THE ACCOUNTING REVIEW
Vol. 87, No. 3
2012
pp. 723–759

American Accounting Association
DOI: 10.2308/accr-10218

Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure

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ABSTRACT: We examine the relationship between disclosure of nonfinancial information and analyst forecast accuracy using firm-level data from 31 countries. We use the issuance of stand-alone corporate social responsibility (CSR) reports to proxy for disclosure of nonfinancial information. We find that the issuance of stand-alone CSR reports is associated with lower analyst forecast error. This relationship is stronger in countries that are more stakeholder-oriented—i.e., in countries where CSR performance is more likely to affect firm financial performance. The relationship is also stronger for firms and countries with more opaque financial disclosure, suggesting that issuance of stand-alone CSR reports plays a role complementary to financial disclosure. These results hold after we control for various factors related to firm financial transparency and other potentially confounding institutional factors. Collectively, our findings have important implications for academics and practitioners in understanding the function of CSR disclosure in financial markets.

Keywords: *corporate social responsibility; analyst forecasts; nonfinancial disclosure*.

Data Availability: *The data are publicly available from the sources identified in the paper*.

We appreciate the valuable comments from Ying Cao, Daniel Cohen, Jim Hunton (editor), Steven Kachelmeier (senior editor), Zengquan Li, Jingjing Zhang, T. J. Wong, and especially two anonymous referees, and the seminar participants at The Chinese University of Hong Kong, Chongqing University, and Singapore Management University. We thank I/B/E/S for providing the data of analyst forecasts. Xiangting Kong provided excellent research assistance for this research.

Editor's note: Accepted by James Hunton.

Submitted: June 2010
Accepted: August 2011
Published Online: January 2012

I. INTRODUCTION

The past two decades have witnessed a dramatic increase in firms issuing *stand-alone* reports on corporate social responsibility (CSR) activities around the world.[1] For example, for the 31 countries in our sample, fewer than 100 publicly listed commercial companies issued *stand-alone* CSR reports in the early 1990s, but that number increased to more than 1,000 by 2007. However, in contrast to the increase of CSR reporting in practice, there is little academic evidence regarding the value of the reporting to stakeholders in general and shareholders in particular. The objective of this study is to examine whether the disclosure of CSR-related information helps to improve the accuracy of the earnings forecasts of sell-side financial analysts. To the extent that sell-side analysts represent investors or significantly influence investors' judgments and beliefs (Nichols 1989; Schipper 1991; Bercel 1994; Walther 1997), our results also provide insights into whether CSR-related nonfinancial disclosures provide incrementally useful information to investors.

Lang and Lundholm (1996) find that analysts' ratings of firm disclosures, which potentially capture both financial and nonfinancial transparency of firms, are positively associated with analyst forecast accuracy. In an international setting, Hope (2003) documents that financial disclosure quality is positively related to analyst forecast accuracy. We extend these studies by focusing specifically on *nonfinancial* information and predicting that CSR disclosure, as proxied by the issuance of stand-alone CSR reports, is positively associated with analyst forecast accuracy.

To shed some light on the settings for which CSR disclosure helps analysts to forecast earnings, we examine how the CSR disclosure-forecast accuracy relationship covaries with institutional factors and financial transparency. Specifically, a country's business culture, and in particular whether a country is more shareholder- or stakeholder-oriented, can influence the importance of CSR issues in business operations at the country level (Williams and Aguilera 2008). In a stakeholder-oriented business culture, a broad spectrum of stakeholders are seen by society as possessing a legitimate interest in corporate activities. In contrast, in a shareholder-oriented business culture, companies' primary goal is to maximize shareholder value, while other stakeholder groups have less legitimacy in influencing corporate activities and performance (Bradley et al. 1999). Accordingly, in countries that are more stakeholder-oriented, stakeholder groups have greater influence on firms' operations and financial performance than in other countries (Chen 2009). Thus, CSR disclosure, which contains information on how well firms handle issues related to stakeholders, is also likely to be more useful for analysts to assess firms' financial performance in stakeholder-oriented countries than in shareholder-oriented countries. We therefore predict that the positive association between CSR disclosure and analyst forecast accuracy is more pronounced in countries that are more stakeholder-oriented. Note that only through an international study can we gain insights into how stakeholder- or shareholder-orientation of a country affects the usefulness of CSR-related information to analysts and investors.

In addition, we hypothesize that the negative association between forecast accuracy and financial opaqueness (Hope 2003) is tempered by CSR disclosure. Consistent with prior research (Bhattacharya et al. 2003; Leuz et al. 2003), we measure firm-level financial opaqueness based on properties of accruals. At the country level, following Hope (2003), we measure financial

[1] The World Business Council for Sustainable Development defines CSR as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large." Typical CSR issues include preservation of environment, improvement in labor welfare, protection of human rights, contribution to the society, and pursuit of product safety. In practice and in academic research, "CSR" is often used interchangeably with "sustainability."

opaqueness using the (inverse of) Center for International Financial Analysis and Research (CIFAR) scores.

We find evidence supporting all three hypotheses. The results hold for the current-year forecast accuracy and generally hold for the one-year-ahead and two-year-ahead forecast accuracy as well. These findings are robust to controlling for various potentially confounding factors, especially those related to financial transparency. In additional tests, we find that stock price incorporates more information on future earnings among firms with greater CSR disclosure.

Our findings contribute to the analyst forecast literature and the CSR reporting literature. Prior studies show that financial disclosure is related to analyst forecast accuracy (Brown et al. 1987; Lang and Lundholm 1996; Abarbanell and Bushee 1997; Hope 2003; Behn et al. 2008). However, there is little research into whether analysts incorporate nonfinancial information into their forecasts. The only such work to our knowledge is that of Nichols and Wieland (2009), who examine whether analysts in the U.S. respond to press releases containing product-related and business expansion information. Complementing Nichols and Wieland's (2009) research on specific nonfinancial information items, our study examines whether a comprehensive set of nonfinancial information, as represented by the issuance of stand-alone CSR reports, is related to analyst forecast accuracy. In addition, we expand their research to an international setting.

