by companies pursuing a voluntary program or initiative in order to deflect the attention of key stakeholders away from less savory activities.

Another form of attention deflection is *selective disclosure*, which occurs when organizations disclose certain benign information while hiding more damaging information. Similarly, Pfeffer (1981: 30) theorized that organizations engage in concealment strategies (Oliver 1991; Abramhson and Park 1994) by "keeping secret the information that might be necessary or useful for evaluating organizational results." Specific to our domain where companies disclose their environmental impacts, the term "greenwashing" has been defined as "the practice of promoting environmentally friendly programs to deflect attention from an organization's environmentally unfriendly or less savory activities" (Webster's New Millennium Dictionary of English 2009). We argue that, in our context, selective disclosure occurs when firms disclose environmental performance indicators that are relatively benign while concealing more harmful indicators, giving a false appearance of transparency and accountability. Below, we hypothesize that more visible corporations facing institutional pressures are less likely to

selectively disclose because they face greater scrutiny.

Organizational Visibility and Selective Disclosure

It is well established in the literature on corporate environmental disclosure that larger organizations (Alnajjar 2000; Berthelot, Cormier, and Magnan 2003; Cormier and Magnan 2003) and firms in environmentally damaging industries (Kolk 2005) are more likely to disclose their environmental impacts. Similarly, larger organizations are more likely to report their adoption of such corporate social practices as progressive personnel practices and structures (Kelly and Dobbin 1998; Dobbin and Sutton 1998). In these studies, larger firms' actions are presumed to be more visible in society and therefore subject to greater scrutiny by stakeholders. Greening and Gray (1994), Rehbein, Waddock, and Graves (2004), and King and Soule (2007) also suggest a "visibility effect" spurring enhanced social and environmental action.

In these studies, larger organizations face heightened scrutiny by stakeholders in institutional environments that are assumed (often implicitly) to permit both scrutiny of companies and political and social action against them. In fact, different countries have quite distinct institutional environments in which such scrutiny and action enjoy different degrees of legitimacy. We assert that more visible firms—in our context, those that are larger or more environmentally damaging—are less likely to engage in attention deflection strategies, particularly when their institutional environment includes government actors more connected to global norms of environmental disclosure. In such an institutional environment, governments are more likely to be cognizant of selective disclosure and to be responsive to activist charges that particular companies are engaging in selective disclosure practices they deem to be illegitimate. Government agencies themselves have been found to direct greater scrutiny to more visible organizations and might therefore be more likely to follow up on such charges. As Edelman

(1992: 1430) noted, “larger organizations are more vulnerable to threats from the legal environment,” which makes larger organizations more likely to conform to social expectations, especially during periods of government scrutiny. These arguments lead us to propose:

Hypothesis 6a: Visible companies’ tendency to selectively disclose will be tempered when headquartered in countries with greater participation in environmentally-oriented international governmental organizations.

Hypothesis 6b: Visible companies’ tendency to selectively disclose will be tempered when headquartered in countries with more stringent environmental regulations.

There are several reasons to expect pressures emanating from civil society to discourage more visible firms from selective disclosure. First, social activists are more likely to scrutinize more visible firms whose violations of social norms are more likely to attract media coverage (Rehbein et al. 2004). When social actions such as boycotts garner press and thus more salience, the targeted companies are more likely to acquiesce (King 2008). In addition, Lyon and Maxwell’s (2011) analytical model predicts that activist pressure would render firms less likely to greenwash because of the heightened risk of exposure. These arguments suggest that civil society actors operating in countries embedded in global environmental norms would be especially empowered to pressure companies to conform to global norms of accountability and environmental transparency. When the national institutional context provides more civil liberties and political rights, civil society actors are more empowered to take social action and to lobby for political support when companies violate such norms. These factors lead us to propose that more visible firms will be less likely to selectively disclose when headquartered in countries whose citizens are more connected to the global society and enjoy more political rights and civil liberties.

Hypothesis 7a: Visible companies' tendency to selectively disclose will be tempered when headquartered in countries whose citizens are more connected to global society.

Hypothesis 7b: Visible companies' tendency to selectively disclose will be tempered when headquartered in countries that provide more political rights and civil liberties.

DATA AND MEASURES

Sample

To test our hypotheses, we gathered data on all 4,646 publicly traded companies listed on any of the following major stock indices during 2004-2007: ASX 200, FTSE All Share (and subsets including FTSE 100 and FTSE 350), MSCI All World Developed (and subsets including MSCI Europe), MSCI Asia ex Japan, MSCI Emerging Markets, Nikkei 225, Russell 1000, S&P 500, and S&P Emerging Markets. This sample includes companies headquartered in 46 countries. Our sample of the companies listed in these major stock indices was determined by the coverage of Trucost Plc, an organization that produces environmental profiles of these companies for socially responsible investors. Trucost provided data for some of our key measures, as described below. Tables 1 and 2 present the distribution of industries and headquarters countries for the companies in our sample.

Insert Tables 1 and 2 about here

Dependent Variables

We created three measures of corporate environmental disclosure. *Absolute disclosure ratio* and *weighted disclosure ratio* represent the extent of environmental information a company

discloses. *Selective disclosure magnitude* represents the extent to which the information a company discloses is relatively unimportant. We describe these measures in more detail below.

Absolute Disclosure Ratio

Conceptually, the *absolute disclosure ratio* reflects the proportion of a company's relevant environmental indicators that it publicly discloses in a given year. To identify a company's relevant environmental indicators, Trucost allocates the company's annual revenues amongst the industries in which it operated that year (typically from one to a few dozen of a set of 464 industries), using segment-based revenues data from the FactSet Fundamentals database as well as corporate annual reports and regulatory filings (e.g., Form 10-K). Trucost shares these allocations with the companies it profiles, who sometimes provide additional segmentation data, which Trucost incorporates into its database.

Trucost then calculates all relevant environmental indicators associated with each of these industries, relying on several pollution release and transfer registries—national databases with inventories of natural resources and/or pollutants from many establishments in various industries—including the U.S. Toxic Release Inventory, the Federal Statistics Office of Germany (Destatis), the U.K. Environmental Accounts, the Japanese Pollution Release and Transfer Register, the Australia National Pollution Inventory, and Canada's National Pollutant Release Inventory (Trucost Plc, 2008). The environmental indicators associated with each company are selected from more than 700 that Trucost tracks, including consumption of natural resources (e.g., various metals, water, oil, natural gas, and mined materials) and emissions of various pollutants to air, land, and water. The number of environmental indicators relevant to a particular company is the denominator of its absolute disclosure ratio.

While the denominator of the absolute disclosure ratio is based on the industry segments

in which the profiled company operates, the numerator reflects the company's observed behavior. Specifically, the numerator is the number of indicators that the company publicly disclosed that year, considering only disclosures of quantitative figures (e.g., tons of carbon dioxide emissions) pertaining to the firm's worldwide operations. Trucost derives this number from each company's annual report, environmental or sustainability report, corporate social responsibility report, website, and other publicly disclosed data.

For example, suppose that, based on a company's revenues from various sectors in a given year, Trucost estimates the company to have two relevant environmental indicators: releases of arsenic to waterways and greenhouse gas emissions. In this case, the denominator of the *absolute disclosure ratio* would be two. If the company disclosed quantitative figures for its worldwide greenhouse gas emissions but not for its arsenic releases, the numerator of the *absolute disclosure ratio* would be one and the ratio for that year would be 0.5, indicating that the company had disclosed worldwide quantitative figures for 50% of its relevant environmental indicators.

Weighted Disclosure Ratio

The *weighted disclosure ratio* takes this idea a step further, incorporating the materiality of these disclosures by factoring in financial estimates of environmental harm associated with each environmental indicator. Trucost applies environmental damage cost factors derived from environmental economics studies to the estimated magnitudes of the company's environmental indicators. Specifically, for every dollar of economic output associated with each industrial sector, Trucost estimates the magnitude of each environmental indicator (e.g., tons of carbon dioxide emissions per dollar of activity in the automotive assembly sector) and multiplies these by the company's revenues per industrial sector to estimate the company's total annual tonnage

of emissions released and resources consumed. These physical quantities are then multiplied by environmental damage cost factors, which represent the externalized costs to society of the environmental degradation associated with each ton of natural resource consumed and pollutant emitted. For example, Trucost estimates \$31 of environmental damage per ton of greenhouse gas emitted (Trucost Plc 2008: 5). These damage cost factors are drawn from academic research on the pricing of environmental externalities and refer to costs “borne by society through the degradation of the environment but which is not borne by the firm that uses the resource or emits the pollutant” (Trucost Plc 2008: 4). This weighted sum (physical magnitude of environmental indicators and their cost factors) is the firm’s annual estimated *environmental damage cost* and constitutes the denominator of the *weighted disclosure ratio*.

As with the *absolute disclosure ratio*, the numerator of the *weighted disclosure ratio* reflects a company’s observed behavior, but here the disclosed indicators are weighted by their environmental cost factors. Specifically, the numerator is the portion of the total environmental damage cost (the denominator) for which the company disclosed quantitative global figures.

Returning to the example introduced above, suppose Trucost estimated a company’s total environmental damage cost that year to be \$1 million, the sum of \$700,000 from releases of arsenic to waterways and \$300,000 from greenhouse gas emissions. Because the company disclosed quantitative figures for its worldwide greenhouse gas emissions but not for its arsenic releases, its *weighted disclosure ratio* would be 0.3 (calculated as $\$300,000 \div \$1,000,000$), implying that its disclosures constituted 30% of its environmental damage cost that year.

Selective Disclosure

Our measure of selective disclosure reflects the extent to which companies’ environmental disclosures emphasized environmental indicators that were not particularly

damaging to the environment. When companies focus their disclosures on relatively unimportant metrics, they create a potentially misleading impression of being transparent and accountable. We construct this measure by comparing the disclosure ratios described above to identify situations where companies are selectively disclosing. Specifically, *selective disclosure magnitude* is the *absolute disclosure ratio* minus the *weighted disclosure ratio*. In the previous example, the company's *selective disclosure magnitude* for this year would be 0.2 (0.5 – 0.3). This positive difference indicates modest selective disclosure, since the impression of transparency based on the raw count of items disclosed (50%) exceeds the substantive nature or materiality of these items (30%). The maximum magnitude of *selective disclosure magnitude* approaches 1 when a company discloses many less-harmful indicators but fewer of its more-harmful indicators. If a company discloses 99 of 100 environmental indicators but the environmental damage cost associated with that 100th indicator is 10,000 times greater than the others, then its *absolute disclosure ratio* will be a deceptively impressive 0.99, its *weighted disclosure ratio* a most unimpressive 0.01 ($[99 \times 1] \div [(99 \times 1) + (1 \times 10,000)]$), and its *selective disclosure magnitude* would be a rather poor 0.98 (0.99 – 0.01). Such a company could easily create the impression of transparency despite failing to disclose the key indicator that was by far most important in terms of environmental harm.

The minimum selective disclosure magnitude approaches -1. If the company described above disclosed only that 100th indicator and not the other 99, its *absolute disclosure ratio* would be 0.01 ($1 \div 100$), its *weighted disclosure ratio* would be 0.99 ($[1 \times 10,000] \div [(99 \times 1) + (1 \times 10,000)]$), and its *selective disclosure magnitude* would be -0.98 (0.01 – 0.99). This scenario might reflect a company deciding to focus on disclosing what mattered most in terms of environmental harm.

Independent Variables

International Governmental Organization Connections

To measure a national government's international connections, we consider its engagement in the global environmental governance movement. Our measure, the *country's engagement in intergovernmental environmental organizations*, reflects the number of memberships it holds in 100 major environmental intergovernmental organizations. These include, for example, the Food and Agriculture Organization of the United Nations, the International Council for the Exploration of the Sea, and the World Meteorological Organization. We obtained these data from the World Economic Forum's Environmental Sustainability Index (World Economic Forum et al. 2001: 244), which standardized these values from 122 countries (to a mean of 0 and standard deviation of 1).

National Environmental Regulation and Enforcement

We base our measure of the stringency of a country's environmental governance on annual data from the Executive Opinion Surveys of the World Economic Forum's Global Competitiveness Reports (e.g., Porter et al. 2004). The environmental governance portion of these surveys asked executives to assess the stringency their country's environmental regulations and regulatory enforcement. Additional questions were added to subsequent surveys, but all were coded on the same scale (1 to 7), with increasing values reflecting more stringent environmental governance. Questions on the stringency of environmental regulations and of enforcement were available for every year of our sample. Questions about environmental quality, the environmental sustainability of travel and tourism industry development, and the business consequences of environmental challenges were added in 2005, 2006, and 2007, respectively. We measured each country's annual *national environmental governance* as the mean of the

responses to these questions from all respondents in that country that year (Wainer 1976), after confirming that all of the questions reflected a single construct (Cronbach's alpha = 0.92 and exploratory factor analysis resulted in just one factor whose eigenvalue of 3.92 exceeded the common threshold of 1.0).

