Who Is the Fairest of Them All? Firm and Institutional Determinants of Value Creation Related to CSR Information Disclosure

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Abstract: In this article, we investigate the impact of the disclosure of CSR information (in the form of ethical certification announcements) on firm value, measured as stock market reactions. When determining the potential value of CSR practices, investors evaluate disclosed information against firm-level characteristics. To cope with uncertainties related to voluntary disclosure and information asymmetries, investors also rely on heuristic evaluations of the congruity between firm- and institutional-level characteristics. We find that ethical certification information is especially valuable in opaque contexts with fewer firm reporting standards and poor protection mechanisms for investors. Overall, our findings suggest that in contexts where information asymmetries between insiders and outsiders are higher, validation of CSR activities by independent third-party institutions is more effective as a value creation mechanism.

Keywords: CSR voluntary disclosure; communication; event study; stock market reaction; value creation

"Mirror, mirror on the wall, who is the fairest of them all?"

–The wicked Queen Elspeth

Introduction

Increasingly, managers are voluntarily disclosing corporate social responsibility (CSR) information to enhance their companies' images. Sustainability reports or ethical claims and statements serve as "mirrors" that enable managers to view themselves through others' eyes and inspect every part of their practices and strategies. Since information asymmetries inherently introduce uncertainty into the process of interpreting CSR information, formal certifications function as the "magic mirrors" that help stakeholders assess which companies are the "fairest." In this paper, we test the stock market's reaction to information released by an independent institution that awards CSR-related certifications. Additionally, we analyze factors at the firm and institutional levels that affect the how investors perceive and interpret this information.

Non-financial information—especially CSR-related information—plays a crucial role in determining firm value (Crane and Glozer, 2016; Eteokleous, Leonidou, and Katsikeas, 2016; García-Sánchez, Cuadrado-Ballesteros, and Frías-Aceituno, 2016; García-Sánchez, Rodríguez-Ariza, and Frías-Aceituno, 2013; Luo *et al.*, 2015; Sartor *et al.*, 2016). A financial advisor explained, "good sustainability and environmentally friendly behavior add value over the longer term—although it is hard to immediately measure that in financial terms" (Luo *et al.*, 2015, p. 125). One way that CSR information disclosure adds value is by decreasing the risk perceived by investors (García-Sánchez *et al.*, 2016). Investors evaluate intangible "social approval assets" of a firm that derive their value from favorable collective perceptions (Pfarrer, Pollock, and Rindova, 2010; Powell, 2011). These assets represent a company's ability to convey preferred

meanings and suggest interpretations to affect stakeholder responses (Rhee and Fiss, 2014). This ability is particularly relevant in the domain of corporate ethical behavior which involves controversial interpretations and relies on social acceptance of a firm's actions and statements.

An open question is whether shaping corporate communication around the CSR frame enhances or destroys value in the stock market (e.g., Barnett, 2007; Kang, Germann, and Grewal, 2016; Luo and Bhattacharya, 2006; Luo *et al.*, 2015). Although CSR-related information is part of many firms' long-term strategies (Luo *et al.*, 2015), Bushee and Friedman (2016) and Luo *et al.* (2015) expressed doubts about the link between CSR and financial performance. From a financial perspective, CSR could benefit shareholders by engaging managers in value-enhancing activities (Dimson, Karakas, and Li, 2015), but it could also be detrimental if self-interested managers manipulate CSR communications and mislead shareholders to boost their firms' reputations (Bénabou and Tirole, 2010). The information discrepancy between managers as insiders and investors as outsiders has a negative impact on stock prices and the cost of capital (Leuz and Verrecchia, 2000). Indeed, voluntary disclosure of CSR activities may not be taken seriously by investors because firms use communication media to manage perceptions of social and environmental legitimacy and enhance the desirability and appropriateness of their behaviors (Aerts and Cormier, 2009). In fact, disclosure moderates both the negative effects of a weak environmental, social, and governance activity and its positive effects due to its strength (Fatemi, Gluami and Kaiser, 2017).

To mitigate these problems, investors rely on analysts and experts to certify the relevance and trustworthiness of CSR information. Such intermediaries can reduce information asymmetries between firms and stakeholders by synthesizing, selecting and rebroadcasting existing information or by discovering new information through independent investigations

(Dyck and Zingales, 2002; Zingales, 2000). In this study, we explore the effects of CSR information disclosure on stock market performance by considering Ethisphere's annual announcements of companies the independent rating institution deems the *World's Most Ethical Companies*®. In this context, Ethisphere plays a crucial role by providing high quality information about firms' abilities and willingness to engage in ethical business practices, which are a form of CSR. Moreover, by requesting to be evaluated by Ethisphere, firms send signals about how they want to be perceived. Using an event study methodology, we provide evidence of how voluntary disclosure of CSR information affects shareholder value. From a finance perspective, this evidence is remarkably, as investors react to information already known by the market, namely the firms' CSR behavior.

While scholars have shown that disclosure of CSR activities is perceived positively by consumers (e.g., Kang *et al*. 2016; Luo and Bhattacharya, 2006; Öberseder, Schlegelmilch, and Murphy, 2013), less is known about investors' perceptions of these types of communications (Kang *et al.*, 2016; Luo and Bhattacharya, 2006; Luo *et al.*, 2015; Saeidi *et al.*, 2015). Mixed results (Kang *et al.*, 2016; Luo and Bhattacharya, 2004; Margolis and Walsh, 2003; Saeidi *et al.*, 2015; Young and Makhija, 2014) can be ascribed to the voluntary (vs. mandatory) nature of CSR communication (Hockerts and Moir, 2004; Luo and Bhattacharya, 2006; Miles and Munilla, 2004; Sartor *et al.*, 2016). Managerial theorists have approached the relationship between CSR communication and financial performance from several perspectives, using different metrics to account for the motivations behind and outcomes of voluntary disclosure of CSR information (Eteokleous *et al.*, 2016; García-Sánchez *et al.*, 2016; Nicholaeva and Bicho, 2011).

Beyond positive expectations about the attractiveness of CSR communication (e.g., Eteokleous *et al.*, 2016; Sartor *et al.*, 2016), the literature does not indicate how investors

perceive it. In line with a sociological perspective on financial markets (Rhee and Fiss, 2014; Zajac and Westphal, 2004), stock markets are influenced by cultural, social and institutional contexts in which the symbolic value of CSR is interpreted. Fama (1970) posited that prices fully reflect all available information. Schijven and Hitt (2012) and Rhee and Fiss (2014) argued that investors use heuristics to cope with information uncertainty and interpret the effect of information voluntarily disclosed by a firm on value creation. Since the symbolic value of CSR statements and behaviors is high, and CSR-related information is voluntarily disclosed (Crane and Glozer, 2016) and actively scrutinized by investors (Luo *et al.*, 2015), we propose a model representing investors' decisions when they face relevant CSR-related information. In addition to determining an appropriate measure of these dynamics, we contribute to the literature by providing evidence of the effects of cultural, social and institutional contexts on the relationship between ethical corporate behavior and shareholder value as investors respond to CSR-related information.

The remainder of this article is organized as follows. In the next section, we approach investors' decisions from a sociological point of view by relaxing the economic-financial assumption. Then, we identify and discuss a set of determinants and mediators of the market premium. We graphically summarize our hypotheses in a conceptual model which frames the market's reaction to announcements about ethical certifications as an outcome of a "problemistic search" characterized by cognitive evaluations of firm-level variables. Investors address uncertainties related to societal approval and the potential to generate value by evaluating the companies' institutional contexts. We then describe the event study method aimed at assessing the market's reaction to Ethisphere's announcements before reporting the results of our multivariate analysis. In the final section, we discuss our findings and their implications.