We also extend research on CSR reporting. Two recent studies (Plumlee et al. 2008; Dhaliwal et al. 2011) demonstrate that higher levels of voluntary environmental disclosure and general CSR disclosure, respectively, are associated with a higher firm value and lower cost of equity capital in the U.S. We show in this study that investors from around the world, as represented by financial analysts, appear to use CSR disclosure in forecasting future financial performance of firms. By implication, it is likely that CSR disclosure has an impact on capital allocation worldwide.

In their study of the relationship between CSR disclosure and cost of equity capital, Dhaliwal et al. (2011) provide preliminary evidence that, in the U.S., the issuance of CSR reports is associated with a lower level of analyst forecast error. We expand this finding to an international setting, and find that the improvement in forecast accuracy is stronger among countries with more stakeholder orientation. This suggests that the relevance of the same type of disclosure for investors depends on the business culture and institutional environment. As such, having a uniform disclosure standard is not necessarily suitable across different countries (Sunder 2009). In this regard, our findings provide insights for the recent appeal for integrating the financial and CSR reporting systems.[2]

II. RELATED RESEARCH AND HYPOTHESIS DEVELOPMENT

Nonfinancial Information and Analyst Forecasts

CSR information will be a useful input in analysts' forecasting process to the extent that CSR activities affect firm value. CSR activities can affect financial performance through various channels, including sales, costs, and operational efficiency, financing, and litigation risk. In a market in which consumers have a high level of awareness regarding CSR issues, superior CSR performance can improve the brand value and reputation of firms, which in turn enhances the evaluation of firm products by consumers (Brown and Dacin 1997). A better CSR reputation can also translate into increased sales (Lev et al. 2010). Executives of global companies that are leaders in sustainability performance who were surveyed by the *MIT Sloan Management Review* (2009)

[2] The movement for integrated reporting is exemplified by the work of the International Integrated Reporting Committee (http://www.integratedreporting.org) and various other entities including the SustainAbility (http://www.sustainability.com/), CSR Europe (http://www.csreurope.org), and United Nations Global Impact (http://www.unglobalcompact.org). In general, CSR reporting in these frameworks covers firms' environmental, social, and governance performance.

note that CSR activities serve as a driving factor in reducing costs and achieving operational efficiency. In addition, firms with a better reputation and those that pay special attention to improving the welfare of their employees via CSR programs can attract better talent and motivate employees to improve productivity (Waddock and Graves 1997; Roberts and Dowling 2002; Edmans 2011), while greater employee satisfaction is likely to translate into better future financial performance (Banker and Mashruwala 2007). In addition, for firms operating in industries with stringent regulations, an improved reputation regarding various CSR issues can induce more positive media coverage and more favorable treatment by regulators and policy makers (Brown et al. 2006).

Recent research shows that firms with good CSR performance gain benefits in the capital market. Specifically, Dhaliwal et al. (2011) find that firms publishing CSR reports subsequently experience a lower cost of equity capital if they also demonstrate better CSR performance. Additionally, Goss and Roberts (2009) show that banks are more willing to consider soft financing for firms with a better CSR record. However, if firms flounder on CSR issues, then their financial performance and reputation are likely to be adversely impacted. For instance, when Greenpeace called for a boycott of Shell in June 1995 because of the company's decision to dump an oil platform in the Atlantic, Shell's sales dropped by 70 percent in some countries (Werther and Chandler 2006).[3] Summarizing the various benefits related to CSR activities, Starks (2009) suggests that such activities can influence firm value through their effect on firm risk, including regulatory, supply chain, litigation, and product and technology risk.

Consistent with the finding of a relationship between potential economic benefits and superior CSR performance, a number of studies document a positive association between CSR performance and improvement in financial performance. Using an index that measures the overall CSR performance of firms, Waddock and Graves (1997) find that social performance is positively associated with future financial performance. Orlitzky et al. (2003) perform a meta-analysis of 52 quantitative studies and confirm a positive relationship between CSR performance and financial performance, while Margolis and Walsh (2003) and Roman et al. (1999) summarize 127 and 52 studies, respectively, conducted since the 1970s and find a generally positive association between these two performance measures.

Overall, both theoretical and empirical evidence supports a significant association between CSR performance and financial performance. This association, in turn, suggests that investors can infer useful information from nonfinancial disclosures such as those concerning CSR activities. Anecdotal evidence suggests that analysts do use CSR-related information. In 2003, Deloitte, CSR Europe, and EuroNext surveyed about 400 mainstream fund managers and financial analysts in nine European countries. Approximately 80 percent of the respondents indicated that CSR-related activities such as social and environmental management have a positive impact on a company's market value in the long term, and about 50 percent of them indicated that they use the CSR information provided by management (Deloitte, CSR Europe, and EuroNext 2003).

We directly test whether analysts use the information contained in CSR disclosures to improve their forecast accuracy. We state this prediction formally as our first hypothesis:

[3] Another example is the Nike sweatshop scandal in the 1990s. It took Nike nearly a decade of efforts and a great amount of resources (e.g., significant increase in advertising budgeting) to regain its reputation, which was tarnished by negative media coverage, public protests, and a high-profile class action lawsuit filed by labor activist Marc Kasky in 1998 (Scherer and Palazzo 2008, 514–524). On April 13, 2005, Nike published a lengthy (almost 100-page) corporate responsibility report. Mark Parker and Charlie Denson, co-presidents of Nike, stated in a letter that accompanied the report, "We believe that a strong corporate responsibility effort will be good for business" and "We understand that a well-managed company must reflect the society in which it operates."

H1: *Ceteris paribus*, CSR disclosure is positively associated with the accuracy of analyst earnings forecasts.