Citizenry Embeddedness in Global Society

To measure the extent to which countries are exposed to and integrated into ideas and trends of global society, we rely on the KOF index of globalization, an annual country-level index developed by Dreher and colleagues (Dreher 2006; Dreher, Gaston, and Martens 2008; available in ETH Zürich 2010) and used by many scholars of globalization (e.g., Fischer 2008; Potrafke 2009; Sapkota 2009; Vujakovic 2009). This *country globalization index* is based on the premises that globalization is “the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, capital and goods” (Dreher 2006: 1092) and that a country's globalization incorporates its economic, political, and social integration with other countries (Keohane and Nye 2000). The KOF index measures economic integration by incorporating the proportion of a country's gross domestic product that is based on international trade, stocks and flows of foreign direct investment (FDI), income payments to foreign nationals, as well as by incorporating trade restrictions such as import barriers and tariffs. A country's political integration is represented in the KOF index by, for example, the number of foreign embassies in the country and the number of UN peace missions in which the country has participated. A country's social integration, representing the international flow of information and ideas, is reflected in the index by measures of personal contacts (e.g., telephone traffic, international tourism, the proportion of population that are foreigners) information flows (e.g., prevalence of Internet access), and cultural affinity

and convergence in taste. The KOF index of globalization is calculated annually for 208 countries.

Because this index is relatively novel in sociological studies of globalization, as a robustness test (described below), we used an alternative measure of citizens' ability to access and participate in INGOs: the number of Union for Conservation of Nature (IUCN) member organizations operating in each country (Fredriksson, Neumayer, and Ujhelyi 2007; Park, Russell, and Lee 2007). IUCN is an international environmental membership organization with more than 1000 government and INGO member organizations, including the most significant environmental INGOs such as Conservation International, National Geographic Society, and Sierra Club. We obtained from Esty et al. (2005) a ratio that normalized the count of IUCN member organizations for 2003, the year before our sample period, by dividing it by the country's population in 2004 (measured in millions). While the KOF globalization index is a less common operationalization of global civil society penetration than INGO presence (e.g., see Tsutsui and Wotipka 2004; Hafner-Burton and Tsutsui 2005), we used as our primary measure because INGO presence reflects *both* the spread of ideas *and* freedom of association, whereas we are interested in identifying the global spread of ideas *independently of* the ability to exercise them, which we operationalize below as civil liberties and political rights protections.

Protection of Civil Liberties and Political Rights

Protection of civil liberties and political rights refers to the extent to which a country allows the open expression of citizenry-based pressures. We measure a *country's civil liberties and political rights* based on data from annual Freedom in the World reports (Freedom House 2010) that assess civil liberties (e.g., freedom of expression, organizational rights) and political rights (e.g., free elections). We used the annual national averages of political rights and civil

liberties scores, an approach used by others (e.g., Vaaler 2008; Chong, Guillen, and Riano 2010; Longhofer and Schofer 2010), and reverse coded the result so that increasing values reflect more rights and liberties.

Organizational Visibility

We measure organizational visibility in two alternative ways. Our first approach is based on an organization's size, which we measure as corporate-wide *sales*, a metric used in many studies of corporate environmental and social disclosure (e.g., Patten 1991, 1992, 2002; Hackston and Milne 1996; Cho and Patten 2007; Reid and Toffel 2009; Elsayed and Hoque 2010). We obtained sales data reported in millions of U.S. dollars from Compustat, and used log values in our models to accommodate the skewed distribution of sales.

A more context-specific approach to measuring organizational visibility is to consider the extent to which a company's operations created environmental damage, which we measure based on Trucost's estimated economic cost of such harm (Thomas, Repetto, and Dias 2007; Trucost Plc 2008), described earlier as the company's *environmental damage cost*. We report these costs in millions of U.S. dollars, using log values in our models to accommodate the skewed distribution of environmental damage.

Control Variables

Many companies headquartered in countries engaged in the Kyoto Protocol are, or will be, required to calculate and disclose greenhouse gas emissions, which will increase those companies' weighted disclosure ratios. We control for this regulatory pressure by creating an annual country-level dichotomous variable, *Kyoto Protocol*. We coded this variable "1" starting in the year when the Protocol entered into force in a country and "0" in the preceding years. We coded this variable "0" for all years for countries, such as the United States, in which the

Protocol had not entered force during our sample period. We obtained these data from the United Nations Framework Convention on Climate Change (2009).

Because a country's economic development can affect the diffusion rates of organizational practices (Guler et al. 2002) and affect environmental practices more generally (Inglehart 1990), we control for each *country's annual per capita real gross domestic product (GDP)*. We obtained from the World Bank country-level data on annual gross domestic product (GDP), reported in 2005 U.S. dollars, and annual population data from the U.S. Census Bureau, compiled by the U.S. Department of Agriculture's Economic Research Service (U.S. Department of Agriculture 2010). To reduce skew, we use logged ratios in our models.

We controlled for each country's *annual outward foreign direct investment (FDI)* because research has found more corporate financial disclosure among companies headquartered in countries with higher FDI (Seyoum 2009). This measure also reflects a country's dependence on other countries, which affects development and influence relationships (Chase-Dunn 1975; Wallerstein 1979). We obtained FDI data from the Foreign Direct Investment database of the United Nations Conference on Trade and Development (2010).

Companies headquartered in countries with poor environmental quality might face particularly high demands for environmental disclosure, which could influence their disclosure behavior. We controlled for environmental quality in each country using a composite indicator from the 2002 Environmental Sustainability Index (World Economic Forum et al. 2002). A *country's environmental stress* refers to the extent to which pollution and resource consumption are stressing the country's environmental systems. This measure incorporates emissions as well as fertilizer and pesticide use (all normalized by land area), change in forest cover, per capita natural resource consumption, and projected population growth rates (World Economic Forum et

al. 2002: 7).

We also gathered data on several organization-level control variables. Because prior studies have argued and shown that an organization's financial performance influences its environmental disclosure (Barth, McNichols, and Wilson 1997; Neu, Warsame, and Pedwell 1998; Li and McConomy 1999), we control for financial performance using *return on assets* (Bewley and Li 2000), calculated as net income divided by starting-year assets, both of which we obtained from Compustat. To avoid undue influence of a few outliers, we winsorized this ratio at the 0.01 and 99.9 percentiles. That is, we recoded values below the 0.01 percentile to that value and top-coded values above the 99.9 percentile to that value.

Companies relying on export markets and those focused on domestic markets can face different pressures for corporate environmental behavior (Christmann and Taylor 2001). Because such differences could affect environmental reporting, we control for *percentage of sales to foreign (non-headquarters) countries*, using data from Worldscope.

Prior research suggests that companies list on foreign stock exchanges to exhibit greater transparency through the exchange's more stringent financial reporting requirements than the company's domestic exchange (Khanna, Palepu, and Srinivasan 2004). To control for this, we created a dichotomous variable that indicates whether the company was listed on a foreign stock exchange. Using stock exchange listings data from Datastream, we coded this variable "1" for companies that listed their stock on an exchange outside their headquarters country and "0" otherwise.

Finally, because research reveals very different levels of environmental and social disclosure for companies in different industries (Cho and Patten 2007; Kolk and Pinkse 2007; Newson and Deegan 2002; Patten 1991; Reid and Toffel 2009; Roberts 1992), we controlled for

differences between *industries* by using dummy variables to account for each company's primary two-digit SIC code, obtained from Compustat.

METHODS

Model Specifications and Estimation Approach

We test Hypotheses 1-4 with a model that predicts weighted disclosure ratio based on the independent and control variables listed above. We test Hypothesis 5 by including an interaction term between the country's globalization index and its civil liberties and political rights. Because the disclosure ratio is a proportional dependent variable bounded by 0 and 1, we use a fractional logit model (Papke and Wooldridge 1996), estimated as a general linear model (GLM) with a logit link function and binomial family (McDowell and Cox 2004). This approach has been widely used by economic sociologists estimating proportional dependent variables (e.g., Hsu 2006; Fleischer 2009). Because our sample includes several observations per firm and many firms per country, we report heteroskedasticity-robust standard errors clustered by country, a more conservative approach than clustering by firm.

We test our remaining hypotheses by predicting selective disclosure magnitude, a continuous dependent variable, estimated using ordinary least squares (OLS). Each OLS model includes a hypothesized moderated effect, modeled as interactions between organizational characteristics (environmental damage cost and sales) and institutional factors. To address potential concerns associated with multicollinearity, we use mean-centered versions of all continuous variables used in any the interaction terms in our models. As with the GLM models, we cluster standard errors by country.

As noted, in all models, we also include dummy variables indicating two-digit SIC codes to control for differences between industries, and we include a full set of year dummies. For each

of the variables for which we recoded occasional missing values to zero (details provided in the footer of each regression table), we created and included a corresponding dichotomous variable coded “1” to denote observations where such recoding was conducted and “0” otherwise (Maddala 1977: 202; Greene 2007: 62). This approach, commonly used in econometric analysis, is algebraically equivalent to recoding missing values with the variable’s mean (Greene 2007: 62).

RESULTS

Summary statistics and correlations are reported in Tables 3 and 4.

Insert Tables 3 and 4 about here

Results of Disclosure Regression Models

Column 1 of Table 5 presents the results of our generalized linear model (GLM) regression that tests Hypotheses 1-4. We interpret the magnitude of statistically significant results by exponentiating the regression coefficients to calculate odds ratios (OR).

Controls

Starting with our control variables, we find greater environmental disclosure among organizations that pose greater environmental damage (OR=1.56, $p<0.01$), are larger (OR=1.22, $p<0.01$), are listed on foreign stock exchanges (OR=1.65, $p<0.01$), and are headquartered in countries where the Kyoto Protocol had entered into force (OR=1.98, $p<0.01$). We also find more environmental disclosure among companies headquartered in countries with less outward FDI (OR=0.84, $p<0.01$) and lower levels of economic development as measured by annual per capita GDP (OR=0.73, $p<0.01$). We find no evidence that corporate environmental disclosure is

influenced by a firm's financial performance (return on assets) or export orientation (percentage of sales to foreign countries) or by the environmental stress in its headquarters country.

Insert Table 5 about here

Hypothesized Relationships

Our results indicate greater environmental disclosure among companies headquartered in countries more engaged in intergovernmental environmental organizations (OR=1.63, $p<0.05$), which supports H1. A one-standard-deviation (SD) increase in the headquarters country's engagement in intergovernmental environmental organizations is associated with a 3.5-percentage-point increase in the company's weighted disclosure ratio, calculated as the average marginal effect (AME) of $0.047 \times \text{SD}$ of 0.76. This is a 24% increase beyond the weighted disclosure ratio's mean of 0.15. We find no evidence that disclosure is associated with the stringency of environmental governance in a company's headquarters country, yielding no support for H2.

We find more environmental disclosure among corporations headquartered in countries whose citizens are more exposed to globalization (OR=10.92, $p<0.01$), which supports H3. A one-standard-deviation increase in a company headquarters country's globalization index is associated with a 5.2-percentage-point increase (AME of $0.228 \times \text{SD}$ of 0.23) in the weighted disclosure ratio, a 35% increase beyond the mean disclosure ratio. We also found greater corporate environmental disclosure in countries that provide greater civil liberties and political rights (OR=1.33, $p<0.01$), which supports H4. A one-standard-deviation increase in a company headquarters country's civil liberties and political rights is associated with a 4.3-percentage-point increase (AME of $0.027 \times \text{SD}$ of 1.60) in corporate environmental disclosure, a 29% increase

beyond the mean.

To test the moderated relationships we hypothesized as H5, we added an interaction term between a country's globalization index and its civil liberties and political rights. Results of this model are reported in Column 2 of Table 4. Our findings indicate that greater levels of civil liberties and political rights exacerbate the positive effect of globalization on corporate environmental disclosure (OR=3.35, p=0.05), which supports H5. To facilitate the interpretation of this interaction effect, Figure 3 depicts the predicted effect of a country's globalization index on corporate environmental disclosure, at high versus low levels of civil liberties and political rights. High and low values are distinguished relative to the sample median. The positive interaction term is illustrated by the curve corresponding to organizations headquartered in countries with high civil liberties and political rights being steeper than the curve corresponding to those headquartered in countries with low civil liberties and political rights.

Insert Figure 3 about here

Robustness Tests

Several robustness tests bolster confidence in our primary results. For example, our results were robust to measuring of globalization exposure as *IUCN member organizations per million population*, a commonly employed measure of global civil society penetration in global society research (e.g., see Tsutsui and Wotipka 2004; Hafner-Burton and Tsutsui 2005). Our primary results also held when we measured corporate environmental disclosure as *absolute disclosure ratio* instead of the weighted ratio. More details about these and other robustness tests and their empirical results are provided in Appendix A.

Results of Selective Disclosure Regression Models

Table 6 presents the results of our selective disclosure models estimated with OLS regression. Model 1 includes only direct effects and serves as a baseline. Considering the institutional context, selective disclosure is significantly less prevalent among companies headquartered in countries whose governments were more engaged in intergovernmental environmental organizations and afforded greater civil liberties and political rights and whose citizens were more exposed to globalization. We find no evidence of a direct effect of the stringency of environmental governance in headquarters countries on selective disclosure levels. Turning to organizational characteristics, organizations causing more environmental damage are significantly less likely to selectively disclose, but we find no evidence of a direct relationship between sales and selective disclosure. We find less selective disclosure among companies listed on a foreign stock exchange and companies headquartered in Kyoto countries.