Background and model

Firms seek legitimacy through CSR practices that enhance "corporate behavior up to a level where it is congruent with prevailing social norms, values and expectations of performance" (Sethi, 1975, p. 62). Scholars draw heavily on institutional theory to explain socially or environmentally responsible actions (for extensive reviews, see Garriga and Melé, 2004; Porter and Kramer, 2011). Institutional theorists (DiMaggio and Powell, 1983, 1991; Meyer and Rowan, 1977; Powell and DiMaggio, 2012) suggest that organizational legitimacy is not merely a resource; rather, it is "paramount for firm performance and survival" (Certo, 2003, p. 434) and reflects cultural alignment, normative support and respect of the rule of law (García-Sánchez *et al.*, 2013, 2016; Scott, 1995). Moreover, by incorporating societally legitimized elements, companies can "maximize their legitimacy and increase their resources and survival capabilities" (Meyer and Rowan, 1977, p. 352).

In the same vein, but from the opposite perspective, corporate scandals delegitimize businesses and amplify the perception that firms profit at society's expense (Porter and Kramer, 2011). Firms are perceived as a "major cause of social, environmental, and economic problems," and as a result, "capitalism is under siege" (Porter and Kramer, 2011, p. 89). Moreover, due to reputation spillover effects (Tirole, 1996; Zhang and Wiersema, 2009) an organization's behaviors shape perceptions of the overall financial system (Zhang and Wiersema, 2009, p. 695). Consequently, firms must act responsibly due to the moral obligation to replenish the societal and environmental resources they exploit (e.g., Barnett, 2007).

In this scenario, CSR communication has symbolic value as a form of stakeholder management (Crane and Glozer, 2016; Ellis, 1985; Fernandez-Feijoo, Romero, and Ruiz, 2014;

Maignan and Ferrell, 2004; Maignan, Ferrell, and Ferrell, 2005; Sartor *et al.*, 2016), which typically is accomplished through voluntary disclosure of information in non-financial reports (Crane and Glozer, 2016; García-Sánchez *et al.*, 2016; Sartor *et al.*, 2016). By voluntarily communicating CSR information, firms seek to manage perceptions of social and environmental legitimacy and to signal that their behaviors are desirable and appropriate. In doing so, firms shape their corporate images and influence how they are perceived by stakeholders and society (Aerts and Cormier, 2009; Öberseder *et al.*, 2013). Rather than contributing to instrumental outcomes, CSR communication is used as a meaning making tool in the construction of an ethical corporate image (Crane and Glozer, 2016; Powell, 2011). To restore stakeholders' confidence, some firms adopt voluntary CSR reporting standards such as those created by the Global Reporting Initiative (*GRI*) (Nikolaeva and Bicho, 2011) and Social Accountability International (i.e., SA8000) (Sartor *et al.*, 2016), or seek certifications from third-party institutions. The goal is to strengthen the relationship between CSR and managerial responsibilities, thereby enhancing the quality of CSR disclosure (Bushee and Friedman, 2016; García-Sánchez *et al.*, 2016; Miles and Munilla, 2004; Sartor *et al.*, 2016). Increasingly, multinational corporations are seeking ways to provide evidence of their social accountability; becoming certified requires certification of their entire supply chains. CSR communication has become a strategic marketing issue, and "many private and institutional investors use some type of social issue screening to exclude what they perceive to be environmentally or socially irresponsible investment choices" (Miles and Munilla, 2004, p. 2).

Since (a) the high symbolic value of CSR-related information—in particular, voluntary information disclosure or application for certification—is situated within a firm's societal context, and (b) the stock market may be influenced by cultural, social and institutional contexts

(Bushee and Friedman, 2016; Rhee and Fiss, 2014; Zajac and Westphal, 2004), we can take a sociological perspective and approach stock market reactions as outcomes of investors' decision-making processes. Adopting this perspective, we relax the financial economic assumption of "stock market reactions as an objective performance measure based on rational-deductive calculation" (Schijven and Hitt, 2012, p. 1250). We argue that when investors evaluate the potential value of a communicated CSR action or statement (e.g., an announcement that a firm appears on Ethisphere's list of the *World's Most Ethical Companies*®), they integrate available objective information about the company with complementary information inferred based on the perceived congruency between the company's institutional context and its CSR strategy.

We shape this argument around general explanations in the CSR literature on why firms act in socially or environmentally friendly ways, specifically "that firms undertake CSR in order to enhance perceptions of their legitimacy by societal actors" (Young and Makhija, 2014, p. 672). Legitimacy differences can be viewed as a function of "problemistic search" (Schijven and Hitt, 2012) in which (a) the problem is the informational disadvantage faced by investors face as they evaluate a company's CSR communications, and (b) the search is aimed at finding information that "can help them mitigate their lack of detailed insight into a given deal" (Schijven and Hitt, 2012, p. 1250). This process includes a cognitive evaluation of the available information following a "central route" characterized by rational-deductive, cognitively demanding calculations (Petty, Briñol, and Priester, 2009; Petty and Cacioppo, 1986; Schijven and Hitt, 2012). When unable to fully access this information, investors take "peripheral routes" based on simplified heuristics, acknowledging a lack of complete information and relying on the correctness of their perceptions (Schijven and Hitt, 2012; Tormala, Briñol, and Petty, 2006). Applying this framework, the "central route" equates to the direct effects of objective,

measurable, firm-specific variables on a firm's financial performance, and the "peripheral route" translates as the moderating effects of institutional variables that are expected to influence the directions and strengths of the direct effects (e.g., Baron and Kenny, 1986).

Direct effects: firm level variables

Firms' visibility in the market

Since market visibility affects how a company is judged by society and because we are evaluating investors' reactions to CSR-related communication, we simultaneously consider two indicators, namely inclusion on the Top Brand list of Best Global Brands and adoption of GRI standards, as two major components in the construction of an ethical corporate identity (Powell, 2011). First, we consider being ranked as a *top brand* to be a major signal of a company's visibility in society (Nikolaeva and Bicho, 2011; Young and Makhija, 2014). The ethical behavior of such companies is likely to be scrutinized more than companies that are "flying under the radar," since societal actors "may target the most visible or successful companies merely to draw attention to an issue, even if those corporations actually have little impact on the problem at hand" (Porter and Kramer, 2006, p. 80). Second, we consider the adoption of *GRI* standards as a signal of the company's willingness to voluntarily disclose CSR-related actions and policies (Nikolaeva and Bicho, 2011). The adoption of a well-established and acknowledged standards (*GRI*) is expected to improve the confidence of investors against the noise induced by unique firm characteristics (Bushee and Friedman, 2016; García-Sánchez *et al.*, 2016). We therefore hypothesize direct, positive effects of *top brand* (i.e., inclusion on the Top Brand list of Best Global Brands; Hypothesis 1a), and *GRI* (i.e., voluntary adoption of the GRI; Hypothesis 1b) on a firm's cumulative average returns (*CAR*).

Firms' vulnerability in the market

Scholars adopt a more economic-based perspective to determine the financial benefits of engaging in CSR rather than relying on exogenous, sociological factors (Young and Makhija, 2014). Companies that are "doing well while doing good" are perceived as doing well financially and having "slack resources," or at least as employing good management practices which ultimately enhance financial performance (for a review, see Kang *et al.*, 2016). Interestingly, proponents of the "slack resources" motivation believe that companies engaged in CSR have excess cash, since socially responsible behaviors are voluntary (Chin, Hambrick, and Treviño, 2013; Kang *et al.*, 2016). As the concepts of "shared value" (Porter and Kramer, 2006) or "blended value" (Emerson, 2003) emphasize, CSR is expected to generate value, even though, as noted previously, controversy remains about whether CSR improves financial performance. Recently, Young and Makhija (2014) integrated the sociological perspective of institutional theory with the economic perspective of financial returns to explain firms' engagement in CSR activities. They found that "firms more economically vulnerable to market fluctuations and competition are expected to receive greater benefit from societal goodwill than those whose operations are more immune to unpredictable swings in their environment" (Young and Makhija, 2014, p. 671). Translated to the context of this study in which the ethical behaviors of the population under scrutiny were independently certified, we can expect that investors in the stock market assigned a premium to those companies that obtained this form of legitimacy as "insurance" against unpredictability in the economic environment (e.g., Meyer, Rowan, Powell, and DiMaggio, 1991), and that the size of this premium depended on the extent of their economic vulnerability. In other words, we can expect that when evaluating CSR information,

investors also analyzed dimensions of economic vulnerability to determine a firm's value in the stock market.