To test this prediction, we use the publication of *stand-alone* CSR reports as a proxy for the amount and availability of CSR-related nonfinancial information to investors. A fraction of the CSR-related nonfinancial information included in CSR reports might also be available in annual reports or the public media.[4] However, as the compilation and publication of stand-alone CSR reports signifies a special effort made by firms to publicize such information, the presence of these reports is likely to represent a greater amount and better availability of this information to analysts.

If we find evidence consistent with our prediction that CSR disclosure helps analysts improve their earnings forecast accuracy, then the next question is in what settings is such CSR information most helpful. To provide some insight into this issue, we explore the effect of two factors on the CSR disclosure-forecast accuracy relationship: the degree of a country's stakeholder-orientation and the opacity of financial information.

Stakeholder Orientation and the Relationship between Forecast Accuracy and CSR Disclosure

Williams and Aguilera (2008) note that the relationship between social performance and firm value is likely to be contingent on cultural and social norms. According to resource dependence theory (Pfeffer and Salancik 1978), a firm depends on the resources in its environment for its survival and, thus, will be more concerned about the groups that can significantly influence the supply of the resources critical to its operations. Hence, in countries with a higher level of stakeholder orientation,[5] stakeholder groups such as employees, consumers, the government, and communities are likely to have a greater influence on firms' operational decisions. For example, consistent with the common notion that the U.S. is more shareholder-oriented than European countries, Maignan (2001) documents that U.S. consumers highly value corporate economic responsibilities, whereas French and German consumers are relatively more concerned about firms conforming to legal and ethical standards. Chen (2009) finds that the relationship between customer satisfaction and future revenue depends on the power of the customer, or alternatively, the extent to which the customer can influence the organization's operational behavior. Similarly, Schuler and Cording (2006) suggest that consumers' moral values affect their purchase intentions. Countries with different levels of stakeholder orientation likely feature consumers with different moral values regarding social causes, which will in turn affect firm sales and financial performance to different degrees.

To summarize, in countries that are more stakeholder-oriented, firms' CSR performance is likely to be more informative about their future financial performance, including earnings.

[4] Nonetheless, the overlap is likely not significant. In untabulated analyses, we compare CSR-related content in CSR and annual reports (or 10-Ks in the absence of annual reports) of 50 U.S. firms. We find that, on average, stand-alone CSR reports are significantly longer (28.3 pages versus 1.5 pages) and cover significantly more CSR issues (6.4 issues versus 1.5 issues) compared to annual reports or 10-Ks. The inference of the abovementioned comparison is also supported by the results of a comprehensive survey conducted by KPMG (2008), which finds that among the largest 100 companies from each of 18 countries that are also in our sample, fewer than 10 percent of the companies integrated CSR reports into their annual reports in 2008. The highest percentage of such firms is 22 percent, in Brazil.

[5] Our empirical proxies for stakeholder orientation correspond to several attributes of stakeholders, including legitimacy (a generalized perception that the actions of an entity are desirable or appropriate within some socially constructed system of norms), power (a relationship among social actors in which one actor, A, can get another social actor, B, to do something that B would not have otherwise done), and salience (the degree to which managers give priority to stakeholder claims), that are used in stakeholder theory to describe the supremacy of stakeholders (Mitchell et al. 1997).

Correspondingly, in these countries, CSR-related disclosures, which contain information for the assessment of firms' environmental, social, and governance performance related to stakeholders' interests, will be more useful to analysts in making forecasts. Therefore, we predict that the positive association between CSR disclosure and analyst forecast accuracy is greater in countries that are more stakeholder-oriented. We hypothesize this prediction as follows:

H2: *Ceteris paribus*, the positive relationship between CSR disclosure and analyst forecast accuracy is stronger among countries with a higher level of stakeholder orientation.

Financial Transparency and the Relationship between Forecast Accuracy and CSR Disclosure

We examine whether CSR (nonfinancial) disclosure plays a complementary role in financial transparency. Prior studies suggest that the availability and amount of financial disclosures are positively associated with analyst forecast accuracy (Brown et al. 1987; Lang and Lundholm 1996; Abarbanell and Bushee 1997; Behn et al. 2008). Using a sample from 22 countries, Hope (2003) finds that firm-level annual report disclosures are positively associated with forecast accuracy. While we argue above that CSR-related nonfinancial information can improve forecast accuracy incrementally relative to other information, it is interesting to examine how this type of nonfinancial information interacts with financial information in the forecasting process. We posit that CSR-related information is, to a large extent, distinct from financial information because CSR disclosure is mainly directed toward stakeholders (Roberts 1992). Because both financial and CSR-related nonfinancial disclosure provide information about firm value, for firms with a higher level of financial opacity, analysts can gain more useful information from nonfinancial disclosures in assessing the future financial performance of these firms. We formally state this prediction in the following hypothesis:

H3: *Ceteris paribus*, the positive relationship between CSR disclosure and analyst forecast accuracy is stronger among firms with a higher level of financial opacity.

III. SAMPLE, VARIABLE DEFINITIONS, AND METHODOLOGY

Sample Selection

Following Simnett et al. (2009), we gather a sample of stand-alone CSR reports from various sources. The major source is the Corporate Register (http://www.corporateregister.com), which is a leading U.K.-based repository of CSR reports. We supplement the data from Corporate Register with information from the Corporate Responsibility Newswire (CSRwire, http://www.csrwire.com/), CSR-NEWS (http://csr-news.net), and the firms' own websites. In total, we identify 7,779 stand-alone CSR reports issued by public firms from 49 countries during the period 1994–2007.[6,7] Further requiring that each country have information to measure the degree of stakeholder orientation and other country-level control variables results in our final sample of 31 countries from all six inhabitable continents.

We obtain financial and stock return data from Compustat Global and Compustat North America and the Center for Research in Security Prices (CRSP) and analyst forecast data from the

[6] There are very few stand-alone CSR reports in the period 1990–1993 from our data sources: two reports in 1990, one in 1991, five in 1992, and 16 in 1993.