Insert Table 6 about here

Hypothesized Relationships

To interpret the results of our hypothesized relationships, we make inferences based on the statistical significance of the interaction terms and visually depict the interaction effects by graphing average predicted values. Models 2-5 in Table 6 reveal that country-level institutional factors emanating from the government are especially likely to deter highly visible companies from selective disclosure, which supports H6a and H6b. Decreasing levels of selective disclosure are exhibited by more visible organizations, and this relationship is especially pronounced among companies headquartered in countries whose governments are highly engaged in intergovernmental environmental organizations, which supports H6a. This finding is robust to whether visibility is conceptualized as environmental harm (Model 2: $p < 0.01$; Figure

4a) or corporate sales (Model 3: $p=06$; Figure 4b). We also find that the stringency of environmental governance leads selective disclosure to decline with visibility, which supports H6b. Again, these empirical results hold when we measure visibility via environmental harm (Model 4: $p=06$; Figure 5a) or corporate sales (Model 5: $p<0.01$; Figure 5b).

Insert Figures 4a, 4b, 5a, and 5b about here

Country-level institutional factors emanating from the civil society are also especially likely to deter highly visible companies from selective disclosure, as shown by significant negative interaction effects in Models 6-9 in Table 6, supporting H7a and H7b. The overall declining rates of selective disclosure among more visible organizations is especially pronounced among companies headquartered in countries whose citizens are more exposed to globalization, which supports H7a. This relationship is significant whether visibility is measured as environmental damage (Model 6: $p<0.01$; Figure 6a) or corporate sales (Model 7: $p<0.01$; Figure 6b). Similarly, higher levels of civil liberties and political rights leads selective disclosure to decline with organizational visibility, which supports H7b. Again, this result holds whether we measured visibility as environmental damage (Model 8: $p<0.01$; Figure 7a) or corporate sales (Model 9: $p<0.01$; Figure 7b).

Insert Figures 6a, 6b, 7a, and 7b about here

Robustness Tests

We conducted several robustness tests of our selective disclosure models, described in detail in Appendix B. The results indicated that our primary results held even when the models were estimating on various subsamples (described earlier), when *IUCN member organizations*

per million population was used an alternative measure of globalization exposure, and when employment was used an alternative measure of organizational visibility.

DISCUSSION AND CONCLUSION

Our study focused on unpacking the substantial heterogeneity in the extent of corporate environmental disclosure, identifying how global factors influence disclosure trends and why some firms' disclosures are more symbolic than those of other firms. Rooted in the institutional tradition, particularly as it focuses on globalization, our study identified a number of key country- and organization-level determinants of corporate environmental disclosure. Our findings broadly support our general claims that both embeddedness in global environmental regimes and supporting home country institutions would affect the extent of disclosure. Thus, we conclude that these external environmental factors do influence the actors responsible for much of the world's environmental damage. Our findings that specific organizational characteristics affected organizations' responses to these institutional pressures contribute to an emerging literature examining heterogeneous responses to institutional pressures as a result of organizational characteristics as well as of the pressures themselves (e.g., Delmas and Toffel 2008, 2011). More visible firms—those that were larger and did greater environmental damage—were especially less likely to practice selective disclosure in institutional contexts where the government and civil society were more connected to globalization. Our research also offers more general theoretical contributions, which we examine below.

Globalization Pressures and Organizational Action

By studying the behavior of thousands of corporations across 46 nations' institutional environments, we can better identify the extent to which actors are influenced by globalization

pressures directly through different institutional processes; for example, through the government and citizenry of the headquarters country. Unpacking these differences is important, given that the globalization of environmentalism has been critiqued as nothing more than myth and ceremony (Meyer and Rowan 1977) at the nation-state level with only limited effect on lower-level actors such as corporations (Buttel 2000; Yearley 1996). That is, it has been alleged that many nation-states adopt environmental laws and policies merely as a veneer to acquire or maintain legitimacy, but then invest little in enforcement, leaving environmentally damaging behavior on the part of corporations largely unchanged. For example, China passed significant environmental legislation after joining the World Trade Organization, but this has had little effect on the environmental practices of companies there (Economy 2010).

Our findings provide the first systematic evidence across many countries and companies that, such “decoupling” notwithstanding, the global environmental movement does affect corporations’ environmental management practices. Thus, our work responds to Longhofer and Schofer’s (2010) call for world polity research to look beyond nation-state level diffusion to explore effects on lower-level actors such as corporations. Our paper provides evidence that the global institutionalization of environmentalism by national governments need not simply be a ceremonial action, but can institutionalize environmental norms in societies and provide a public signal or endorsement of the importance of environmentalism. More generally, our approach suggests that research across multiple levels with large-scale organizational data is an excellent setting in which to examine the operation of globalization processes on the ground.

Of particular interest is our finding that countries’ civil liberties and political rights moderate the effect which the spread of global ideas has on corporate environmental disclosure. Prior research on the effects of civil and political liberties has focused on the importance of both

information dissemination and activism, but typically without examining these mechanisms separately. The common way to measure civil and political liberties is the presence of INGOs in a country (e.g., see Tsutsui and Wotipka 2004; Hafner-Burton and Tsutsui 2005) and INGOs have been shown to be a key mechanism of enforcement of global human rights issues. We replicate such findings in our robustness checks, showing that INGO prevalence also moderates the corporate visibility effects we hypothesize. However, the prevalence of INGOs in a country reflects the outcome of both the diffusion of global ideas *and* the country's openness to political organizing. Our approach, unlike that of previous studies, decomposes the effects of these two mechanisms, contributing to world polity research by unpacking some of the mechanisms underlying previous findings. In addition, given the growing scholarly attention to better understanding how companies respond to activism (e.g., King 2008; Reid and Toffel 2009), we believe that identifying the separate effects of information dissemination and activism is an important area for future research.

Symbolic Compliance to Institutional Pressure

We make a key contribution to institutional research that examines the gap between the appearance and the reality of organizational behavior (Meyer and Rowan 1977; Zucker 1977). We advance this research by differentiating between several symbolic compliance strategies, not only attending to decoupling (the standard focus), but also identifying attention deflection as an important symbolic compliance strategy that includes both substitution (Okhmatovskiy and David 2011) and selective disclosure. Our hypotheses and empirical approach articulate the conditions under which companies selectively disclose their environmental impacts in order to appear transparent while masking their true environmental impact.

Our analysis reveals that institutional pressures are particularly effective in mitigating

visible organizations' symbolic compliance (in our context, selective disclosure of environmental performance, sometimes referred to as greenwashing). This contributes to institutional theory by showing how symbolic compliance strategies vary across firms and that certain corporate characteristics, such as visibility, increase the power of institutional pressure to mitigate symbolic compliance. In our context, institutional pressure provides a check on selective disclosure. Specifically, we show that smaller and less damaging firms are more prone to greenwash and less vulnerable to institutional pressure. Our results thus suggest that visibility is an important mechanism that affects the extent to which firms symbolically comply with institutional pressures. Furthermore, our results contribute to globalization research by revealing that the global environmentalism movement encourages some—but not all—organizations to engage in myth and ceremony and that the use of symbolic compliance strategies is affected by specific corporate characteristics and by institutional context.

Limitations and Future Research

Our study is not without its limitations and our analyses and conclusions point to a number of opportunities for future research. First, with the benefit of more nuanced and finely grained measures of the global embeddedness of corporations, researchers could examine whether corporations more reliant on foreign sales—particularly sales to high-disclosure countries—might be more globally embedded and thus more susceptible to global pressures.

Furthermore, some of our anomalous findings call for further research. The significant inverse relationship we found between a company's environmental disclosure and the economic development of its headquarters country is contrary to the theoretical suggestion that residents of more economically developed countries are more likely to engage in discretionary activities associated with the environment (Inglehart 1990). Interestingly, we also found more selective

disclosure among companies headquartered in countries with higher per capita GDP. Future investigators may want to investigate these interesting relationships in fuller detail.

Conclusion

Our study has examined how and why companies respond to the globalization of environmentalism, how their responses are affected by global institutional pressures, and how these pressures combine with corporate visibility to vary the extent to which such responses are symbolic. Our analyses have thus integrated the institutional streams focused on globalization and on organizational symbolic compliance. We conclude by encouraging greater integration of globalization researchers with organizational scholars studying institutional change and by pointing out that cross-national organizational behavior is an ideal setting in which to investigate this intersection. As others have noted, corporations are one of the “dominant global actors” in world culture (Boli and Thomas 1999: 193) and have a pervasive influence on social and political life across the world (Perrow 2002; Davis and Marquis 2005). Corporations are among the most important actors in globalization, not only driving global integration but also reflecting and conveying global norms and ideas (Guillén 2001a). Thus, globalization research has much to gain by exploring the contingencies of how globalization affects corporate behavior and how corporate behavior in turn affects globalization. There is arguably no greater change over the past decades than the globalization of markets and societies; this topic is therefore a fruitful context for understanding how homogeneity and heterogeneity develop within institutional systems.

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TABLE 1. Industry composition of sample

Industry	Firms	Percent	
SIC 10	Metal Mining	72	1.6%
SIC 12	Coal Mining	21	0.5%
SIC 13	Oil and Gas Extraction	186	4.0%
SIC 15	Building Construction General Contractors and Operative Builders	82	1.8%
SIC 16	Heavy Construction Other Than Building Construction Contractors	41	0.9%
SIC 17	Construction Special Trade Contractors	16	0.3%
SIC 20	Food and Kindred Products	154	3.3%
SIC 22	Textile Mill Products	17	0.4%
SIC 23	Apparel and Other Finished Products Made From Fabrics and Similar Materials	25	0.5%
SIC 26	Paper and Allied Products	43	0.9%
SIC 27	Printing, Publishing, and Allied Industries	62	1.3%
SIC 28	Chemicals and Allied Products	305	6.6%
SIC 29	Petroleum Refining and Related Industries	56	1.2%
SIC 30	Rubber and Miscellaneous Plastics Products	30	0.7%
SIC 32	Stone, Clay, Glass, and Concrete Products	60	1.3%
SIC 33	Primary Metal Industries	96	2.1%
SIC 34	Fabricated Metal Products, Except Machinery and Transportation Equipment	44	1.0%
SIC 35	Industrial and Commercial Machinery and Computer Equipment	199	4.3%
SIC 36	Electronic and Other Electrical Equipment and Components, Except Computer Equipment	276	5.9%
SIC 37	Transportation Equipment	115	2.5%
SIC 38	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks	125	2.7%
SIC 39	Miscellaneous Manufacturing Industries	25	0.5%
SIC 40	Railroad Transportation	15	0.3%
SIC 42	Motor Freight Transportation and Warehousing	28	0.6%
SIC 44	Water Transportation	55	1.2%
SIC 45	Transportation By Air	64	1.4%
SIC 47	Transportation Services	36	0.8%
SIC 48	Communications	194	4.2%
SIC 49	Electric, Gas, and Sanitary Services	228	4.9%
SIC 50	Wholesale Trade—Durable Goods	107	2.3%
SIC 51	Wholesale Trade—Non-durable Goods	74	1.6%
SIC 53	General Merchandise Stores	54	1.2%
SIC 54	Food Stores	34	0.7%
SIC 56	Apparel and Accessory Stores	30	0.7%
SIC 57	Home Furniture, Furnishings, and Equipment Stores	23	0.5%
SIC 58	Eating and Drinking Places	30	0.7%
SIC 59	Miscellaneous Retail	43	0.9%
SIC 60	Depository Institutions	284	6.1%
SIC 61	Non-depository Credit Institutions	44	1.0%
SIC 62	Security and Commodity Brokers, Dealers, Exchanges, and Services	107	2.3%
SIC 63	Insurance Carriers	160	3.4%
SIC 64	Insurance Agents, Brokers, and Service	17	0.4%
SIC 65	Real Estate	144	3.1%
SIC 67	Holding and Other Investment Offices	142	3.1%
SIC 70	Hotels, Rooming Houses, Camps, and Other Lodging Places	31	0.7%
SIC 73	Business Services	322	6.9%
SIC 79	Amusement and Recreation Services	42	0.9%
SIC 80	Health Services	28	0.6%
SIC 87	Engineering, Accounting, Research, Management, and Related Services	92	2.0%
Other SICs		168	3.6%
Total:		4,646	100%