The first two variables are proxies for firm size. The latter is a proxy for dividend policy. Managers derive private benefits from being identified as socially responsible, which may encourage them to over-engage in social and environmental activities to improve their reputations. On the other hand, managers must meet stakeholders' expectations for wealth creation; firms with less opaque CSR practices also use dividends to fulfill their shareholders' expectations. Moreover, firms engaged in CSR are generally at the mature stage (Attig *et al.*, 2016). We measure economic vulnerability using three firm-level variables: *total assets*, *number of employees* and *dividend yield*. We therefore hypothesize direct, positive effects of a firm's *total assets* (Hypothesis 2a), *number of employees* (Hypothesis 2b) and *dividend yield* (Hypothesis 2c) on its *CAR*.

Moderation effects: institutional variables

CSR information disclosure is associated with additional uncertainty over reliability, since the information communicated by managers is not fully verifiable by external observation (Ellis, 1985; Hockerts and Moir, 2004; Luo *et al.*, 2015; Zhang and Wiersema, 2009). Thus, we argue that to compensate for their lack of detailed insights into these sources of information, investors draw on other public information to assess the reliability and correctness of their evaluations, which is reflected in the premiums they assign (Schijven and Hitt, 2012). Since we are evaluating investment decisions coinciding with announcements about voluntary ethical certifications, we may expect investors to evaluate the congruence between a company's social image and its institutional context in order to cope with information uncertainties. This

peripheral element helps investors evaluate firm-level variables; thus it can be analytically accounted for by the moderating effect of institutional factors on the relationship between firm-level variables and CAR.

A recent trend is to analyze the institutional context to explain CSR behaviors, especially when referring to the voluntary disclosure of CSR information (e.g., García-Sánchez *et al.*, 2016; Young and Makhija, 2014). From a practice perspective, even though investors do use CSR-related information to justify investment decisions, a great deal of information uncertainty characterizes the relationship between CSR and short- and long-term performance; one sell-side analyst explained that beyond investors' expectations, "it is hard to immediately measure [this relationship] in financial terms" (Luo *et al.*, 2015, p. 125). Luo and Bhattacharya (2006) contended that this uncertainty can be attributed to different operating conditions that cause firms to differ "in executing, supporting and exploiting CSR initiatives" (p. 2). This unique dynamic interplay between firm-level characteristics and operating environments may thus "preclude stability in financial returns to CSR across firms and time" (Barnett, 2007, p. 795).

Moderation on firms' economic visibility

Although researchers have not yet investigated investors' evaluations of CSR information, previous findings suggest that investors may be influenced by the cultural, social and institutional contexts of corporate communications when making investment decisions. The evaluation of symbolic information is subjective and we know that this information is scrutinized by investors (Luo *et al.*, 2015). The literature shows that managers heavily consider contextual characteristics when deciding whether, what and how to communicate CSR-related information (e.g., García-Sánchez *et al.*, 2013, 2016; Nikolaeva and Bicho, 2011; Young and Makija, 2014).

It is safe to presume that investors who face uncertainty as they try to determine the value of a company's CSR behavior mimic the strategies employed by company managers to determine the level of fit between a company's CSR statements or actions and its institutional context.

At the national level, different institutional contexts reflect differences in various dimensions such as accounting practices, individualism versus collectivism, masculinity versus femininity, long-term versus short term orientation, rule of law, degree of freedom (e.g., speech, economic), characteristics of the press, religiosity, and attention to social and/or environmental problems, among others (e.g., Cedillo Torres *et al.*, 2012; García-Sánchez *et al.*, 2016; Nikolaeva and Bicho, 2011; Young and Makhija, 2014; Yang and Rivers, 2009). In this study, we analyze the moderating effects of religion (i.e., dummy variables indicating whether the dominant religion in a nation is *Catholic*, *Hindu* or *Protestant* or other), rule of law (i.e., a dummy variable indicating whether a nation operates under *common law*), *transparency*, *freedom of press*, *environmental policy*, and *economic freedom* (See Appendix A for details on data sources for these institutional variables.) We expect that these institutional variables have moderating effects on investors' evaluations of a company's (a) inclusion on the GRI's list of Best Global Brands (i.e., *top brand*; Hypothesis 3a) and (b) adoption of GRI standards (*GRI*; Hypothesis 3b).

Moderation on firms' economic vulnerability

Likewise, we can argue that evaluating economic vulnerability may be insufficient for assessing how an ethical image may contribute (or not) to a company's valuation on the stock market. Some have noted that companies may prosper at the expense of their communities (e.g., Porter and Kramer, 2011), and that bigger, more visible firms are exposed to intense stakeholder evaluation of their CSR practices and ethics (e.g., Young and Makhija, 2014). Although evidence

is lacking in the literature, we can speculate on the relationship between a company's economic vulnerability and its institutional context. While it can be generally expected that exposed companies are favorably evaluated based on activities that enhance the societal actors' awareness (Young and Makhija, 2014), this relationship differs in magnitude and direction depending on a company's unique combination endogenous and exogenous characteristics. Thus, we expect that the aforementioned institutional variables have moderating effects on investors' evaluations of a firm's *total assets* (Hypothesis 4a), *number of employees* (Hypothesis H4b) and *dividend yield* (Hypothesis H4c).

Drawing on all of these arguments, we propose the model depicted in Figure 1.

--- Insert Figure 1 about here ---

Method

Event study: Market reactions to ethical certification announcements

Our sample consists of firms included on Ethisphere's list of the *World's Most Ethical Companies*® released each year from 2007 to 2016, which yields a total of 714 observations over the 10-year study period. We performed an event study analysis of those observations, defining the day a list was announced as $t = 0$. Since information may have leaked into the market through rumors prior to the official announcements, we used a 21-day event window around this date (-10, +10)[1]. We defined individual firm *i*'s abnormal return experienced on day *t*

[1] Our results are also robust to different specifications using other event windows (-30, +30; -20, +20; -30, +1; -2, +2; -1, +1; etc.).

of the event window as the difference between the observed return ($R_{i,t}$) and the expected return ($\bar{\bar{R}}_{i,t}$):

$$AR_{i,t} = R_{i,t} - \bar{\bar{R}}_{i,t} \quad (1)$$

For the sake of robustness, expected returns are computed by using both a market model

$$\bar{\bar{R}}_{i,j} = \alpha_i + \beta_i \cdot R_{m,t} + \varepsilon_{i,t} \quad (2)$$

and a market-adjusted model

$$\bar{\bar{R}}_{i,j} = R_{m,t} + \varepsilon_{i,t} \quad (3)$$

where $R_{m,t}$ is the return on the firm's market index on day *t*; α_i, β_i are the robust OLS parameters for stock *i*, and $\varepsilon_{i,t}$ is the residual term. We estimated the market model's parameters (α_i and β_i) for the period from 130 to 31 trading days prior to the event window. For each observation, we computed the *CAR* as the sum of the daily abnormal returns. Hereafter, we only report market model results. CAR_i represents our dependent variable of the multivariate analysis. We present results for other endogenous variables in Appendix A, which includes definitions and main statistics (means and standard deviations).