[7] If a firm issues multiple CSR reports in a year, then we combine them and treat them as one report for that year. In general, each of these multiple reports deals with a different CSR issue.

Institutional Brokers' Estimate System (I/B/E/S). After excluding 671 reports issued by firm that lack financial and stock price information necessary for our tests, our final sample consists of 7,108 stand-alone CSR reports published by 1,297 unique commercial companies.

Table 1, Panel A presents the yearly distribution of the final sample for the 1994–2007 period, which demonstrates a nearly monotonically increasing trend in CSR reporting. The number of reports increases from fewer than 100 in the middle of the 1990s to more than 1,000 in 2007. Panel B reports the industry distribution of the sample. The utilities and chemicals industries have the highest reporting rates (column (4)). In all of our empirical tests, we control for both year and industry fixed effects.

Our treatment group consists of firm-years with firms that issued at least one stand-alone CSR report in that particular year; and our control group consists of firm-years with firms that did not issue any stand-alone CSR report in that particular year.

Main Variables

Our main variables are analyst forecast accuracy, country-level stakeholder orientation, and financial opaqueness. We describe below how each of these variables is measured.

Forecast Accuracy

We use analyst forecast error as an inverse measure of forecast accuracy. Forecast error (*FERROR*) is defined as the average of the absolute errors of all forecasts made in the year for target earnings, scaled by the stock price at the beginning of the year:[8]

$$FERROR(Y)_{i,t} = \frac{1}{N}\sum_{j=1}^{N}\left|FC^{Y}_{i,t,j} - EPS^{Y}_{i,t}\right|/P_{i,t}, \tag{1}$$

where subscripts i, t, and j denote firm i, year t, and forecast j, respectively. Indicator Y takes three values, 0, 1, or 2, to denote whether the target earnings and the forecast are for the current year, one year ahead, or two years ahead, respectively. We distinguish among forecasts made for different years because De Bondt and Thaler (1990) find that analyst forecast error gets larger as the forecast horizon increases. *FC* is the analyst earnings forecast and *EPS* is the actual earnings per share, both obtained from the I/B/E/S database to ensure consistency.[9] We limit the forecast horizon to a maximum of two years because analysts typically do not make forecasts for periods beyond the second fiscal year, and the sample size shrinks dramatically for forecasts made three years ahead.

Stakeholder Orientation

Williams and Aguilera (2008) and Allen et al. (2009) argue that a society's expectations about corporate social performance are shaped by institutional, legal, and cultural factors. Accordingly, our empirical proxies for stakeholder orientation are related to the legal and social norms of different countries. An important dimension of CSR activities is related to the welfare of employees and minorities. As such, our first stakeholder-orientation measure, *STAKELAW*, captures a country's legal environment in protecting labor rights and benefits. Specifically, we use four indices that measure the stringency of employment, social security, collective bargaining, and human rights laws, with the first three obtained from Botero et al. (2004) and the fourth from La Porta et al.

[8] We obtain similar results when we use the absolute value of actual earnings as the deflator.

[9] We also use the last forecast each year by each analyst to mitigate the issue of stale forecasts, and find similar results.

TABLE 1

Sample Distribution

Panel A: Final Sample—By Year

Year	No. of Firms (1)	No. of CSR Reports (2)	% of CSR Reports (3) = (2)/(1)
1994	4,546	34	0.75
1995	5,479	65	1.19
1996	6,892	85	1.23
1997	8,449	148	1.75
1998	8,615	191	2.22
1999	8,666	255	2.94
2000	8,802	377	4.28
2001	8,599	530	6.16
2002	7,629	617	8.09
2003	8,156	744	9.12
2004	8,713	978	11.22
2005	9,003	936	10.40
2006	9,706	1,028	10.59
2007	10,090	1,120	11.10
Total	113,345	7,108	

Panel B: Final Sample—By Industry

Industries		No. of Firm-Year Obs. (1)	No. of CSR Reporters (2)	No. of CSR Reports (3)	% of CSR Reports (4) = (3)/(1)
1	Mining/Construction	5,410	105	516	9.54
2	Food	4,559	69	391	8.58
3	Textiles/Print/Publish	6,999	85	400	5.72
4	Chemicals	4,001	101	633	15.82
5	Pharmaceuticals	4,624	46	335	7.24
6	Extractive	3,774	54	332	8.80
7	Manf: Rubber/glass/etc.	3,301	44	209	6.33
8	Manf: Metal	4,482	55	310	6.92
9	Manf: Machinery	5,039	53	293	5.81
10	Manf: Electrical Eqpt.	4,755	48	325	6.83
11	Manf: Transport Eqpt.	3,243	58	417	12.86
12	Manf: Instruments	4,806	39	208	4.33
13	Manf: Misc.	1,016	8	22	2.17
14	Computers	13,280	85	495	3.73
15	Transportation	7,529	114	646	8.58
16	Utilities	3,406	113	678	19.91
17	Retail: Wholesale	5,047	26	105	2.08
18	Retail: Misc	6,427	55	208	3.24
19	Retail: Restaurant	1,270	7	33	2.60

(continued on next page)

TABLE 1 (continued)

Industries		No. of Firm-Year Obs. (1)	No. of CSR Reporters (2)	No. of CSR Reports (3)	% of CSR Reports (4) = (3)/(1)
20	Financial	8,470	57	255	3.01
21	Insurance/Real Estate	1,636	3	5	0.31
22	Services	9,147	51	150	1.64
23	Others	1,124	21	142	12.63
	Total	113,345	1,297	7,108	

The sample period is from 1994 to 2007 and covers a total of 31 countries. Our treatment group consists of CSR-reporting firm-years. The control group comprises firm-years without the issuance of a stand-alone CSR report, which includes all firm-years of the non-reporting firms, and the non-reporting years of the reporting firms. Reporting firms are those that released at least one stand-alone CSR report throughout the sample period. All other firms are classified as non-reporting firms.