TABLE 2. Companies' headquarters location of sample

HQ country	Firms	Percent	HQ country	Firms	Percent
Australia	223	4.8%	Luxembourg	12	0.3%
Austria	25	0.5%	Malaysia	65	1.4%
Belgium	29	0.6%	Mexico	23	0.5%
Bermuda	22	0.5%	Netherlands	65	1.4%
Brazil	51	1.1%	New Zealand	14	0.3%
Canada	140	3.0%	Norway	69	1.5%
Chile	9	0.2%	Pakistan	16	0.3%
China	91	2.0%	Peru	2	0.0%
Colombia	3	0.1%	Philippines	20	0.4%
Czech Republic	3	0.1%	Poland	9	0.2%
Denmark	38	0.8%	Portugal	12	0.3%
Finland	48	1.0%	Russia	20	0.4%
France	104	2.2%	Singapore	47	1.0%
Germany	105	2.3%	Slovenia	1	0.0%
Greece	28	0.6%	South Korea	110	2.4%
Hong Kong	111	2.4%	Spain	55	1.2%
Hungary	4	0.1%	Sweden	87	1.9%
India	88	1.9%	Switzerland	65	1.4%
Indonesia	27	0.6%	Taiwan	130	2.8%
Ireland	27	0.6%	Thailand	37	0.8%
Israel	24	0.5%	Turkey	14	0.3%
Italy	70	1.5%	United Kingdom	737	15.9%
Japan	491	10.6%	United States	1,275	27.4%
			Total:	4,646	100.0%

TABLE 3. Summary statistics

Variable	Mean	SD	Min	Max
Organization's weighted disclosure ratio	0.15	0.31	0	1
Organization's absolute disclosure ratio	0.05	0.13	0	1
Selective disclosure magnitude (absolute disclosure ratio - weighted disclosure ratio)	-0.10	0.23	-0.94	0.63
Country's engagement in intergovernmental environmental organizations	1.43	0.76	-0.88	2.54
Country's engagement in intergovernmental environmental organizations \diamond	0.05	0.76	-2.26	1.16
Country's environmental governance	5.14	0.72	0	6.79
Country's environmental governance \diamond	0.05	0.72	-5.10	1.70
Country's globalization index	0.71	0.23	0	0.93
Country's globalization index \diamond	0.01	0.23	-0.71	0.22
IUCN member organizations per million population	0.54	0.53	0	4.50
IUCN member organizations per million population \diamond	-0.01	0.53	-0.55	3.95
Country's civil liberties and political rights	5.34	1.60	0	6
Country's civil liberties and political rights \diamond	0.06	1.60	-5.27	0.73
Organization's environmental damage cost (log)	2.14	2.10	0.00	9.36
Organization's environmental damage cost (log) \diamond	0.01	2.10	-2.13	7.23
Organization's sales (log)	7.49	1.83	0.00	12.83
Organization's sales (log) \diamond	0.28	1.83	-7.21	5.62
Organization listed on a foreign stock exchange (dummy)	0.72	0.45	0	1
Kyoto Protocol entered into force in this country by this year (dummy)	0.47	0.50	0	1
Country's annual national outward foreign direct investment (FDI)	10.60	2.04	0.00	12.84
Country's annual per capita real gross domestic product (GDP)	10.28	0.82	6.48	11.31
Country's environmental stress	29.46	15.23	0.00	64.80
Organization's percentage of sales to foreign countries	0.13	0.25	0.00	1.00
Organization's return on assets	0.07	0.14	-2.71	1.36

N = 14,693 firm-years. \diamond denotes centered variables

TABLE 4. Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Organization's weighted disclosure ratio	1.00															
(2) Organization's absolute disclosure ratio	0.71	1.00														
(3) Selective disclosure magnitude	-0.92	-0.39	1.00													
(4) Country's engagement in intergovernmental environmental organizations	0.14	0.13	-0.11	1.00												
(5) Country's environmental governance	0.05	0.03	-0.05	0.47	1.00											
(6) Country's globalization index	0.11	0.09	-0.09	0.56	0.47	1.00										
(7) IUCN member organizations per million population	0.08	0.06	-0.07	0.20	0.40	0.48	1.00									
(8) Country's civil liberties and political rights	0.09	0.07	-0.08	0.64	0.55	0.71	0.33	1.00								
(9) Organization's environmental damage cost (log)	0.45	0.29	-0.44	-0.06	-0.04	-0.03	-0.11	-0.05	1.00							
(10) Organization's sales (log)	0.29	0.23	-0.26	0.05	-0.01	0.00	-0.21	0.04	0.50	1.00						
(11) Organization listed on a foreign stock exchange	0.11	0.09	-0.10	0.01	0.02	0.18	0.05	0.06	0.11	0.23	1.00					
(12) Kyoto Protocol entered into force	0.14	0.13	-0.12	0.20	-0.05	0.11	0.17	-0.07	-0.01	-0.05	-0.16	1.00				
(13) Country's annual national outward FDI	0.04	0.04	-0.03	0.43	0.20	0.23	-0.17	0.27	0.01	0.14	0.10	-0.01	1.00			
(14) Country's annual per capita real GDP	0.04	0.04	-0.03	0.44	0.54	0.34	0.31	0.50	-0.06	0.08	0.27	-0.21	0.36	1.00		
(15) Country's environmental stress	0.07	0.05	-0.06	-0.09	-0.11	0.38	0.01	0.12	0.12	0.09	0.11	0.10	-0.25	-0.38	1.00	
(16) Organization's percentage of sales to foreign countries	0.14	0.09	-0.13	-0.02	0.08	0.02	0.14	-0.03	0.12	0.11	0.05	0.19	-0.13	-0.01	0.13	1.00
(17) Organization's return on assets	-0.01	-0.01	0.00	-0.08	-0.05	-0.04	0.02	-0.06	0.05	0.03	0.00	-0.01	-0.04	-0.09	0.06	0.00

TABLE 5. Disclosure Models: Generalized Linear Model Regression Results

Dependent variable: Weighted Disclosure Ratio

	Coef.	(1) Average Marginal Effects	(2) Coef.
H1 Country's engagement in intergovernmental environmental organizations \diamond	0.490** [0.138]	0.047** [0.012]	0.470** [0.137]
H2 Country's environmental governance \diamond	0.097 [0.139]	0.009 [0.013]	0.098 [0.138]
H3 Country's globalization index \diamond	2.391** [0.818]	0.228** [0.079]	1.653+ [0.873]
H4 Country's civil liberties and political rights \diamond	0.285** [0.083]	0.027** [0.009]	0.315** [0.082]
H5 Country's globalization index \diamond \times Country's civil liberties and political rights \diamond			1.210+ [0.627]
Organization's environmental damage cost (log) \diamond	0.445** [0.080]	0.042** [0.006]	0.447** [0.080]
Organization's sales (log) \diamond	0.195** [0.071]	0.019* [0.007]	0.195** [0.070]
Organization listed on a foreign stock exchange	0.500** [0.115]	0.048** [0.014]	0.489** [0.116]
Kyoto Protocol entered into force	0.681** [0.217]	0.065** [0.019]	0.698** [0.217]
Country's annual national outward FDI	-0.148** [0.050]	-0.014** [0.005]	-0.146** [0.049]
Country's per capita real GDP	-0.314* [0.142]	-0.030* [0.014]	-0.240 [0.149]
Country's environmental stress	-0.012 [0.009]	-0.001 [0.001]	-0.012 [0.009]
Organization's percentage of sales to foreign countries	-0.097 [0.165]	-0.009 [0.016]	-0.095 [0.164]
Organization's return on assets	-0.172 [0.285]	-0.016 [0.027]	-0.174 [0.283]
Year dummies (2005-2007)	Included		Included
Industry dummies (2-digit SIC codes)	Included		Included
Constant	1.717 [1.786]		0.910 [1.835]
Observations (firm-years)	14,693		14,693
Firms	4,646		4,646
Countries	46		46

This table reports coefficients and average marginal effects from fractional logit models estimated as general linear models with a logit link function and binomial family, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations, environmental governance, globalization index, civil liberties and political rights, outward foreign direct investment, environmental stress, and organization's percentage of sales to foreign countries.*

TABLE 6. Selective Disclosure Models: Ordinary Least Squares Regression Results

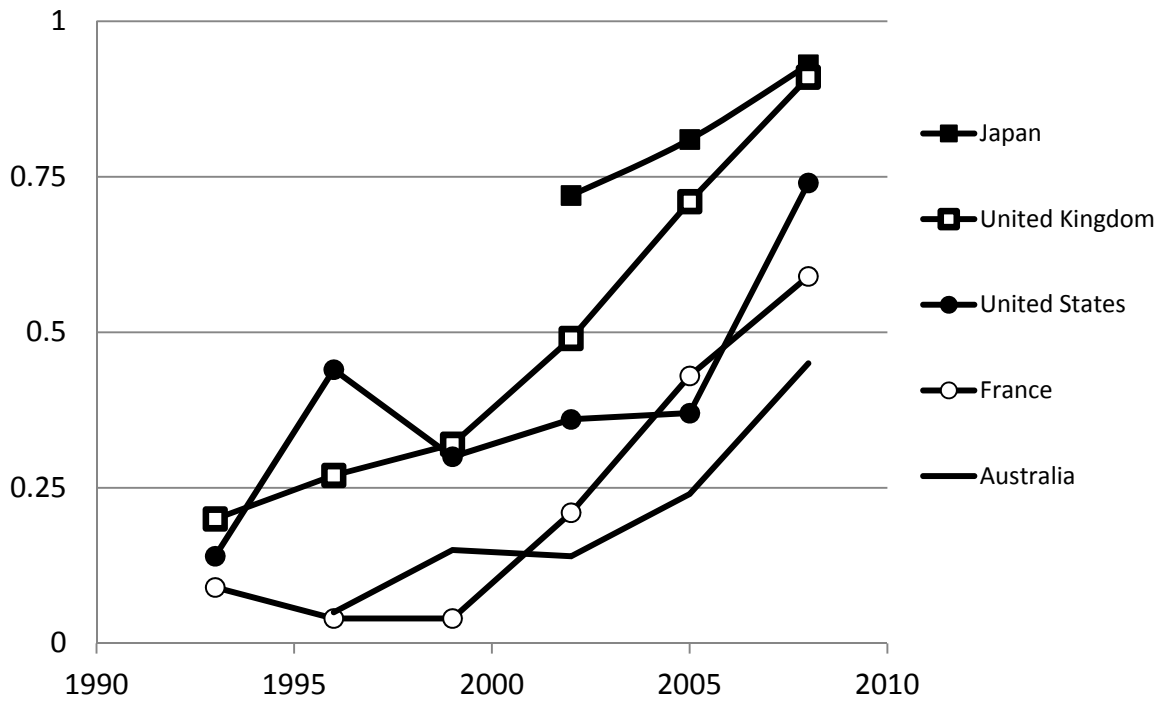
Dependent variable: Selective Disclosure Magnitude

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Country's engagement in intergovernmental environmental organizations \diamond	-0.031**	-0.030*	-0.028*	-0.031**	-0.030**	-0.031**	-0.028**	-0.031**	-0.029**
	[0.011]	[0.011]	[0.012]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]
Country's environmental governance \diamond	-0.010	-0.008	-0.008	-0.009	-0.008	-0.010	-0.012	-0.009	-0.011
	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]	[0.011]
Country's globalization index \diamond	-0.193**	-0.208**	-0.186*	-0.201**	-0.200**	-0.195**	-0.178*	-0.204**	-0.193**
	[0.072]	[0.073]	[0.071]	[0.073]	[0.073]	[0.071]	[0.070]	[0.072]	[0.071]
Country's civil liberties and political rights \diamond	-0.015*	-0.013+	-0.015*	-0.014*	-0.015*	-0.014*	-0.014*	-0.012+	-0.015*
	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]
Organization's environmental damage cost (log) \diamond	-0.053**	-0.054**	-0.053**	-0.053**	-0.053**	-0.053**	-0.053**	-0.054**	-0.053**
	[0.005]	[0.005]	[0.004]	[0.005]	[0.005]	[0.004]	[0.005]	[0.004]	[0.005]
Organization's sales (log) \diamond	-0.003	-0.002	-0.001	-0.003	-0.003	-0.003	-0.002	-0.003	-0.003
	[0.006]	[0.005]	[0.004]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
H6a Country's engagement in intergovernmental environmental orgs. \diamond × Organization's environmental damage cost (log) \diamond		-0.009**							
		[0.003]							
H6a Country's engagement in intergovernmental environmental orgs. \diamond × Organization's sales (log) \diamond			-0.012**						
			[0.003]						
H6b Country's environmental governance \diamond × Organization's environmental damage cost (log) \diamond				-0.004+					
				[0.002]					
H6b Country's environmental governance \diamond × Organization's sales (log) \diamond					-0.005+				
					[0.003]				
H7a Country's globalization index \diamond × Organization's environmental damage cost (log) \diamond						-0.037**			
						[0.010]			
H7a Country's globalization index \diamond × Organization's sales (log) \diamond							-0.035**		
							[0.009]		
H7b Country's civil liberties and political rights \diamond × Organization's environmental damage cost (log) \diamond								-0.004**	
								[0.001]	
H7b Country's civil liberties and political rights \diamond × Organization's sales (log) \diamond									-0.005**
									[0.001]
Organization listed on a foreign stock exchange	-0.032**	-0.030**	-0.028**	-0.031**	-0.030**	-0.030**	-0.030**	-0.030**	-0.030**
	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]
Kyoto Protocol entered into force	-0.042**	-0.044**	-0.045**	-0.042**	-0.043**	-0.042**	-0.044**	-0.043**	-0.045**
	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]	[0.015]	[0.014]	[0.015]
Country's annual national outward FDI	0.010**	0.010**	0.009**	0.009**	0.009**	0.010**	0.010**	0.010**	0.010**
	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]
Country's per capita real GDP	0.025*	0.024+	0.023+	0.025*	0.023+	0.025+	0.022+	0.024+	0.024+
	[0.012]	[0.012]	[0.012]	[0.013]	[0.013]	[0.012]	[0.012]	[0.013]	[0.012]
Country's environmental stress	0.001	0.001+	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Organization's percentage of sales to foreign countries	-0.022	-0.020	-0.019	-0.020	-0.020	-0.017	-0.019	-0.021	-0.021
	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]	[0.013]	[0.014]	[0.014]	[0.014]
Organization's return on assets	0.008	0.006	0.008	0.007	0.006	0.009	0.010	0.008	0.009
	[0.010]	[0.011]	[0.012]	[0.010]	[0.011]	[0.010]	[0.011]	[0.010]	[0.011]
Year dummies (2005-2007)	Included	Included	Included	Included	Included	Included	Included	Included	Included
Industry dummies (2-digit SIC codes)	Included	Included	Included	Included	Included	Included	Included	Included	Included
Constant	-0.400*	-0.400*	-0.381*	-0.403*	-0.383*	-0.408**	-0.386*	-0.396*	-0.394*
	[0.151]	[0.153]	[0.150]	[0.153]	[0.153]	[0.152]	[0.149]	[0.152]	[0.151]
Observations (firm-years)	14,693	14,693	14,693	14,693	14,693	14,693	14,693	14,693	14,693
Firms	4,646	4,646	4,646	4,646	4,646	4,646	4,646	4,646	4,646
Countries	46	46	46	46	46	46	46	46	46
R-squared	0.257	0.261	0.262	0.258	0.258	0.262	0.260	0.261	0.260

This table reports OLS regression coefficients, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations, environmental governance, globalization index, civil liberties and political rights, outward foreign direct investment, environmental stress, and organization's percentage of sales to foreign countries.*

FIGURE 1.