Analytical model: How the premium is determined by investors' decisions

To test the model presented in Figure 1—that is, to test the effect of institutional variables on the relationships between firm-level characteristics and stock market reactions (i.e., *CARs*)—we followed Young and Makhija's (2014) method. To deal with nested data, we used hierarchical linear modeling (HLM), which is particularly appropriate for analyzing variances of outcome variables that vary hierarchically (in our case, at the firm and institutional levels). Since firms come from institutional environments with some common characteristics and multiple observations may occur for the same firm, the assumption of independence is violated for the

explanatory variables. We considered the firm characteristics to be Level-1 variables, and the institutional characteristics to be Level-2 variables. To apply HLM, we group mean centered the Level-1 firm variables to provide unbiased estimates of within-group effects, and grand mean centered the Level-2 institutional variables to provide estimates of the influence of firm-level variables. Combining the two effects provides unbiased estimates that distinguish within-group and between-group variance effects on the dependent variable. We used package lme4 of R to estimate the HLM regressions, specifying fixed and random effects to account for Level-1 and Level-2 variables. According to Young and Makhija (2014): "The correlation of errors within each Level-2 unit necessitates the estimation of a random effects model, which in turn allows for more accurate inferences about Level-1 fixed effects" (p. 683). Following the standard notation for HLM models, we summarize the HLM moderation model as:

$$Y_{i,j} = \gamma_{0,0} + \gamma_{1,0}X_{i,j} + \gamma_{0,1}M_j + \gamma_{1,1}M_jX_{i,j} + U_{1,j}X_{i,j} + U_{0,j} + \varepsilon_{i,j} \quad (5)$$

Moreover, we specify the Level-1 model as

$$Y_{i,j} = \beta_{0,j} + \beta_{1,j}X_{i,j} + R_{i,j} \quad (6)$$

the Level-2 models as

$$\beta_{0,j} = \gamma_{0,0} + \gamma_{0,1}M_j + U_{0,j} \quad (7a)$$

$$\beta_{1,j} = \gamma_{1,0} + \gamma_{1,1}M_j + U_{1,j} \quad (7b)$$

and the composite error as

$$R_{i,j} = U_{1,j}X_{i,j} + U_{0,j} + \varepsilon_{i,j} \quad (8)$$

In equations (5–8), *j* represents the country and *i* represents the observation (i.e., company), so $Y_{i,j}$ is the dependent variable (i.e., the *CAR* for company *i* in country *j*). Moreover, M_j is the value of the Level-2 moderator for country *j*, and $X_{i,j}$ is the value of the Level-1 predictor for observation *i* in country *j*. The composite error $R_{i,j}$ accounts for the random error associated with the Level-1 unit for *i* nested within the Level-2 unit for *j*, the random effect $U_{1,j}$ of the Level-2 unit (slope) for *j* and the random effect $U_{0,j}$ of the Level-2 unit (intercept) for *j*. Finally, $\gamma_{*,0}$ and $\gamma_{*,1}$ represent the intercepts and slopes in the Level-2 models.[2]

To avoid undue influence of the institutional environment and to account for correlation among the error terms for firms in the same country, we used the robust variance estimator described by Arai (2015). This approach accounts for within-group correlation of the error terms as well as the dominance of one country in the dataset. Furthermore, this approach does not require us to assume independence of the error terms for each observation, as in ordinary least squares.

In Table 1, we present the correlation matrix of the variables considered. Pearson (Spearman) coefficients appear below (above) the main diagonal. Both *assets* and *GRI* are positively correlated with *CAR*, our dependent variable. The stock market reacted positively to certification announcements for large firms that had adopted GRI standards in *Catholic* countries. The stock market reacted negatively to certification announcements for firms in *Hindu* or *Protestant* countries. The results for *common law*, *transparency*, *freedom of press* and *environmental policy* confirm these trends. However, these results are not confirmed when using

[2] Due to repeated observations, nesting errors at the 3rd level of the company require the specification of two Level-3 models, $\gamma_{0,1,k} = \delta_{0,1,0} + V_{0,k}$ and $\gamma_{1,1,k} = \delta_{1,1,0} + V_{1,k}$, for the two Level-2 slopes (as long as the specifications of $U_{0,j,k}$ and $U_{1,j,k}$ and consequently the computation of the composite error $R_{i,j}$ change). However, since $M_{j,k} = M_j$ for any Level-3 value for *k*, and since all predictors are already grand mean centered, the model and the results are the same.

ranks (Spearman) instead of monotonic linear relationships to compute the coefficients. The only exception is *top brand,* which is positively correlated using both methods. The values for the variable that detects the market reaction are higher for better known firms.

--- Insert Tables 1 and 2 about here ---

Results

Event study: the market reacts

Figure 2 shows the patterns of the average CAR based on the market-adjusted model (MAM, solid line) and the market model (MM, dashed line) around the announcement date and during the 21-day event window (-10, +10). The histogram shows the *t*-test of CARs obtained using the MAM. The average CAR becomes significant ($p < .01$) on the announcement date ($CAR = 0.452$; $t_{MAM} = 2.312$; $t_{MM} = 2.318$). After that, the statistical significance of the average CAR does not change dramatically.

--- Insert Figure 2 about here ---

The results seem to indicate that certification information was revealed by the public announcement, without meaningful leaks beforehand. We considered 10 pre-event window days because our sample included small firms in countries with less developed financial markets where a significant price effect several days before the official public announcement could be expected. This was not the case. Instead, the findings show negative average CAR values 10 days preceding the announcement.

How investors' decisions shape firms' market value after the announcements

Following recent literature (Young and Makhija, 2014) we present the full moderation analysis estimating the model of Figure 1, as analytically developed in equations 5–8. The baseline model of Table 2 ($R^2 = 0.03$; $F(9, 704) = 2.452$) indicates that the control variables have no effect on CARs. This result is confirmed in Models 1–6, which also consider the effects of firm characteristics on market reactions to certification announcements. Looking at Model 1 of Table 2, such announcements are positive for firms with more employees ($\beta_{Employees} = 0.118$), higher dividends ($\beta_{DividendYield} = 0.635$) and highly visible brands ($\beta_{TopBrand} = 1.705$). On the other hand, the negative sign for assets ($\beta_{Assets} = -0.008$) suggests that a positive higher market reaction is expected for smaller firms. An interesting result is the sign and the significance of GRI ($\beta_{GRI} = -0.319$), which suggests that certification announcements are more relevant for firms with lower adoption rates of GRI standards that are less expected to pursue such certifications. These results support the direct effects of firm visibility (i.e., *top brand*, *GRI*) on stock market premiums (Hypotheses 1 and 2 are fully supported). Models 2–6 tend to confirm the results from Model 1 and are reported for robustness in order to verify the presence of multicollinearity among the exogenous variables.

In Tables 3–7, we introduce and report results of the HLM regressions, and estimate and compare the moderation effect of each institutional variable on the five firm-based predictors (*employees*, *dividend yield*, *assets*, *GRI* and *top brand*).

--- Insert Tables 3–7 about here ---

Overall, the only significant control variable is *common law*. The market reaction is weaker in countries ruled by common law, which typically have weak stakeholder protections. This suggests that third-party certification of CSR quality is more relevant in countries with less regulation. As far as the direct effects, the stock market reacts more when firms that pay higher dividends (Model 4) and have well-established brands (Model 7) obtain CSR certifications. In other words, since dividend stocks attract relatively more investment from financial institutions, which have a relative advantage in detecting high firm quality and in ensuring firms are well managed (Allen, Bernardo, and Welch, 2002), we provide evidence of the role of CSR certification in signaling firm quality. The *top brand* variable corroborates similar conclusions.

Moreover, the interaction effect of those two variables with the moderators reveals some statistically significant parameters. In particular, the results related to *dividend yield* in Table 4 are stronger in countries with high *transparency* (*dividend yield x transparency* in Model 3, $\beta = 0.051$; $p < 0.05$) and more *economic freedom* (*dividend yield x EF* in Model 6, $\beta = 0.061$; $p < 0.05$). The result for the *freedom of press* variable (*dividend yield x FoP* in Model 4, $\beta = -0.072$; $p < 0.05$) is negative, but since countries with more freedom of press have lower figures, the conclusions are similar. From this point of view, the positive effects of *top brand* (Table 7) are found to be statistically lower in countries with higher *transparency* (*top brand x transparency* in Model 3, $\beta = -0.212$; $p < 0.05$) and lower *environmental policy* scores (*top brand x EP* in Model 5, $\beta = -0.111$; $p < 0.05$) mainly because the higher standards required for those firms tend to make CSR certification seem less noteworthy. It is interesting that for firms with top brands, the relevance of the institutional setting shifts from *freedom of press* to *environmental policy*. All models are significantly different from the null model. Overall, the models support Hypotheses 3a, 3b, 4a and 4c, but do not support Hypothesis 4b.