(2004). Table 2 provides variable definitions and Appendix A describes the indices. *STAKELAW* is the mean country-level rank score of the four indices, with a higher value indicating greater stakeholder orientation. Although labor protection is only one dimension of CSR, laws and rules related to labor protection are likely to capture the country's general environment in protecting the interests of stakeholders. This point is supported by the relatively high correlation between labor legislation and the three variables that are discussed next.

A country's laws and regulations on CSR disclosure reflect social expectations regarding CSR issues (Kagan et al. 2003). Some countries in our sample have laws that require commercial firms and/or pension funds to report on their social or environmental policies and activities (see Appendix A for the distribution of such regulations among the 31 countries). These laws likely correspond to high expectations among stakeholders regarding corporate social performance. Therefore, our second stakeholder orientation measure, *CSRLAW*, captures the existence of CSR-related disclosure laws. *CSRLAW* takes a value of 1 if the country requires mandatory CSR-related disclosure for either commercial firms or pension funds, 2 for both, and 0 otherwise, with a higher value indicating greater stakeholder orientation.

Our third measure for stakeholder orientation, *PUBAWARE*, captures the level of public awareness of CSR issues in individual countries. It is measured as the mean country-level rank score of the number of nongovernmental organizations (NGOs) per million population, and the number of CSR reports published throughout the 1994–2007 period by both commercial and noncommercial entities per million population.[10] The public's awareness of social issues should be higher in countries with more NGOs because NGOs help promote such awareness (Spar and LaMure 2003). Similarly, the popularity of CSR reports could be the result of a high level of public social awareness. As such, we posit that *PUBAWARE* is positively associated with stakeholder orientation.

Our fourth proxy for stakeholder orientation, *PUBAWARE1*, is based on surveys of the views of corporate executive officers on CSR activities. Even though surveys can lack objectivity, they directly capture the attitudes of managers, investment communities, and the general public toward social issues. We use four survey-based indices that measure each country's relative ranking regarding sustainable development, ethical practices, the social responsibility of business leaders,

[10] We obtain NGO data from EarthTrends.com and data on the number of CSR reports by commercial and noncommercial organizations from the same sources as for the stand-alone CSR reports in our sample.

TABLE 2

Variable Definitions

Variables	Description
Dependent Variable	
FERROR(*Y*); ($Y = 0$, 1, or 2)	*FERROR*(*0*), *FERROR*(*1*), and *FERROR*(*2*) represent the firm's absolute value of average analyst forecast errors for forecasts made in year *t* for the earnings of year *t*, *t*+1, and *t*+2, respectively. The forecast error of each individual forecast is computed as the absolute difference between the actual EPS and the forecasts, scaled by the stock price at the beginning of the year.
CSR Information Variables	
NONFIN	An indicator variable that equals 1 if the concerned firm issues stand-alone CSR reports during the year, and 0 otherwise.
ASSURANCE	An indicator variable that equals 1 if the firm's CSR report released in the year is assured by a third party, and 0 otherwise.
HIPAGE	An indicator variable that equals 1 if the number of pages of the firm's CSR report is greater than the median number of pages of all CSR reports released in the corresponding country-year, and 0 otherwise.
Country-Level Variables	
CFIN	Country-level financial opaqueness. It is the mean rank score of a country's average CIFAR ratings in three years (1991, 1993, and 1995), multiplied by (−1). CIFAR 91 and 93 is from Francis et al. (2005a) and CIFAR 95 is from Bushman et al. (2004).
ENFORCE	A measure of the level of legal and public enforcement. Following Leuz et al. (2003), we define legal enforcement (Legal Enforce) as the mean score across three legal variables used in La Porta et al. (1998), including (a) efficiency of the judicial system, (b) assessment of the rule of law, and (c) corruption index. The public enforcement (Public Enforce) index equals the arithmetic mean of five component indices used in La Porta et al. (2006), including: (a) supervisor characteristics index; (b) rule-making power index; (c) investigative powers index; (d) order index; and (e) criminal index. *ENFORCE* is the average rank score of the legal enforcement and public enforcement indices.
STAKELAW	A measure primarily assessing the legal environment of a country in protecting labor rights. It is the average rank score of the following four indices, with the first three from Botero et al. (2004) and the fourth from La Porta et al. (2004): (i) Employment laws, a measure of the protection of labor and employment based on (a) alternative employment contracts; (b) cost of increasing hours worked; (c) cost of firing workers; and (d) dismissal procedures; (ii) Social security laws, a measure of social security benefits based on (a) old age, disability, and death benefits; (b) sickness and health benefits; and (c) unemployment benefits; (iii) Collective relations laws, a measure of the protection of collective relations based on (a) labor union power, and (b) collective disputes; and (iv) Human rights laws, an index for human rights protection, with higher scores indicating better human rights protection.
CSRLAW	Equals 1 if the concerned country has mandatory disclosure requirements on CSR issues only for industrial companies or only for pension funds; 2 if the country has mandatory disclosure requirements for both industrial companies and pension funds, and 0 otherwise.