The sustainability reporting movement in five countries



Note: This figure depicts the proportion of the 100 largest companies in each country that published a sustainability report. The surveys were conducted in 1993, 1996, 1999, 2002, 2005, and 2008 (KPMG, 2002, 2005, 2008; Kolk, 2004); Japan was not included in the surveys before 2002. Data for 2005 and 2008 include standalone corporate sustainability reports as well as those integrated into financial annual reports.

FIGURE 2.

A typology of symbolic compliance strategies

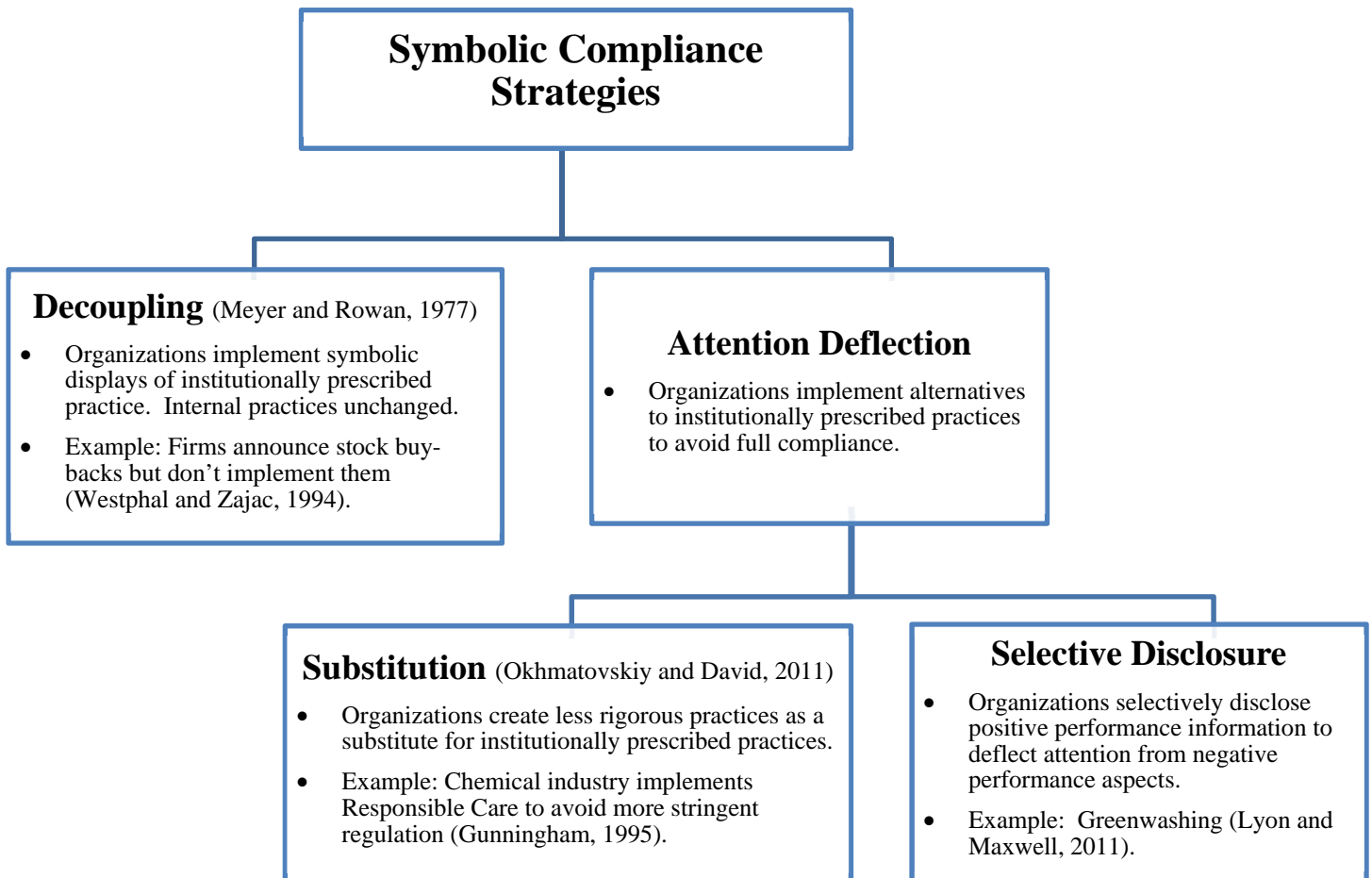
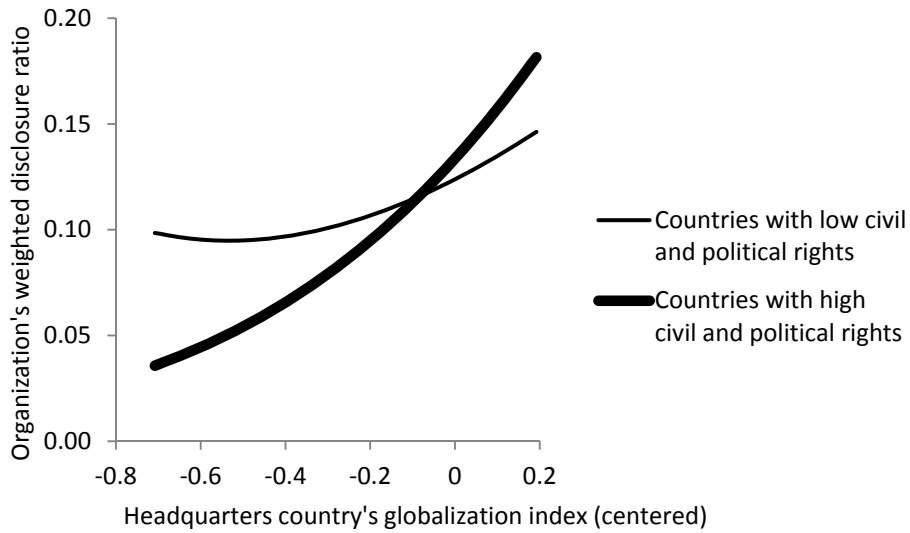


FIGURE 3.

Increasing country globalization is associated with greater corporate environmental disclosure, but only in countries with high levels of civil liberties and political rights.



Note: This figure displays average predicted values generated from Model 2 in Table 5. The lines represent average predicted values generated for two subsets of our sample, distinguished by the headquarters country providing *civil liberties and political rights* at levels above or below the sample median.

FIGURE 4a.

Organizations imposing greater environmental damage are less likely to selectively disclose environmental impacts, especially in countries highly engaged in intergovernmental environmental organizations.

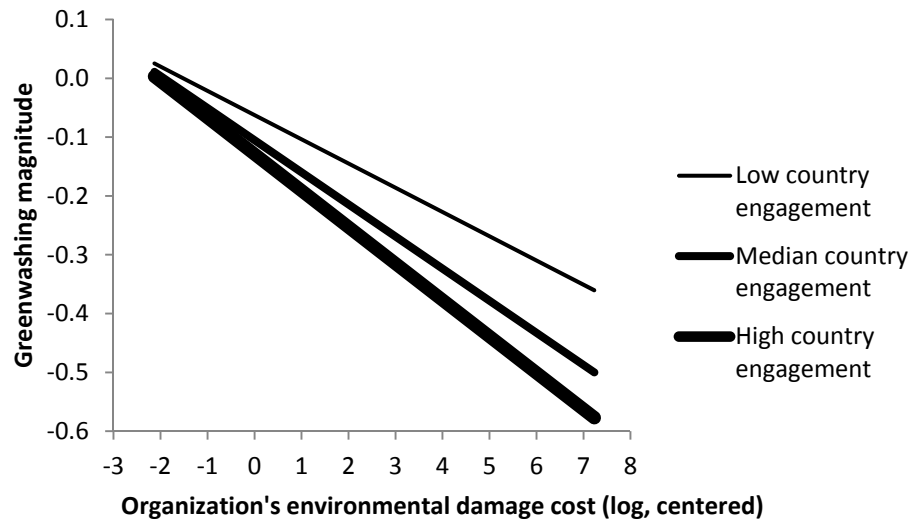
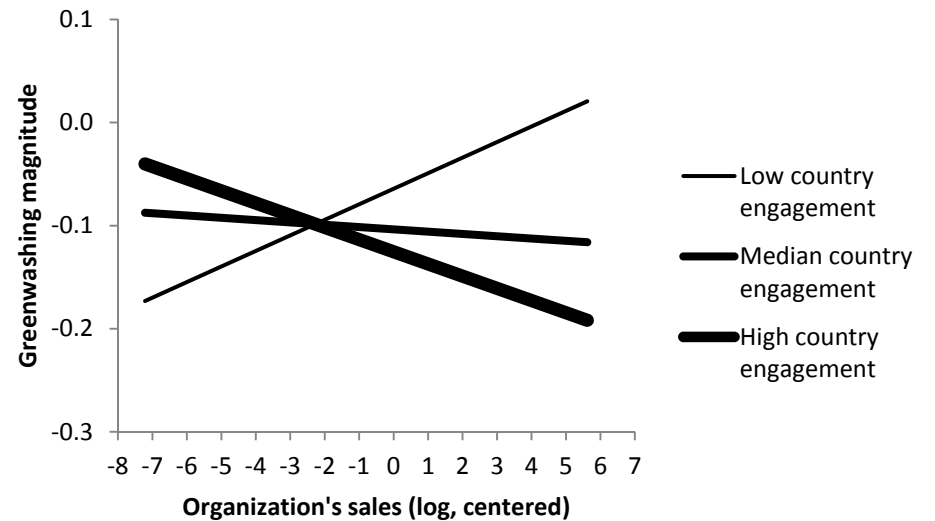


FIGURE 4b.

Larger organizations are less likely to selectively disclose environmental impacts, especially in countries highly engaged in intergovernmental environmental organizations.



Note: Figures 4a and 4b display average predicted values generated from Models 2 and 3, respectively, in Table 6. The lines in these figures represent the average predicted values generated by each observation's actual values except the organization's *environmental damage cost* and *sales* are estimated at each decile and *country's engagement in intergovernmental environmental organizations* at its 10th percentile (low), 50th percentile (median), and 90th percentile (high).

FIGURE 5a.

Organizations imposing greater environmental damage are less likely to selectively disclose environmental impacts, especially in countries with more stringent environmental governance.