Discussion

In this study, we investigated investors' reactions to annual announcements of firms that had been certified as ethical by Ethisphere, an independent institution. While scholars have shown that corporate disclosure of responsible and sustainable practices is perceived positively by consumers, less is known about how investors perceive and use of this type of information. Whether or not a company's CSR communications and statements are able to enhance firm's value remains an open question. The literature offers an ambiguous picture of the value creation potential of CSR beyond positive expectations about its attractiveness. Uncertainty about the relationship between CSR and financial performance is mainly ascribable to the voluntary nature of CSR communication strategies, actions and statements. We circumnavigated this drawback of self-reporting by reexamining the issue with a focus on both firm and institutional determinants of investors' reactions, acknowledging that investors' decisions are influenced by cultural, social and institutional characteristics of companies and the contexts in which the symbolic nature of CSR information is expressed. In line with a sociological perspective on stock markets, we expected a source of uncertainty to be situated in the congruence between the communicated characteristics of a company and its institutional context.

From a financial point of view, our results empirically document stock market reactions to ethical certification announcements. The results show positive cumulative abnormal returns during the trading days around Ethisphere's annual announcements of the *World's Most Ethical Companies*®, which includes companies of all sizes from around the globe situated in different financial and institutional contexts and characterized by different levels of financial market development. The data do not support our expectation of a significant price effect due to

information leaks in the days leading up to the official announcements. Instead, we observed negative average CAR values during the days preceding the announcements.

Theoretically, this paper helps clarify ambiguities in the literature regarding how investors react to information about CSR practices. Specifically, we find support for a causal model showing how firm- and institutional-level characteristics affect investors' reactions to CSR–related information based on share prices on the stock market. To do so, we relaxed the classic economic assumption that frames stock market reactions as objective performance assessments based on rational calculations. Rather, we proposed that investors integrate available objective economic information with complementary information based on the perceived congruence between a company's institutional context and its communicated CSR practices. In our framework, these perceptions mitigate investors' general lack of detailed insights into the underlying practices signaled by the ethical certification announcements. Investors shape their perceptions of the value-creation potential of CSR by cognitively evaluating firm-level characteristics. This "central route" translates into a direct effect of the objective and measurable aspects of firm-related information on financial performance (Hypotheses 1 and 2). Furthermore, investors heuristically evaluate the congruence of firm level variables and institutional contexts to cope with information uncertainties. This "peripheral route" translates into a moderation effect of the institutional characteristics on financial performance (Hypotheses 3 and 4). Surprisingly, this uncertainty is crucial for firms with high dividend stocks and top brands, suggesting that it may be more difficult to evaluate the value of CSR certification using simple "rule of thumb" heuristics.

Our results have several strategic implications for firms. First, independent certification is an effective way to decrease the information asymmetries between insiders and outsiders

embodied in the voluntary disclosure of CSR information. Second, while CSR information disclosed by a third party typically complements other types of information for the highly visible firms that typically engage in CSR practices, it can be considered even more value enhancing in opaque contexts (i.e., civil law countries with weak institutions) where it may serve as a necessary substitute for typical corporate information. In other words, third-party CSR certification can enhance value, particularly for firms in contexts with large information gaps that are difficult to bridge.

Overall, sustainability or CSR reports or statements are gradually conforming to accepted international standards (e.g., GRI, GCI, ISO 26000). These standards serve as "mirrors" that enable managers to systematically inspect their CSR practices and strategies while seeing themselves through stakeholders' eyes. However, information asymmetries between insiders (i.e., managers) and outsiders (i.e., stakeholders) are inherent in voluntary communication. Stakeholders cope with these information asymmetries by evaluating a firm's unique combination of institutional and economic characteristics, which shape how they perceive CSR-related information. Managers need to complement CSR communication strategies with independent certification as an effective way to decrease information asymmetry between insiders and outsiders; simply adopting a common standard such as GRI reporting is no longer enough to create value. Our results show that a "one size fits all" communication strategy does not generate the value expected; since investors evaluate the fit between a company's strategy and its institutional variables, managers must rely on a "magic mirror on the wall" (i.e., an independent certification institution), to assess whether or not their firm actually is the "fairest of them all."

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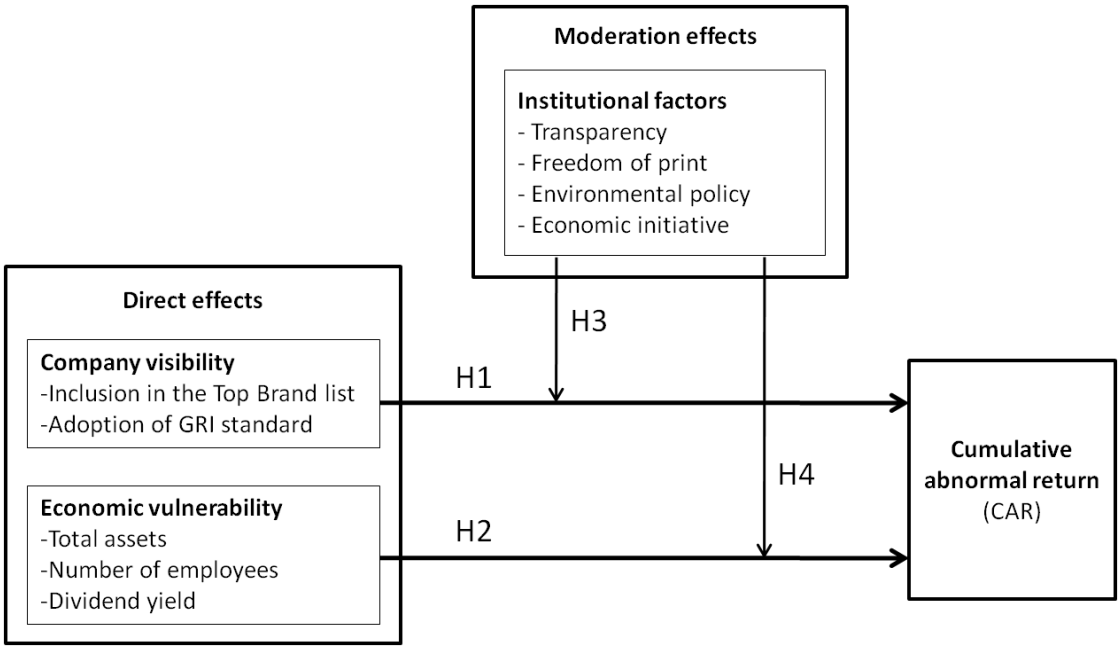

Figure 1. The theoretical model.