(continued on next page)

TABLE 2 (continued)

Variables	Description
PUBAWARE	A measure of public awareness of CSR issues at the country level, calculated as the mean rank score of the following two variables: (1) Number of non-government organizations (NGOs) per million population, collected from EarthTrends.com, and (2) total number of CSR reports issued by both commercial and noncommercial organizations divided by millions in population (from the UN Population and Vital Statistics website) in each country.
PUBAWARE1	An alternative measure of public awareness of CSR issues at the country level primarily based on opinion surveys among global corporate executives. It is the mean rank score of the following four indices: (1) sustainable development priority, (2) ethical practice implementation, (3) social responsibility of business leaders, and (4) corporate responsibility competitiveness index (2003). The first three indices are from the Institute for Management Development's (IMD) annual surveys. We use the average of the IMD yearly survey scores in the ranking procedure because these scores are relatively stable across years. Using yearly indices does not change the tenor of our results. The fourth index is from AccountAbility, an international professional institute devoted to promoting social accountability. This index is primarily based on various other surveys, but also incorporates some hard data. It consists of seven categories of social issues such as engagement with civil society and environmental management (National Corporate Responsibility Index 2003, http://www.accountability.org/).
STAKE	The principal factor of *STAKELAW*, *CSRLAW*, *PUBAWARE*, and *PUBAWARE1*.[a]
IFRS	An indicator variable that equals 1 if the firm's home country has adopted mandatory IFRS reporting in the year, and 0 otherwise. Data source: Daske et al. (2008), supplemented by Internet search.
RATIO	Country scores of earnings management for each country and each year computed as the ratio of the number of small (5 percent) positive earnings surprises to the number of small (5 percent) negative earnings surprises.
Other Firm-Level Variables	
FFIN	A measure of firm-level financial transparency measured by country-, industry-, and year-adjusted total scaled accruals based on that of Bhattacharya et al. (2003). Scaled accruals are calculated as the absolute value of a firm's scaled accruals averaged over the past three years of each firm. Scaled accruals (*ACCRUAL*) are computed using balance sheet and income statement information as $ACCRUAL = (\Delta CA - \Delta CL - \Delta CASH + \Delta STD - DEP + \Delta TP)/\text{lag}(TA)$, where ΔCA is the change in total current assets; ΔCL is the change in total current liabilities; $\Delta CASH$ is the change in cash; ΔSTD is the change in the current portion of long-term debt included in total current liabilities; DEP is depreciation and amortization expense; ΔTP is the change in income taxes payable; and lag(TA) is total assets at the end of the previous year. *FFIN* takes the value of 1 if a firm has a higher than country-industry-year mean of *ACCRUAL*, and 0 otherwise.
ANANO	The natural logarithm of the number of analysts following the firm through the year.
SIZE	The natural logarithm of a firm's total assets in U.S. dollars at the end of the previous year.
VAREARN	The natural logarithm of the time-series standard deviation of earnings per share (EPS). We use a rolling window of ten years before the current year and require at least three years of EPS to calculate the standard deviation.

(continued on next page)

TABLE 2 (continued)

Variables	Description
LOSS	An indicator variable that equals 1 if the firm reports negative earnings in the year, and 0 otherwise.
STKEXCH	As defined in Hope (2003), a summary score describing all the major stock exchanges on which a firm was listed during the sample period. A listing on any of the U.S. exchanges is given a weight of 1.5, a listing on all other exchanges are given a weight of 1. The scores for each firm are summed. The stock listing data are obtained from Standard & Poor's Capital IQ database. Data source: Capital IQ (http://www.capitaliq.com).
ADR	An indicator variable that equals 1 if a non-U.S. company also trades in the U.S. markets through American Depositary Receipts (ADR) programs during the year, and 0 otherwise. Data source: CRSP.
FHORIZON	The median forecast horizon (the number of days between earnings announcement date and forecast date) of analyst forecasts for each firm each year.

[a] In cases where a certain subcomponent is missing, namely, human rights for Hong Kong, corporate responsibility competitiveness for Philippines, and CIFAR 91 and 93 for Thailand, we use the non-missing subcomponents to compute the average score.

and corporate responsibility competitiveness (see Table 2 for detailed variable definitions and Appendix A for all the indices). *PUBAWARE1* is the mean rank score of the four indices, with higher values indicating greater stakeholder orientation.

The aforementioned four proxies correspond to attributes highlighted by stakeholder theory as describing the relative importance of stakeholder groups such as power, legitimacy, and salience (Mitchell et al. 1997). We expect these variables to have a strengthening effect on the positive relation between CSR disclosures and analyst forecast accuracy. While our main test variable is the principal factor of these four individual measures, *STAKE*, we examine the robustness of our results using each individual measure as well.[11]

Financial Opaqueness

We measure financial opaqueness at both the firm level and the country level. Following Bhattacharya et al. (2003), DeFond and Hung (2003), and Leuz et al. (2003), we compute the firm-level financial opaqueness measure *FFIN* as the absolute value of a firm's scaled accruals, averaged over the prior three years. DeFond and Hung (2003) argue that it is the magnitude of total accruals, instead of the components of accruals, that drives investors' suspicion regarding large accruals and earnings and compels investors to rely on other sources of information to assess the firm's financial performance.[12]

[11] Using the average country-level rank scores of the four proxies in place of the principal factor does not change the tenor of our results.

[12] We also consider two alternative firm-level financial opacity measures. One is an indicator variable that equals 1 if the correlation between accruals and cash flows, calculated over a rolling window of ten years before the current year with a minimum of three years of data, is less than the country-industry-year median, and 0 otherwise (Leuz et al. 2003). The other is an indicator variable based on the residual from the accrual quality model in Francis et al. (2005b, 302), which is a combination of the models developed by Dechow and Dichev (2002) and Jones (1991). This indicator equals 1 if the standard deviation of the residuals calculated over a ten-year rolling window before the current year is greater than the country-industry-year median, and 0 otherwise. The results (untabulated) for the tests of our three hypotheses are qualitatively similar to those reported.

Scaled accruals (*ACCRUAL*) are calculated using information about current assets (*CA*), current liabilities (*CL*), cash (*CASH*), current portion of long-term debt (*STD*), depreciation and amortization expense (*DEP*), income taxes payable (*TP*), and total assets (*TA*):

$$ACCRUAL_{i,t} = (\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta CASH_{i,t} + \Delta STD_{i,t} - DEP_{i,t} + \Delta TP_{i,t})/TA_{i,t-1}, \quad (2)$$

where subscripts i and t denote firm i and year t, respectively, and Δ indicates annual change.