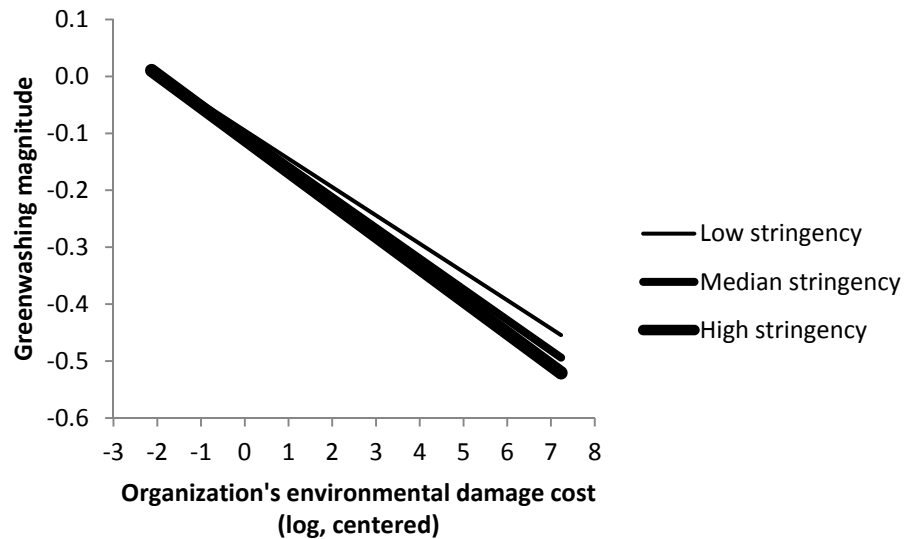
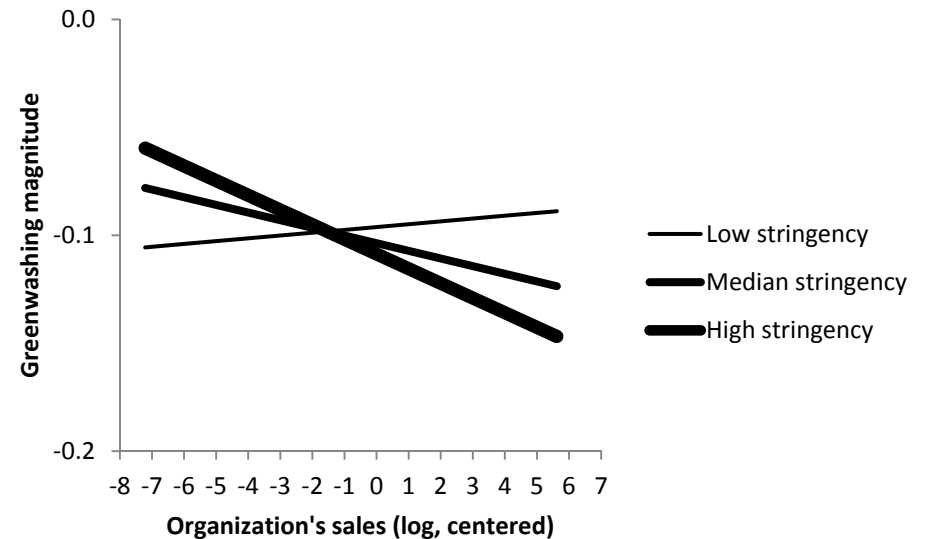


FIGURE 5b

Larger organizations are less likely to selectively disclose environmental impacts, especially in countries with more stringent environmental governance.



Note: Figures 5a and 5b display average predicted values generated from Models 4 and 5, respectively, in Table 6. The lines in these figures represent the average predicted values generated by each observation's actual values except the organization's *environmental damage cost* and *sales* are estimated at each decile and *country's environmental governance* at its 10th percentile (low), 50th percentile (median), and 90th percentile (high).

FIGURE 6a.

Organizations imposing greater environmental damage are less likely to selectively disclose environmental impacts, especially in countries whose citizens are highly connected to globalization.

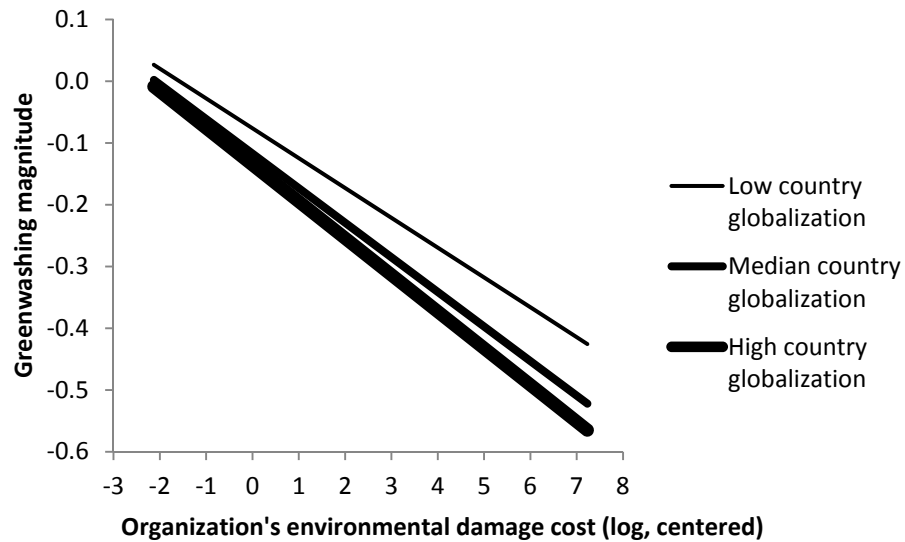
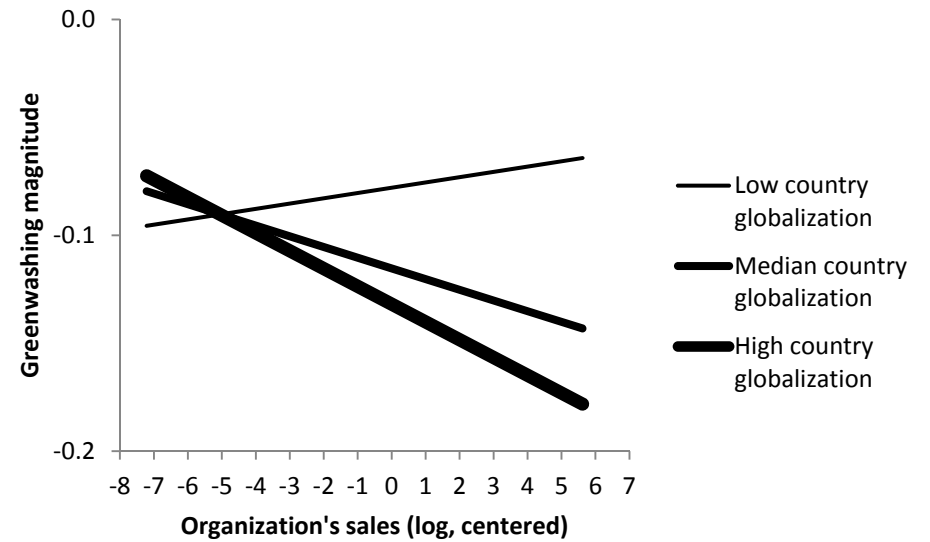


FIGURE 6b.

Organizations imposing greater environmental damage are less likely to selectively disclose environmental impacts, especially in countries whose citizens are highly connected to globalization.



Note: Figures 5a and 5b display average predicted values generated from Models 6 and 7, respectively, in Table 6. The lines in these figures represent the average predicted values generated by each observation's actual values except the organization's *environmental damage cost* and *sales* are estimated at each decile and *country's globalization index* at its 10th percentile (low), 50th percentile (median), and 90th percentile (high).

FIGURE 7a.

Organizations imposing greater environmental damage are less likely to selectively disclose environmental impacts, especially in countries with high levels of civil liberties and political rights.

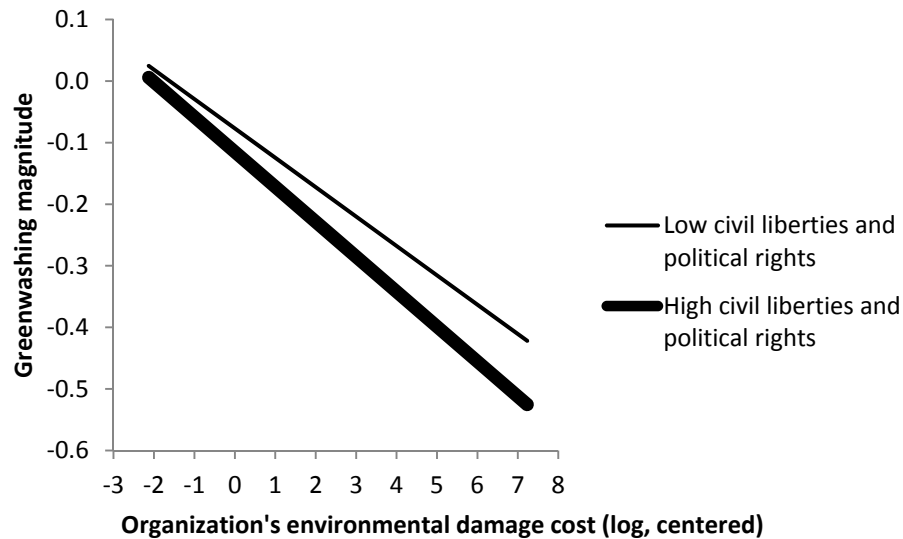
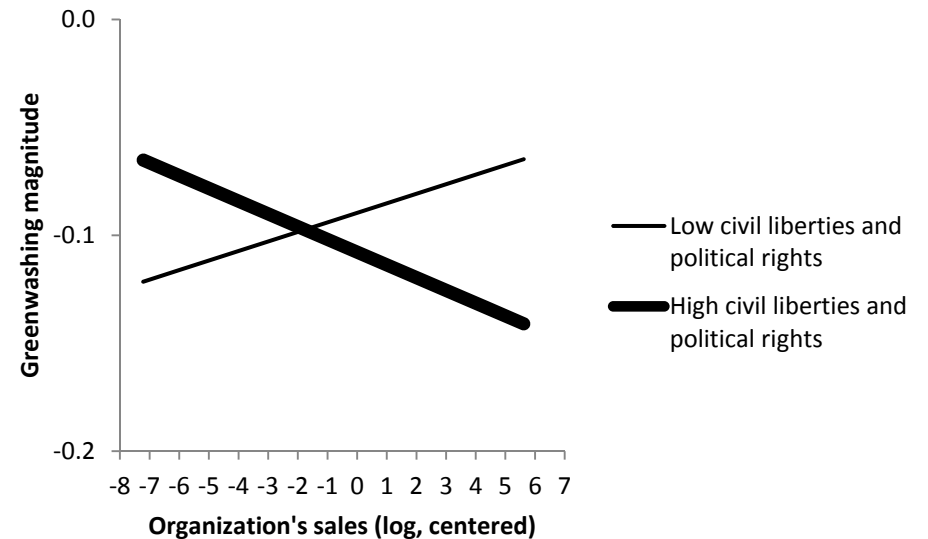


FIGURE 7b

Organizations imposing greater environmental damage are less likely to selectively disclose environmental impacts, especially in countries with high levels of civil liberties and political rights.



Note: Figures 7a and 7b display average predicted values generated from Models 8 and 9, respectively, in Table 6. The lines in these figures represent the average predicted values generated by each observation's actual values, except *environmental damage cost* and *sales* are estimated at each decile, and the lines represent two subsets of our sample, distinguished by the headquarters country providing *civil liberties and political rights* at levels below the sample median (low) or at or above the sample median (high).

APPENDIX A: Disclosure Analysis – Robustness Tests

We conducted several robustness tests of our disclosure models. First, we estimated the model with standard errors clustered by firm rather than by country, which provided more precise estimates, bolstering support for all of the conclusions described above (results available on request). Second, we examined the extent to which firms headquartered in any single country were driving our results. We excluded firms from the modal headquarters country, the United States, where 27.4% of our sample companies were headquartered. The results of our models estimated on this subsample, reported in Columns 1 and 2 of Table A-1, were nearly identical to our primary results (Table 5) in terms of coefficient magnitudes and statistical significance. Third, we examined the extent to which our main results were driven by countries with few headquarters. We estimated the models on the subsample of the 32 (of 46) countries in our sample that headquartered more than 20 companies. Again, the results, reported in Columns 3 and 4, were nearly identical to our primary results. Thus, both subsets support H1, H3, H4, and H5.

As a fourth robustness test, we used an alternative measure of globalization exposure, substituting *IUCN member organizations per million population* for the *globalization index*. As noted earlier, the former is a more commonly employed measure of global civil society penetration in global society research (e.g., see Tsutsui and Wotipka 2004; Hafner-Burton and Tsutsui 2005), but does not allow us to distinguish the spread of global ideas from the ability to exercise them—one of our theoretical interests. The results of the direct model, reported in Column 5, indicate a statistically significant positive effect of this alternative measure of globalization exposure (OR=1.68, p=0.01), reinforcing our primary results and supporting H4. While the interaction model with this alternative measure, reported in Column 6, continues to

yield a positive coefficient, it is not statistically significant. This calls for some caution: Our support for H5 is somewhat dependent upon how globalization exposure is measured.

Finally, we used an alternative measure of corporate disclosure, with *absolute disclosure ratio* as our dependent variable. Measuring corporate disclosure as a percentage of the environmental indicators a company has disclosed is a simpler—and more simplistic—approach because it weights all environmental indicators equally, irrespective of their environmental damage costs. Nonetheless, this approach, which avoids the complexities associated with estimating impact levels and damage costs, is commonly used in accounting and economic studies of corporate financial disclosure (e.g., Botosan 1997; Rajan and Zingales 1998; Hope 2003; Bushman, Piotroski, and Smith 2004; Khanna et al. 2004). The results of the direct and interaction models, reported in Columns 7 and 8, were broadly comparable in direction and statistical significance to those of our primary model, indicating that our hypothesized relationships are robust to this alternative measure of corporate environmental disclosure. One notable difference is the estimated interaction term. Whereas the coefficient estimate remains positive and is statistically indistinguishable from the estimate in the primary interaction model reported in Column 2 of Table 5 ($\chi^2 = 0.10$, $p = 0.76$ based on a Wald test of seemingly unrelated regressions), its statistical significance slightly exceeds conventional levels (Column 8, $p = 0.11$).