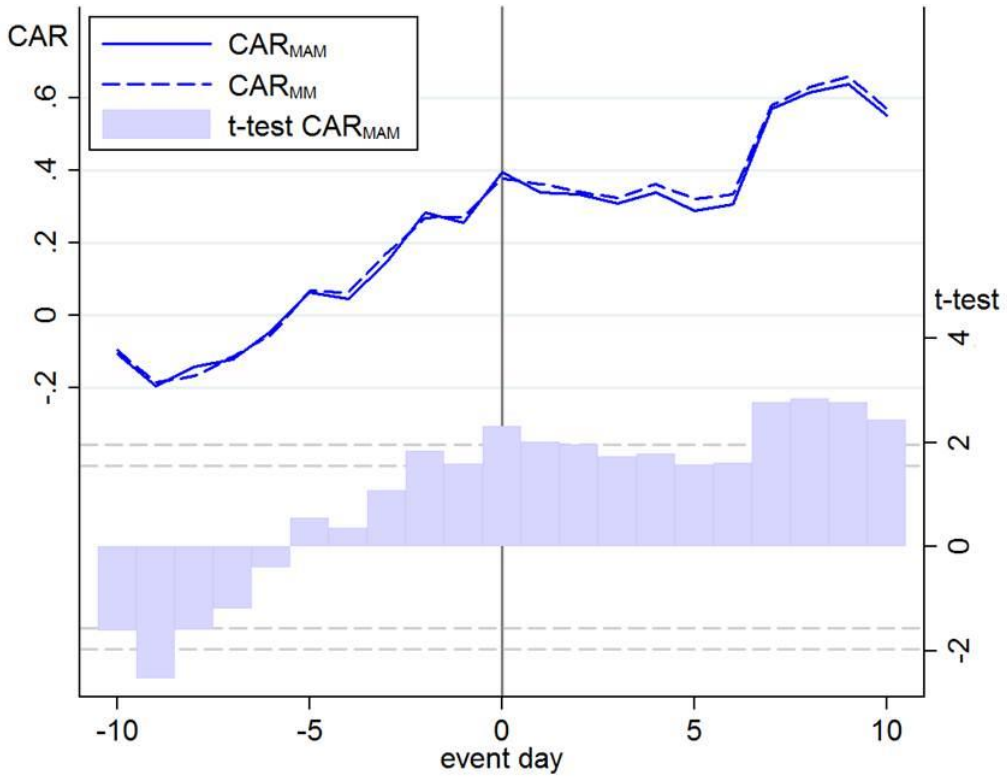

Figure 2. Event study.

Table 1. Correlation matrix (Pearson coefficients below the main diagonal and Spearman coefficients above the main diagonal)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
CAR	1	1.000	0.058	0.024	0.015	0.014	0.076*	0.035	0.005	-0.039	0.015	0.037	0.050	-0.021	0.014
			(0.114)	(0.520)	(0.692)	(0.699)	(0.038)	(0.342)	(0.903)	(0.286)	(0.685)	(0.316)	(0.173)	(0.569)	(0.706)
Employees	2	0.053	1.000	0.085*	0.383***	0.123***	0.464***	0.087*	0.030	-0.096**	-0.033	-0.091*	-0.116**	0.057	0.082*
		(0.145)		(0.020)	(0.000)	(0.001)	(0.000)	(0.017)	(0.408)	(0.008)	(0.364)	(0.013)	(0.001)	(0.116)	(0.025)
DY	3	0.129***	0.089*	1.000	0.292***	0.239***	-0.015	0.320***	-0.038	-0.316***	-0.198***	0.101**	0.109**	0.035	-0.082*
		(0.000)	(0.015)		(0.000)	(0.000)	(0.686)	(0.000)	(0.298)	(0.000)	(0.000)	(0.005)	(0.003)	(0.334)	(0.024)
Assets	4	0.040	0.393***	0.267***	1.000	0.215***	0.184***	0.068+	0.181***	-0.275***	-0.234***	0.050	0.072*	0.076*	-0.038
		(0.278)	(0.000)	(0.000)		(0.000)	(0.000)	(0.064)	(0.000)	(0.000)	(0.000)	(0.175)	(0.047)	(0.038)	(0.299)
GRI	5	0.015	0.151***	0.238***	0.196***	1.000	0.046	0.189***	0.074*	-0.221***	-0.261***	0.212***	0.096**	0.015	-0.275***
		(0.691)	(0.000)	(0.000)	(0.000)		(0.208)	(0.000)	(0.042)	(0.000)	(0.000)	(0.000)	(0.009)	(0.682)	(0.000)
Top brand	6	0.060	0.431***	-0.056	0.131***	0.046	1.000	-0.084*	-0.065+	0.144***	0.076*	-0.097**	-0.128***	-0.020	0.098**
		(0.102)	(0.000)	(0.123)	(0.000)	(0.208)		(0.021)	(0.073)	(0.000)	(0.037)	(0.008)	(0.000)	(0.581)	(0.007)
Catholic	7	0.043	0.054	0.369***	0.036	0.189***	-0.084*	1.000	-0.062+	-0.844***	-0.415***	0.130***	-0.007	0.235***	-0.125***
		(0.240)	(0.139)	(0.000)	(0.324)	(0.000)	(0.021)		(0.089)	(0.000)	(0.000)	(0.000)	(0.859)	(0.000)	(0.001)
Hindu	8	-0.013	0.010	-0.033	0.219***	0.074*	-0.065+	-0.062+	1.000	-0.202***	0.058	-0.049	0.205***	-0.202***	-0.209***
		(0.731)	(0.780)	(0.371)	(0.000)	(0.042)	(0.073)	(0.089)		(0.000)	(0.110)	(0.180)	(0.000)	(0.000)	(0.000)
Protestant	9	-0.036	-0.068+	-0.352***	-0.326***	-0.221***	0.144***	-0.844***	-0.202***	1.000	0.568***	-0.149***	-0.177***	-0.166***	0.291***
		(0.323)	(0.062)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Common law	10	-0.011	-0.034	-0.204***	-0.278***	-0.261***	0.076*	-0.415***	0.058	0.568***	1.000	-0.141***	0.062+	-0.209***	0.504***
		(0.769)	(0.359)	(0.000)	(0.000)	(0.000)	(0.037)	(0.000)	(0.110)	(0.000)		(0.000)	(0.091)	(0.000)	(0.000)
Transparency	11	-0.020	-0.112***	-0.009	-0.068*	0.185***	-0.068*	-0.011	-0.034	0.028	-0.006	1.000	0.394***	0.544***	-0.398***
		(0.576)	(0.002)	(0.809)	(0.063)	(0.000)	(0.063)	(0.762)	(0.352)	(0.444)	(0.879)		(0.000)	(0.000)	(0.000)
FoP	12	-0.020	-0.071+	0.126***	0.153***	0.083*	-0.115**	0.042	0.439***	-0.274***	0.045	0.202***	1.000	0.070+	-0.437***
		(0.582)	(0.052)	(0.001)	(0.000)	(0.022)	(0.002)	(0.247)	(0.000)	(0.000)	(0.221)	(0.000)		(0.057)	(0.000)
EP	13	-0.025	0.066+	0.024	0.032	-0.007	-0.001	0.219***	-0.323***	-0.128***	-0.217***	0.320***	-0.134***	1.000	-0.004
		(0.487)	(0.071)	(0.514)	(0.387)	(0.849)	(0.973)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.917)
EF	14	0.057	0.050	-0.093*	-0.130***	-0.232***	0.097**	-0.251***	-0.512***	0.427***	0.518***	-0.205***	-0.486***	0.174***	1.000
		(0.116)	(0.174)	(0.011)	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; DY = dividend yield, FoP = freedom of press, EP = environmental policy, EF = economic freedom