To reduce measurement error, we convert the absolute value of *ACCRUAL* into an indicator variable that takes a value of 1 if a firm's three-year (the current year and prior two years) average absolute accruals is greater than the median of the same industry in the same country of the period, and 0 otherwise. This construct is consistent with the ranking scheme used by Leuz et al. (2003) to construct country-level measures of earnings management.

Our proxy for country-level financial opaqueness (*CFIN*) is based on the average rank score of the average country-level Center for International Financial Analysis and Research (CIFAR) ratings in three years, 1991, 1993, and 1995, from Bushman et al. (2004) and Francis et al. (2005a) (see Appendix A for the detailed scores). We multiply the average rank score based on CIFAR ratings by (−1) to obtain *CFIN* such that a higher value of *CFIN* corresponds to greater financial opacity. Based on extensive validity tests, Hope (2003) confirms the quality and reliability of CIFAR ratings as a financial transparency measure.[13]

Empirical Models

Base Model

Following Hope (2003), we estimate the following baseline model to test H1:

$$Forecast\ error = f(Nonfinancial\ disclosure, Control\ variables). \quad (3)$$

Model (3) is estimated separately for each of the three forecast error horizons. The dependent variable, *Forecast error*, takes the form of *FERROR*(*0*), *FERROR*(*1*), or *FERROR*(*2*), denoting that the forecast error is for forecasts of the current-year earnings, one-year-ahead earnings, and two-years-ahead earnings, respectively. Detailed definitions of all variables are in Table 2. Our main variable of interest, *Nonfinancial disclosure*, is proxied by, *NONFIN*, an indicator variable showing whether the company issued at least one stand-alone CSR report during the year. H1 predicts a negative coefficient on *NONFIN*.

Following Hope (2003) we include a number of additional variables, especially those correlated with financial transparency, to control for various factors that are likely to confound the relationship between forecast error and CSR disclosure. Specifically, we control for country-level financial opacity (*CFIN*) and legal enforcement (*ENFORCE*) because Hope (2003) shows that both are associated with forecast accuracy. In addition, we include analyst following (*ANANO*) because Lys and Soo (1995) suggest that greater analyst following indicates more intense competition among analysts and, hence, greater incentives for analysts to enhance forecast accuracy. We further control for firm size (*SIZE*), measured as the natural logarithm of total assets, as a proxy for a firm's general information environment (Atiase 1985) and various correlated factors (Hope 2003).[14]

[13] In robustness tests (untabulated), we use two alternative proxies for country-level financial opacity: the financial transparency index (*FACTOR1*) that measures the intensity and timeliness of financial disclosures by firms, analyst following, and media penetration from Bushman et al. (2004), and the disclosure index that measures the inclusion or omission of 90 items in the 1990 annual reports from La Porta et al. (1998). Our results remain similar.

[14] Using the natural logarithm of market value of equity, instead of total assets, yields similar findings.

More volatile earnings are more difficult to forecast (Dichev and Tang 2009). Hence, we include the natural logarithm of the time-series standard deviation of earnings per share (*VAREARN*) and predict it to be positively associated with forecast error.[15] Hope (2003) argues that losses make earnings more volatile in countries with more conservative accounting systems and, hence, more difficult to predict. We include an indicator variable, *LOSS*, to control for this effect. Note that earnings volatility (*VAREARN*) and loss status (*LOSS*) mainly relate to the information uncertainty arising from firms' fundamental operation and do not directly measure firms' disclosure policies.

In addition, Hope (2003) argues that firms listed in multiple stock exchanges are likely to be subject to more capital market pressure and investor interest, which in turn is likely to help improve the information environment of these firms. Accordingly, we include *STKEXCH* to indicate the number of exchanges the firm is listed and predict that *STKEXCH* is negatively associated with forecast errors. Also, Lang et al. (2003) document improvement in analyst forecast accuracy for non-U.S. firms subsequent to their initiation of stock trading in the U.S. Given that the U.S. is among the countries with the most stringent reporting regulation for public firms, a cross-listing in the U.S. could have an effect on improving forecast accuracy incremental to that captured by *STKEXCH*. We therefore include an indicator variable, *ADR*, to denote whether a non-U.S. firm has a cross-listing in the U.S.

As Horton et al. (2009) show that mandatory IFRS adoption is associated with improvement in analyst forecast accuracy, we include an indicator variable *IFRS* to indicate whether the forecasts are made after the adoption of IFRS by the firm's home country. We also include managers' earnings management incentives at the country level, measured as the ratio of the number of small positive earnings surprises to the number of small negative earnings surprises (*RATIO*). Earnings management to just meet or beat analysts' forecasts will mechanically lead to lower forecast errors. Following prior research (e.g., O'Brien 1990), we control for forecast horizon (*FHORIZON*), namely, the length of time between the forecasting date and the earnings announcement date. Forecast horizon is likely to affect the amount of information available to analysts and, hence, affect forecast accuracy, such that *FHORIZON* is predicted to be positively associated with forecast error. Finally, we include the accrual-based measure, *FFIN*, to specifically control for firms' financial opaqueness. We expect analyst earnings forecasts for financially opaque firms to be less accurate than those for more transparent firms.

To test H2, we add to model (3) the interaction effect between *NONFIN* and country-level stakeholder orientation, *STAKE*. To test H3, we include the interaction of *NONFIN* and the proxy for firm-level financial opacity, *FFIN*, and that for country-level financial opacity, *CFIN*. For all regressions, we include country, industry, and year fixed effects and following Petersen (2009) and Gow et al. (2010), we cluster by firm when calculating the robust standard errors.[16] A significantly negative coefficient on *NONFIN* $*$ *STAKE*, *NONFIN* $*$ *FFIN*, and *NONFIN* $*$ *CFIN* would support our hypotheses.