TABLE A-1. Disclosure Analysis – Robustness Tests: GLM Regression Results

Dependent variable:		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
		Organization's Weighted Disclosure Ratio						Organization's Absolute Disclosure Ratio		
Sample restrictions (if any)		Exclude companies headquartered in USA		Exclude companies headquartered in infrequent-HQ countries		Coef.	Coef.	Coef.	Average Marginal Effects	
		Coef.	Coef.	Coef.	Coef.					
H1	Country's engagement in intergovernmental environmental organizations \diamond	0.340** [0.114]	0.321** [0.114]	0.393* [0.153]	0.373* [0.148]	0.583** [0.143]	0.571** [0.139]	0.500** [0.115]	0.020** [0.004]	0.485** [0.116]
H2	Country's environmental governance \diamond	-0.038 [0.097]	-0.040 [0.095]	0.109 [0.150]	0.095 [0.148]	0.021 [0.105]	0.025 [0.106]	-0.006 [0.124]	-0.000 [0.005]	-0.014 [0.121]
H3	Country's globalization index \diamond	1.675** [0.638]	0.903 [0.761]	2.309** [0.823]	0.549 [0.724]			1.691** [0.487]	0.068** [0.020]	0.747 [0.789]
H3	IUCN member organizations per million population \diamond					0.519* [0.203]	0.337 [0.346]			
H4	Country's civil liberties and political rights \diamond	0.306** [0.079]	0.343** [0.085]	0.343** [0.113]	0.443** [0.083]	0.195** [0.074]	0.302 [0.199]	0.159* [0.066]	0.006* [0.003]	0.207* [0.087]
H5	Country's globalization index \diamond		1.242+ [0.680]		2.655** [0.648]					1.470 [0.920]
H5	IUCN member organizations per million population \diamond						0.246 [0.379]			
	x Country's civil liberties and political rights \diamond									
	Organization's environmental damage cost (log) \diamond	0.378** [0.060]	0.380** [0.060]	0.445** [0.082]	0.447** [0.082]	0.447** [0.079]	0.447** [0.079]	0.132+ [0.078]	0.005+ [0.003]	0.133+ [0.078]
	Organization's sales (log) \diamond	0.242** [0.076]	0.243** [0.076]	0.211** [0.071]	0.210** [0.071]	0.199** [0.068]	0.200** [0.068]	0.318** [0.067]	0.013** [0.003]	0.318** [0.066]
	Organization listed on a foreign stock exchange	0.576** [0.100]	0.563** [0.100]	0.459** [0.116]	0.445** [0.116]	0.489** [0.107]	0.480** [0.107]	0.378** [0.127]	0.015** [0.006]	0.369** [0.129]
	Kyoto Protocol entered into force	-0.392* [0.154]	-0.376* [0.158]	0.761** [0.207]	0.778** [0.205]	0.556** [0.181]	0.568** [0.182]	0.694** [0.113]	0.028** [0.005]	0.711** [0.112]
	Country's annual national outward FDI	0.010 [0.057]	0.010 [0.053]	-0.179** [0.051]	-0.197** [0.051]	-0.079+ [0.045]	-0.082+ [0.045]	-0.126** [0.048]	-0.005** [0.002]	-0.127** [0.046]
	Country's per capita real GDP	-0.272* [0.124]	-0.197 [0.130]	-0.308* [0.155]	-0.157 [0.151]	-0.202+ [0.113]	-0.188+ [0.113]	-0.094 [0.110]	-0.004 [0.005]	-0.005 [0.120]
	Country's environmental stress	-0.007 [0.006]	-0.007 [0.006]	-0.016+ [0.009]	-0.017+ [0.009]	-0.006 [0.007]	-0.006 [0.007]	-0.002 [0.006]	-0.000 [0.000]	-0.002 [0.006]
	Organization's percentage of sales to foreign countries	0.112 [0.151]	0.114 [0.151]	-0.104 [0.171]	-0.106 [0.171]	0.020 [0.158]	0.022 [0.157]	-0.237+ [0.128]	-0.010+ [0.005]	-0.241+ [0.127]
	Organization's return on assets	-0.024 [0.382]	-0.028 [0.379]	-0.146 [0.302]	-0.160 [0.298]	-0.195 [0.299]	-0.188 [0.301]	-0.044 [0.328]	-0.002 [0.013]	-0.049 [0.327]
	Year dummies (2005-2007)	Included	Included	Included	Included	Included	Included	Included		Included
	Industry dummies (2-digit SIC codes)	Included	Included	Included	Included	Included	Included	Included		Included
	Constant	-0.329 [1.277]	-1.125 [1.269]	2.121 [2.023]	0.699 [1.951]	-0.240 [1.378]	-0.412 [1.386]	-1.825 [1.224]		-2.786* [1.294]
	Observations (firm-years)	10,501	10,501	14,357	14,357	14,690	14,690	14,693		14,693
	Firms	3,371	3,371	4,507	4,507	4,643	4,643	4,646		4,646
	Countries	45	45	32	32	45	45	46		46

This table reports coefficients and average marginal effects from fractional logit models estimated as general linear models with a logit link function and binomial family, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations, environmental governance, globalization index, IUCN member organizations per million population, civil liberties and political rights, outward foreign direct investment, environmental stress, and organization's percentage of sales to foreign countries.*

APPENDIX B: Selective Disclosure Analysis – Robustness Tests

We conducted several robustness tests of our selective disclosure models. First, we estimated our models with standard errors clustered by firm rather than by country, which provided more precise estimates, bolstering support for all of the conclusions described above (results available on request). We also estimated our models on the two subsamples described earlier: first, excluding companies headquartered in the United States; second, excluding companies headquartered in countries that hosted 20 or fewer headquarters. The results, reported in Tables B-1 and B-2, yielded nearly identical coefficients and the same inferences as our primary models (Table 6), indicating that our primary results were robust to these alternative subsamples. We also used the alternative measure of globalization exposure described above, substituting *IUCN member organizations per million population* for the *globalization index*. These results, reported in Table B-3, are nearly identical to our primary results, indicating that our results are robust to various measures of globalization exposure. Finally, we used a third measure of organizational visibility: corporate employment. We obtained employment data from Worldscope, took the log of employment after adding 1000 (to reduce the impact of small values in the log transformation), and centered this variable. Table B-4 reports the results of the four models in which we substituted log employment for log sales (both as the main effect and in the interaction terms). The sample size is somewhat smaller than in our primary models because we could not obtain employment data for our entire sample. These models continue to yield negative coefficients on all four interaction terms and all estimates remain statistically significant at conventional levels except that, for the term that interacts employment with the country's environmental governance, significance declines to the 15% level. This calls for some caution in

concluding that a country's environmental governance moderates more visible organizations' propensity for selective disclosure.

**TABLE B-1. Selective Disclosure Analysis – Robustness Tests:
Excluding USA-Headquartered Companies**

Dependent variable: Selective Disclosure Magnitude

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Country's engagement in intergovernmental environmental organizations \diamond	-0.019*	-0.017+	-0.020*	-0.019*	-0.020*	-0.017+	-0.020*	-0.017+
	[0.009]	[0.010]	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]
Country's environmental governance \diamond	0.003	0.002	0.002	0.004	0.001	-0.000	0.002	-0.000
	[0.010]	[0.010]	[0.010]	[0.010]	[0.010]	[0.010]	[0.010]	[0.010]
Country's globalization index \diamond	-0.176**	-0.152*	-0.169**	-0.167**	-0.164**	-0.143*	-0.175**	-0.161*
	[0.059]	[0.062]	[0.057]	[0.058]	[0.059]	[0.059]	[0.059]	[0.061]
Country's civil liberties and political rights \diamond	-0.018**	-0.019**	-0.018**	-0.019**	-0.018**	-0.018**	-0.016*	-0.019**
	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
Country's engagement in intergovernmental environmental orgs. \diamond x Organization's environmental damage cost (log) \diamond	-0.010**							
	[0.003]							
Country's engagement in intergovernmental environmental orgs. \diamond x Organization's sales (log) \diamond		-0.012**						
		[0.003]						
Country's environmental governance \diamond x Organization's environmental damage cost (log) \diamond			-0.004+					
			[0.002]					
Country's environmental governance \diamond x Organization's sales (log) \diamond				-0.006*				
				[0.003]				
Country's globalization index \diamond x Organization's environmental damage cost (log) \diamond					-0.039**			
					[0.010]			
Country's globalization index \diamond x Organization's sales (log) \diamond						-0.040**		
						[0.008]		
Country's civil liberties and political rights \diamond x Organization's environmental damage cost (log) \diamond							-0.005**	
							[0.001]	
Country's civil liberties and political rights \diamond x Organization's sales (log) \diamond								-0.006**
								[0.001]
Organization's environmental damage cost (log) \diamond	-0.052**	-0.052**	-0.052**	-0.051**	-0.053**	-0.051**	-0.054**	-0.052**
	[0.006]	[0.005]	[0.006]	[0.006]	[0.005]	[0.006]	[0.006]	[0.006]
Organization's sales (log) \diamond	-0.006	-0.005	-0.007	-0.007	-0.006	-0.006	-0.006	-0.007
	[0.006]	[0.004]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
Organization listed on a foreign stock exchange	-0.037**	-0.036**	-0.039**	-0.038**	-0.037**	-0.037**	-0.038**	-0.037**
	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]	[0.007]
Kyoto Protocol entered into force	0.027	0.025	0.029	0.029	0.030	0.030+	0.030	0.029
	[0.018]	[0.016]	[0.019]	[0.018]	[0.018]	[0.017]	[0.019]	[0.018]
Country's annual national outward FDI	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	-0.002	-0.002
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
Country's per capita real GDP	0.022*	0.021+	0.023*	0.021+	0.023*	0.020+	0.022*	0.022*
	[0.010]	[0.011]	[0.010]	[0.011]	[0.011]	[0.010]	[0.011]	[0.011]
Country's environmental stress	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Organization's percentage of sales to foreign countries	-0.023+	-0.022	-0.023+	-0.023+	-0.019	-0.022	-0.023+	-0.023+
	[0.013]	[0.014]	[0.013]	[0.013]	[0.012]	[0.013]	[0.013]	[0.013]
Organization's return on assets	0.003	0.007	0.005	0.003	0.007	0.009	0.006	0.008
	[0.015]	[0.016]	[0.014]	[0.015]	[0.013]	[0.015]	[0.014]	[0.015]
Year dummies (2005-2007)	Included	Included	Included	Included	Included	Included	Included	Included
Industry dummies (2-digit SIC codes)	Included	Included	Included	Included	Included	Included	Included	Included
Constant	-0.260*	-0.239*	-0.263*	-0.234*	-0.272*	-0.244*	-0.256*	-0.249*
	[0.113]	[0.116]	[0.114]	[0.115]	[0.115]	[0.112]	[0.115]	[0.113]
Observations (firm-years)	10,501	10,501	10,501	10,501	10,501	10,501	10,501	10,501
Firms	3,371	3,371	3,371	3,371	3,371	3,371	3,371	3,371
Countries	45	45	45	45	45	45	45	45
R-squared	0.260	0.261	0.256	0.256	0.262	0.259	0.260	0.260

These models are estimated on the subsample of companies that excludes those headquartered in the United States, and serve as robustness tests of the models presented in Table 6 that are estimated on the full sample. This table reports OLS regression coefficients, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations*, *environmental governance*, *globalization index*, *civil liberties and political rights*, *outward foreign direct investment*, *environmental stress*, and *organization's percentage of sales to foreign countries*.