Table 2. Relationships between firm-level characteristics and CAR

	CAR						
	Baseline	(1)	(2)	(3)	(4)	(5)	(6)
Direct effects							
Employees		0.118*	0.301***				
		(0.052)	(0.084)				
Dividend yield		0.635**		0.640***			
		(0.192)		(0.183)			
Assets		-0.008***			-0.007***		
		(0.002)			(0.001)		
GRI		-0.319*				-0.006	
		(0.147)				(0.173)	
Top brand		1.075**					1.129*
		(0.385)					(0.443)
Controls							
Catholic	0.191	0.102	0.191	0.191	0.191	0.192	0.037
	(0.613)	(0.640)	(0.614)	(0.614)	(0.614)	(0.605)	(0.650)
Hindu	-0.826	-0.655	-0.826	-0.826	-0.826	-0.823	-0.804
	(0.832)	(0.828)	(0.833)	(0.833)	(0.833)	(0.800)	(0.841)
Protestant	-0.249	-0.482	-0.249	-0.249	-0.249	-0.248	-0.530
	(0.873)	(0.895)	(0.873)	(0.873)	(0.873)	(0.866)	(0.908)
Common law	0.049	-0.040	0.049	0.049	0.049	0.047	0.060
	(0.859)	(0.863)	(0.860)	(0.860)	(0.860)	(0.837)	(0.871)
Intercept	0.115	0.323^{+}	0.115	0.115	0.115	0.119	0.081
	(0.172)	(0.168)	(0.172)	(0.172)	(0.172)	(0.209)	(0.170)
R^2	0.0009	0.03	0.004	0.01936	0.005394	0.000861	0.006144
F (df)	0.1526 (4, 709)	2.452 (9, 704)	0.6015 (5, 708)	2.796 (5, 708)	0.7679 (5, 708)	0.122 (5, 708)	0.8753 (5, 708)

$^{+}$ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Table 3. Hierarchical linear modeling regression (employees)

	CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
Direct effect						
Employees	0.251 (0.195)	0.265 (0.205)	0.237 (0.201)	0.242 (0.196)	0.233 (0.196)	0.249 (0.196)
Moderators						
Transparency	-0.037 (0.053)	-0.042 (0.054)	-0.038 (0.053)	-0.038 (0.053)	-0.039 (0.053)	-0.039 (0.053)
FoP	0.054 (0.070)	0.050 (0.070)	0.054 (0.070)	0.054 (0.070)	0.051 (0.070)	0.053 (0.070)
EP	-0.048^{+} (0.025)	-0.046^{+} (0.025)	-0.048^{+} (0.025)	-0.048^{+} (0.025)	-0.047^{+} (0.025)	-0.048^{+} (0.025)
EF	0.278** (0.104)	0.285** (0.104)	0.279** (0.104)	0.280** (0.104)	0.280** (0.104)	0.283** (0.104)
Moderating effects						
Employees x transparency		0.036 (0.053)	-0.008 (0.026)			
Employees x FoP		0.047 (0.098)		0.020 (0.043)		
Employees x EP		-0.023 (0.022)			-0.016 (0.017)	
Employees x EF		-0.009 (0.068)				-0.021 (0.037)
Controls						
Catholic	1.657 (1.451)	1.654 (1.454)	1.656 (1.452)	1.651 (1.452)	1.661 (1.451)	1.660 (1.452)
Hindu	3.086 (3.098)	3.112 (3.104)	3.086 (3.100)	3.085 (3.099)	3.100 (3.098)	3.111 (3.099)
Protestant	1.075 (1.587)	1.071 (1.590)	1.071 (1.588)	1.075 (1.588)	1.059 (1.587)	1.075 (1.588)
Common law	-2.613* (1.286)	-2.662* (1.290)	-2.613* (1.287)	-2.621* (1.287)	-2.628* (1.286)	-2.635* (1.287)
Intercept	0.928 (1.242)	0.998 (1.246)	0.931 (1.243)	0.941 (1.243)	0.959 (1.242)	0.953 (1.243)
X^2	12.45***	13.925	12.547***	12.665***	13.36*	12.779***
AIC	4702.2	4708.7	4704.1	4704.0	4703.3	4703.9
BIC	4761.6	4786.4	4768.1	4768.0	4767.3	4767.9
LL	2338.1	-2337.4	-2338.1	-2338.0	-2337.6	-2337.9

$^{+}$ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001; FoP = freedom of press, EP = environmental policy, EF = economic freedom

Table 4. Hierarchical linear modeling regression (dividend yield)

	CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
Direct effect						
Dividend yield	0.619***	0.573**	0.591***	0.591***	0.630***	0.592***
	(0.176)	(0.178)	(0.175)	(0.176)	(0.176)	(0.176)
Moderators						
Transparency	-0.050	-0.042	-0.044	-0.048	-0.050	-0.047
	(0.053)	(0.053)	(0.052)	(0.052)	(0.053)	(0.053)
FoP	0.044	0.045	0.044	0.046	0.043	0.043
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
EP	-0.037	-0.037	-0.035	-0.037	-0.036	-0.037
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
EF	0.292**	0.284**	0.287**	0.292**	0.294**	0.287**
	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)	(0.102)
Moderating effects						
Dividend yield x transparency		0.054	0.051*			
		(0.040)	(0.020)			
Dividend yield x FoP		0.004		-0.072*		
		(0.065)		(0.032)		
Dividend yield x EP		-0.011			0.011	
		(0.020)			(0.017)	
Dividend yield x EF		0.016				0.061^{+}
		(0.046)				(0.034)
Controls						
Catholic	1.575	1.590	1.588	1.589	1.561	1.529
	(1.440)	(1.438)	(1.435)	(1.436)	(1.441)	(1.438)
Hindu	3.346	3.530	3.533	3.373	3.347	3.313
	(3.071)	(3.067)	(3.060)	(3.062)	(3.072)	(3.066)
Protestant	0.993	1.010	0.983	1.025	0.948	0.936
	(1.575)	(1.575)	(1.569)	(1.571)	(1.577)	(1.573)
Common law	-2.675*	-2.558*	-2.585*	-2.681*	-2.681*	-2.614*
	(1.273)	(1.274)	(1.268)	(1.269)	(1.273)	(1.271)
Intercept	1.051	0.922	0.979	1.035	1.108	1.057
	(1.231)	(1.235)	(1.227)	(1.227)	(1.235)	(1.229)
X^2	23.284***	30.304***	29.826***	28.325***	23.705***	26.538***
AIC	4691.4	4692.3	4686.8	4688.3	4692.9	4690.1
BIC	4750.8	4770.0	4750.8	4752.3	4756.9	4754.1
LL	-2332.7	-2329.2	-2329.4	-2330.2	-2332.5	-2331.1

$^{+}$ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001; FoP = freedom of press, EP = environmental policy, EF = economic freedom

Table 5. Hierarchical linear modeling regression (assets)

	CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
Direct effect						
Assets	-0.007^{+}	-0.008	-0.005	-0.007^{+}	-0.007^{+}	-0.010*
	(0.004)	(0.006)	(0.005)	(0.004)	(0.004)	(0.005)
Moderators						
Transparency	-0.044	-0.053	-0.046	-0.043	-0.044	-0.047
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
FoP	0.049	0.056	0.050	0.048	0.049	0.051
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)
EP	-0.047^{+}	-0.052*	-0.048^{+}	-0.047^{+}	-0.047^{+}	-0.048^{+}
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
EF	0.289**	0.301**	0.289**	0.286**	0.288**	0.292**
	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)	(0.103)
Moderating effects						
Assets x transparency		-0.003	-0.001			
		(0.002)	(0.001)			
Assets x FoP		-0.006		0.002		
		(0.005)		(0.002)		
Assets x EP		0.001			0.000	
		(0.001)			(0.001)	
Assets x EF		-0.006^{+}				-0.003
		(0.003)				(0.002)
Controls						
Catholic	1.646	1.689	1.646	1.641	1.652	1.630
	(1.449)	(1.451)	(1.450)	(1.450)	(1.451)	(1.449)
Hindu	3.154	2.971	3.127	3.146	3.141	3.145
	(3.092)	(3.095)	(3.092)	(3.093)	(3.095)	(3.090)
Protestant	1.044	1.313	1.099	1.018	1.033	1.131
	(1.586)	(1.596)	(1.587)	(1.587)	(1.588)	(1.586)
Common law	-2.691*	-3.020*	-2.744*	-2.645*	-2.673*	-2.810*
	(1.281)	(1.304)	(1.283)	(1.284)	(1.287)	(1.284)
Intercept	1.015	1.027	1.010	1.001	1.008	1.035
	(1.239)	(1.240)	(1.239)	(1.240)	(1.241)	(1.239)
X^2	13.816***	17.624***	14.582***	14.274***	13.842***	15.558***
AIC	4700.8	4705.0	4702.1	4702.4	4702.8	4701.1
BIC	4760.3	4782.7	4766.1	4766.4	4766.8	4765.1
LL	-2337.4	-2335.5	-2337.0	-2337.2	-2337.4	-2336.5