**TABLE B-2. Selective Disclosure Analysis – Robustness Tests:
Excluding Infrequent Headquarters Countries**

Dependent variable: Selective Disclosure Magnitude

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Country's engagement in intergovernmental environmental organizations \diamond	-0.020 [0.013]	-0.018 [0.014]	-0.021+ [0.012]	-0.021+ [0.012]	-0.021+ [0.012]	-0.020 [0.012]	-0.021+ [0.012]	-0.020 [0.012]
Country's environmental governance \diamond	-0.009 [0.012]	-0.010 [0.012]	-0.010 [0.011]	-0.008 [0.012]	-0.010 [0.011]	-0.012 [0.011]	-0.010 [0.012]	-0.012 [0.011]
Country's globalization index \diamond	-0.209** [0.072]	-0.184* [0.072]	-0.203** [0.072]	-0.201** [0.072]	-0.196** [0.071]	-0.181* [0.072]	-0.205** [0.072]	-0.193* [0.072]
Country's civil liberties and political rights \diamond	-0.015+ [0.008]	-0.017+ [0.009]	-0.016+ [0.008]	-0.017+ [0.008]	-0.016* [0.008]	-0.016+ [0.008]	-0.014+ [0.008]	-0.017+ [0.008]
Country's engagement in intergovernmental environmental orgs. \diamond	-0.009** [0.003]							
x Organization's environmental damage cost (log) \diamond								
Country's engagement in intergovernmental environmental orgs. \diamond		-0.012** [0.004]						
x Organization's sales (log) \diamond								
Country's environmental governance \diamond			-0.005+ [0.003]					
x Organization's environmental damage cost (log) \diamond								
Country's environmental governance \diamond				-0.005+ [0.003]				
x Organization's sales (log) \diamond								
Country's globalization index \diamond					-0.036** [0.009]			
x Organization's environmental damage cost (log) \diamond								
Country's globalization index \diamond						-0.032** [0.008]		
x Organization's sales (log) \diamond								
Country's civil liberties and political rights \diamond							-0.004** [0.001]	
x Organization's environmental damage cost (log) \diamond								
Country's civil liberties and political rights \diamond								-0.004** [0.001]
x Organization's sales (log) \diamond								
Organization's environmental damage cost (log) \diamond	-0.053** [0.005]	-0.053** [0.004]	-0.053** [0.005]	-0.053** [0.005]	-0.053** [0.004]	-0.053** [0.005]	-0.054** [0.004]	-0.053** [0.005]
Organization's sales (log) \diamond	-0.003 [0.006]	-0.002 [0.004]	-0.004 [0.006]	-0.004 [0.006]	-0.004 [0.006]	-0.004 [0.006]	-0.004 [0.006]	-0.004 [0.006]
Organization listed on a foreign stock exchange	-0.027** [0.008]	-0.026** [0.008]	-0.028** [0.008]	-0.028** [0.008]	-0.027** [0.008]	-0.028** [0.008]	-0.028** [0.008]	-0.028** [0.007]
Kyoto Protocol entered into force	-0.050** [0.013]	-0.051** [0.012]	-0.048** [0.013]	-0.048** [0.013]	-0.048** [0.013]	-0.049** [0.013]	-0.048** [0.013]	-0.050** [0.013]
Country's annual national outward FDI	0.013** [0.004]	0.013** [0.004]	0.013** [0.004]	0.013** [0.004]	0.013** [0.004]	0.014** [0.004]	0.013** [0.004]	0.013** [0.004]
Country's per capita real GDP	0.024+ [0.013]	0.022 [0.013]	0.024+ [0.013]	0.022 [0.013]	0.024+ [0.013]	0.022+ [0.013]	0.023+ [0.013]	0.024+ [0.013]
Country's environmental stress	0.002* [0.001]	0.002* [0.001]	0.002* [0.001]	0.002* [0.001]	0.002* [0.001]	0.002* [0.001]	0.002* [0.001]	0.002* [0.001]
Organization's percentage of sales to foreign countries	-0.019 [0.014]	-0.017 [0.015]	-0.018 [0.014]	-0.018 [0.014]	-0.015 [0.014]	-0.017 [0.014]	-0.020 [0.014]	-0.019 [0.014]
Organization's return on assets	0.006 [0.011]	0.008 [0.012]	0.007 [0.010]	0.006 [0.011]	0.009 [0.010]	0.010 [0.011]	0.008 [0.010]	0.009 [0.011]
Year dummies (2005-2007)	Included	Included	Included	Included	Included	Included	Included	Included
Industry dummies (2-digit SIC codes)	Included	Included	Included	Included	Included	Included	Included	Included
Constant	-0.443* [0.169]	-0.428* [0.167]	-0.448* [0.170]	-0.427* [0.170]	-0.452* [0.169]	-0.431* [0.167]	-0.441* [0.170]	-0.440* [0.169]
Observations (firm-years)	14,357	14,357	14,357	14,357	14,357	14,357	14,357	14,357
Firms	4,507	4,507	4,507	4,507	4,507	4,507	4,507	4,507
Countries	32	32	32	32	32	32	32	32
R-squared	0.264	0.265	0.261	0.261	0.265	0.263	0.264	0.262

These models are estimated on the subsample of companies that excludes those headquartered in countries that host fewer than 20 headquarters, and serve as robustness tests of the models presented in Table 6 that are estimated on the full sample. This table reports OLS regression coefficients, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations*, *environmental governance*, *globalization index*, *civil liberties and political rights*, *outward foreign direct investment*, *environmental stress*, and *organization's percentage of sales to foreign countries*.

**TABLE B-3. Selective Disclosure Analysis – Robustness Tests:
Alternative Measure of Globalization Exposure**

Dependent variable: Selective Disclosure Magnitude

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Country's engagement in intergovernmental environmental organizations \diamond	-0.040** [0.011]	-0.036** [0.011]	-0.040** [0.010]	-0.039** [0.010]	-0.041** [0.010]	-0.038** [0.010]	-0.039** [0.010]	-0.036** [0.010]
Country's environmental governance \diamond	-0.001 [0.010]	-0.002 [0.010]	-0.003 [0.009]	-0.001 [0.010]	-0.004 [0.009]	-0.004 [0.009]	-0.003 [0.010]	-0.005 [0.009]
IUCN member organizations per million population \diamond	-0.044* [0.017]	-0.042* [0.017]	-0.042* [0.018]	-0.042* [0.018]	-0.041* [0.019]	-0.038* [0.018]	-0.043* [0.018]	-0.042* [0.018]
Country's civil liberties and political rights \diamond	-0.006 [0.006]	-0.008 [0.006]	-0.007 [0.005]	-0.007 [0.005]	-0.007 [0.005]	-0.008 [0.005]	-0.005 [0.005]	-0.008 [0.005]
Country's engagement in intergovernmental environmental orgs. \diamond	-0.010** [0.003]							
x Organization's environmental damage cost (log) \diamond		-0.013** [0.003]						
Country's engagement in intergovernmental environmental orgs. \diamond								
x Organization's sales (log) \diamond			-0.005+ [0.002]					
Country's environmental governance \diamond				-0.005* [0.003]				
x Organization's environmental damage cost (log) \diamond					-0.012+ [0.006]			
Country's environmental governance \diamond						-0.011+ [0.006]		
x Organization's sales (log) \diamond							-0.004** [0.001]	
IUCN member organizations per million population \diamond								-0.005** [0.001]
x Organization's environmental damage cost (log) \diamond								
IUCN member organizations per million population \diamond								
x Organization's sales standardized by country (log) \diamond								
Country's civil liberties and political rights \diamond								
x Organization's environmental damage cost (log) \diamond								
Country's civil liberties and political rights \diamond								
x Organization's sales (log) \diamond								
Organization's environmental damage cost (log) \diamond	-0.054** [0.005]	-0.053** [0.004]	-0.053** [0.005]	-0.053** [0.005]	-0.047** [0.005]	-0.054** [0.005]	-0.054** [0.004]	-0.053** [0.004]
Organization's sales (log) \diamond	-0.003 [0.005]	-0.002 [0.003]	-0.003 [0.006]	-0.003 [0.005]	-0.003 [0.006]	0.004 [0.004]	-0.003 [0.006]	-0.003 [0.005]
Organization listed on a foreign stock exchange	-0.030** [0.007]	-0.029** [0.007]	-0.032** [0.007]	-0.031** [0.007]	-0.032** [0.007]	-0.032** [0.008]	-0.031** [0.007]	-0.030** [0.007]
Kyoto Protocol entered into force	-0.033** [0.012]	-0.035** [0.011]	-0.032* [0.012]	-0.033* [0.012]	-0.031* [0.013]	-0.031* [0.013]	-0.032* [0.012]	-0.035** [0.013]
Country's annual national outward FDI	0.003 [0.003]	0.004 [0.003]	0.003 [0.003]	0.004 [0.003]	0.004 [0.003]	0.004 [0.003]	0.004 [0.003]	0.005 [0.003]
Country's per capita real GDP	0.015 [0.010]	0.015 [0.009]	0.016 [0.010]	0.014 [0.010]	0.016+ [0.010]	0.014 [0.010]	0.015 [0.010]	0.016 [0.010]
Country's environmental stress	0.001 [0.001]	0.001 [0.001]	0.000 [0.001]	0.001 [0.001]	0.001 [0.001]	0.001 [0.001]	0.001 [0.001]	0.001 [0.001]
Organization's percentage of sales to foreign countries	-0.028+ [0.014]	-0.025+ [0.015]	-0.028* [0.014]	-0.027+ [0.014]	-0.026+ [0.014]	-0.025+ [0.014]	-0.029* [0.013]	-0.027+ [0.014]
Organization's return on assets	0.008 [0.012]	0.011 [0.013]	0.009 [0.011]	0.008 [0.012]	0.012 [0.011]	0.013 [0.010]	0.010 [0.011]	0.012 [0.012]
Year dummies (2005-2007)	Included	Included	Included	Included	Included	Included	Included	Included
Industry dummies (2-digit SIC codes)	Included	Included	Included	Included	Included	Included	Included	Included
Constant	-0.226* [0.111]	-0.229* [0.107]	-0.234* [0.112]	-0.215+ [0.112]	-0.246* [0.110]	-0.223* [0.109]	-0.234* [0.110]	-0.251* [0.108]
Observations (firm-years)	14,690	14,690	14,690	14,690	14,690	14,690	14,690	14,690
Firms	4,646	4,646	4,646	4,646	4,646	4,646	4,646	4,646
Countries	46	46	46	46	46	46	46	46
R-squared	0.263	0.264	0.259	0.259	0.262	0.260	0.262	0.262

These models substitute *IUCN member organizations per million population* for the *globalization index* used in the models presented in Table 6. This table reports OLS regression coefficients, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations, environmental governance, civil liberties and political rights, outward foreign direct investment, environmental stress, and organization's percentage of sales to foreign countries.*

**TABLE B-4. Selective Disclosure Analysis – Robustness Tests:
Alternative Measure of Visibility**

Dependent variable: Selective Disclosure Magnitude

	(1)	(2)	(3)	(4)
Country's engagement in intergovernmental environmental organizations \diamond	-0.024+ [0.013]	-0.026* [0.012]	-0.026* [0.012]	-0.026* [0.012]
Country's environmental governance \diamond	-0.005 [0.011]	-0.007 [0.011]	-0.008 [0.011]	-0.007 [0.011]
Country's globalization index \diamond	-0.189** [0.064]	-0.195** [0.064]	-0.184** [0.062]	-0.192** [0.063]
Country's civil liberties and political rights \diamond	-0.013 [0.008]	-0.015+ [0.007]	-0.016* [0.007]	-0.014+ [0.008]
Country's engagement in intergovernmental environmental orgs. \diamond x Organization's employment (log) \diamond	-0.014** [0.004]			
Country's environmental governance \diamond x Organization's employment (log) \diamond		-0.005 [0.003]		
Country's globalization index \diamond x Organization's employment (log) \diamond			-0.020+ [0.012]	
Country's civil liberties and political rights \diamond x Organization's employment (log) \diamond				-0.003+ [0.002]
Organization's environmental damage cost (log) \diamond	-0.053** [0.004]	-0.054** [0.004]	-0.054** [0.004]	-0.054** [0.004]
Organization's employment (log) \diamond	-0.004 [0.005]	-0.006 [0.006]	-0.006 [0.006]	-0.006 [0.006]
Organization listed on a foreign stock exchange	-0.028** [0.007]	-0.030** [0.007]	-0.031** [0.007]	-0.031** [0.007]
Kyoto Protocol entered into force	-0.053** [0.010]	-0.052** [0.011]	-0.052** [0.011]	-0.052** [0.011]
Country's annual national outward FDI	0.009** [0.003]	0.010** [0.003]	0.010** [0.003]	0.010** [0.003]
Country's per capita real GDP	0.021+ [0.012]	0.023+ [0.012]	0.023+ [0.012]	0.023+ [0.012]
Country's environmental stress	0.001* [0.001]	0.001* [0.001]	0.001* [0.001]	0.001* [0.001]
Organization's percentage of sales to foreign countries	-0.020 [0.014]	-0.020 [0.014]	-0.021 [0.014]	-0.022 [0.014]
Organization's return on assets	0.002 [0.009]	0.001 [0.009]	0.002 [0.009]	0.002 [0.009]
Year dummies (2005-2007)	Included	Included	Included	Included
Industry dummies (2-digit SIC codes)	Included	Included	Included	Included
Constant	-0.371* [0.138]	-0.386** [0.138]	-0.391** [0.137]	-0.384** [0.137]
Observations (firm-years)	13,668	13,668	13,668	13,668
Firms	4,401	4,401	4,401	4,401
Countries	45	45	45	45
R-squared	0.265	0.263	0.263	0.263

These models substitute *organization's employment* for *organization's sales* used in the models presented in Table 6. This table reports OLS regression coefficients, with standard errors clustered by country in brackets; ** p<0.01; * p<0.05; + p<0.10. \diamond denotes centered variables. All models also include dummy variables denoting instances where missing values of the following variables were recoded to zero: *country's engagement in intergovernmental environmental organizations*, *environmental governance*, *globalization index*, *civil liberties and political rights*, *outward foreign direct investment*, *environmental stress*, and *organization's percentage of sales to foreign countries*.