$^{+}$ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001; FoP = freedom of press, EP = environmental policy, EF = economic freedom

Table 6. Hierarchical linear modeling regression (GRI)

	CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
Direct effect						
GRI	0.094	0.108	0.141	0.008	0.104	-0.024
	(0.532)	(0.555)	(0.534)	(0.532)	(0.532)	(0.543)
Moderators						
Transparency	-0.046	-0.010	-0.134	-0.065	-0.052	-0.059
	(0.054)	(0.113)	(0.100)	(0.054)	(0.054)	(0.055)
FoP	0.051	0.645*	0.049	0.399*	0.048	0.046
	(0.070)	(0.254)	(0.070)	(0.167)	(0.070)	(0.070)
EP	-0.047^{+}	-0.107*	-0.045^{+}	-0.050*	-0.083*	-0.045^{+}
	(0.025)	(0.042)	(0.025)	(0.025)	(0.039)	(0.025)
EF	0.296**	0.548**	0.286**	0.364***	0.301***	0.213^{+}
	(0.104)	(0.184)	(0.104)	(0.108)	(0.104)	(0.129)
Moderating effects						
GRI x transparency		-0.068	0.104			
		(0.126)	(0.098)			
GRI x FoP		-0.637*		-0.376*		
		(0.259)		(0.164)		
GRI x EP		0.081			0.059	
		(0.051)			(0.048)	
GRI x EF		-0.199				0.133
		(0.187)				(0.123)
Controls						
Catholic	1.663	1.748	1.583	1.895	1.556	1.807
	(1.458)	(1.471)	(1.460)	(1.457)	(1.460)	(1.464)
Hindu	3.239	3.983	3.082	3.948	3.468	3.823
	(3.105)	(3.193)	(3.108)	(3.111)	(3.109)	(3.151)
Protestant	1.073	0.976	0.839	1.179	0.918	1.219
	(1.593)	(1.630)	(1.608)	(1.588)	(1.597)	(1.598)
Common law	-2.726*	-2.931*	-2.451^{+}	-2.984*	-2.66*	-2.942*
	(1.287)	(1.369)	(1.313)	(1.288)	(1.287)	(1.302)
Intercept	0.958	1.197	0.877	1.165	1.037	1.140
	(1.275)	(1.300)	(1.277)	(1.274)	(1.276)	(1.286)
X^2	10.81***	19.486***	11.944***	16.145***	12.389***	12.009***
AIC	4703.8	4703.2	4704.7	4700.5	4704.3	4704.6
BIC	4763.3	4780.9	4768.7	4764.5	4768.3	4768.6
LL	-2338.9	-2334.6	-2338.3	-2336.2	-2338.1	-2338.3

$^{+}$ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001; FoP = freedom of press, EP = environmental policy, EF = economic freedom

Table 7. Hierarchical linear modeling regression (top brand)

	CAR					
	(1)	(2)	(3)	(4)	(5)	(6)
Direct effect						
Top brand	1.073^{+}	1.389*	1.169	1.431*	1.081^{+}	1.026^{+}
	(0.581)	(0.629)	(0.582)	(0.620)	(0.580)	(0.593)
Moderators						
Transparency	-0.039	-0.029	-0.015	-0.043	-0.040	-0.033
	(0.053)	(0.057)	(0.054)	(0.053)	(0.053)	(0.055)
FoP	0.059	0.044	0.065	0.045	0.057	0.060
	(0.070)	(0.071)	(0.070)	(0.070)	(0.070)	(0.070)
EP	-0.047^{+}	-0.025	-0.047^{+}	-0.051*	-0.020	-0.047^{+}
	(0.025)	(0.029)	(0.025)	(0.025)	(0.028)	(0.025)
EF	0.288**	0.283*	0.288**	0.322**	0.280**	0.271*
	(0.103)	(0.111)	(0.103)	(0.105)	(0.103)	(0.111)
Moderating effects						
Top brand x transparency		-0.019	-0.212^{+}			
		(0.165)	0.117)			
Top brand x FoP		0.364		0.327		
		(0.286)		(0.200)		
Top brand x EP		-0.106^{+}			-0.111*	
		(0.058)			(0.055)	
Top brand x EF		0.127				0.060
		(0.166)				(0.149)
Controls						
Catholic	1.572	1.806	1.916	1.760	1.516	1.594
	(1.450)	(1.462)	(1.460)	(1.453)	(1.447)	(1.452)
Hindu	3.265	4.750	4.510	4.216	3.901	3.127
	(3.090)	(3.185)	(3.161)	(3.141)	(3.099)	(3.111)
Protestant	0.884	1.095	1.247	1.003	0.897	0.899
	(1.589)	(1.600)	(1.599)	(1.589)	(1.585)	(1.590)
Common law	-2.696*	-3.051*	-3.042*	-3.103*	-2.699*	-2.634*
	(1.281)	(1.306)	(1.293)	(1.303)	(1.278)	(1.291)
Intercept	0.901	0.956	0.819	1.091	0.892	0.835
	(1.240)	(1.255)	(1.239)	(1.244)	(1.237)	(1.252)
X^2	14.232***	21.905***	17.537***	16.949***	18.408***	14.396***
AIC	4700.4	4700.7	4699.1	4699.7	4698.2	4702.3
BIC	4759.8	4778.4	4763.1	4763.7	4762.2	4766.2
LL	-2337.2	-2333.4	-2335.6	-2335.8	-2335.1	-2337.1

$^{+}$ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001; FoP = freedom of press, EP = environmental policy, EF = economic freedom

Appendix A: Variable definitions and statistics

Variable	Mean	SD	Definition
Firm level			
CAR	0.55	6.66	Cumulative abnormal returns during the event window,-10 to +10 days from the announcement (day 0), as a percentage
Employees	10.45	1.34	Logarithm of the firm's total number of employees
Dividend yield	2.44	2.05	Dividend per shares paid to shareholders divided by the firm's market price. It is a proxy for firm maturity and risk adverse shareholders. Source: Datastream International (data: DY)
Assets	17.09	1.92	Logarithm of the total assets from the previous year. It is a proxy for firm size and visibility. Source: Datastream International (data: WC07011)
GRI	0.60	0.49	Dummy variable which takes a value of 1 if a standard report exists; 0, otherwise. Source: https://www.globalreporting.org
Top brand	0.22	0.41	Best Global Brands list. Source: https://www.globalreporting.org
Institutional level			
Catholic	0.20	0.40	Dummy which takes a value of 1 if the firm is in a Catholic nation; 0, otherwise. Source: http://www.nationmaster.com
Hindu	0.02	0.13	Dummy which takes a value of 1 if the firm is in a Hindu nation; 0, otherwise. Source: http://www.nationmaster.com
Protestant	0.74	0.44	Dummy which takes a value of 1 if the firm is in a Protestant nation; 0, otherwise. Source: http://www.nationmaster.com

Common law	0.82	0.39	Dummy which takes a value of 1 if the firm is in a common law nation; 0, otherwise. Source: http://www.nationmaster.com
Transparency	37.72	33.24	Corruption Perceptions Index from the Transparency Index, with scores ranging from 0 (high corruption) to 100 (low corruption). Source: http://www.transparency.org
Freedom of press	19.59	5.95	Freedom of Press Index with scores ranging from 0 (high freedom) to 100 (low freedom). Source: https://freedomhouse.org/report-types/freedom-press
Environmental policy	71.66	11.24	Environmental Policy Index. Source: http://epi.yale.edu/
Economic freedom	75.95	5.20	Economic Freedom Index, with scores ranging from 0 (low freedom) to 100 (high freedom). Source: http://www.heritage.org/index/ranking