IV. RESULTS

Descriptive Statistics

Table 3, Panel A presents summary statistics of our key variables by country. We winsorize all firm-level continuous variables at the 1st and the 99th percentiles to ensure that our results are not driven by extreme values. Consistent with the common notion that the U.S. has a relatively more

[15] Deflating the standard deviation of earnings per share (EPS) by the corresponding mean of EPS yields similar findings.

[16] Clustering by country and year or firm and year does not change the tenor of our results.

TABLE 3
Descriptive Statistics

Panel A: Descriptive Statistics

Country		No. of Firm-Year Obs.	No. of CSR Reporters	No. of CSR Reports	% of CSR Reports	% of CSR Reports with Assurance	Average No. of Pages per Report	*FERROR* (*0*)	*FERROR* (*1*)	*FERROR* (*2*)
1	Australia	3,034	56	362	11.93	24.59	37.97	0.031	0.050	0.063
2	Austria	368	9	36	9.78	30.56	58.60	0.059	0.158	0.316
3	Belgium	644	9	38	5.90	28.95	62.08	0.054	0.179	0.420
4	Brazil	827	20	105	12.70	9.52	92.79	0.050	0.090	0.139
5	Canada	5,732	46	233	4.06	10.30	41.63	0.032	0.061	0.073
6	Chile	553	5	22	3.98	27.27	72.00	0.053	0.071	0.106
7	Denmark	752	15	122	16.22	45.08	38.03	0.056	0.098	0.162
8	Finland	925	21	191	20.65	27.23	40.94	0.033	0.087	0.147
9	France	2,950	59	324	10.98	27.78	79.15	0.037	0.090	0.145
10	Germany	2,869	62	369	12.86	18.16	56.54	0.060	0.109	0.163
11	Greece	535	10	31	5.79	6.45	59.68	0.032	0.251	0.275
12	Hong Kong	1,674	7	36	2.15	66.67	43.06	0.040	0.066	0.096
13	India	596	11	24	4.03	58.33	78.54	0.038	0.047	0.048
14	Italy	1,172	29	169	14.42	59.17	103.69	0.039	0.093	0.093
15	Japan	22,104	274	1,669	7.55	31.04	41.15	0.044	0.067	0.093
16	Korea	919	17	71	7.73	43.66	58.64	0.122	0.198	0.225
17	Malaysia	1,608	5	8	0.50	37.50	166.13	0.049	0.070	0.093
18	Mexico	778	4	24	3.08	0.00	87.88	0.073	0.117	0.158
19	The Netherlands	1,328	19	162	12.20	27.16	41.65	0.032	0.063	0.091
20	New Zealand	544	11	48	8.82	16.67	52.27	0.026	0.040	0.051
21	Norway	878	17	72	8.20	23.61	59.90	0.056	0.103	0.139
22	Philippines	216	2	6	2.78	0.00	37.33	0.079	0.117	0.164
23	Portugal	209	9	40	19.14	35.00	88.62	0.030	0.174	0.701
24	Singapore	734	5	19	2.59	0.00	71.26	0.032	0.053	0.072
25	South Africa	1,051	37	174	16.56	17.24	119.90	0.043	0.072	0.108
26	Spain	917	32	162	17.67	49.38	117.04	0.031	0.187	0.844
27	Sweden	1,398	28	219	15.67	16.89	44.96	0.046	0.082	0.108

(continued on next page)

TABLE 3 (continued)

Country		No. of Firm-Year Obs.	No. of CSR Reporters	No. of CSR Reports	% of CSR Reports	% of CSR Reports with Assurance	Average No. of Pages per Report	*FERROR* (*0*)	*FERROR* (*1*)	*FERROR* (*2*)
28	Switzerland	1,168	32	193	16.52	33.68	51.49	0.046	0.077	0.107
29	Thailand	822	4	10	1.22	0.00	65.10	0.091	0.148	0.271
30	U.K.	9,950	179	997	10.02	43.13	40.04	0.037	0.068	0.097
31	U.S.A.	46,090	263	1,172	2.54	5.20	32.69	0.023	0.048	0.062
Total		113,345	1,297	7,108						

Panel A: Descriptive Statistics (continued)

Country		*FFIN*	*CFIN*	*ENFORCE*	*STAKELAW*	*CSRLAW*	*PUBAWARE*	*PUBAWARE1*	*STAKE*
1	Australia	0.409	−27.00	26.50	14.88	2	23.5	22.50	1.58
2	Austria	0.438	−4.00	11.75	15.88	1	22.5	25.75	1.25
3	Belgium	0.522	−11.25	11.25	16.13	2	22.5	17.50	1.29
4	Brazil	0.484	−1.75	12.25	12.13	0	4.5	7.63	−1.92
5	Canada	0.431	−18.00	25.00	13.50	1	19.0	21.25	0.56
6	Chile	0.544	−14.25	14.50	13.38	0	13.0	13.50	−0.88
7	Denmark	0.471	−17.50	21.00	23.38	2	28.5	29.00	2.95
8	Finland	0.495	−28.75	18.00	22.50	0	29.5	29.13	1.89
9	France	0.442	−23.25	19.25	25.63	2	13.0	14.00	1.12
10	Germany	0.456	−9.00	10.50	22.75	1	14.5	19.25	0.81
11	Greece	0.499	−4.25	7.75	17.63	0	15.5	6.00	−0.33
12	Hong Kong	0.430	−15.50	21.75	15.83	0	8.5	11.88	−1.11
13	India	0.478	−3.75	12.50	7.00	0	1.0	4.50	−2.73
14	Italy	0.457	−9.25	13.25	21.50	1	16.0	4.75	−0.09
15	Japan	0.473	−13.25	9.75	13.00	0	11.5	14.50	−0.95
16	Korea	0.450	−8.25	5.25	13.25	0	8.0	8.00	−1.57
17	Malaysia	0.433	−23.50	18.75	3.13	0	8.5	16.25	−1.76
18	Mexico	0.536	−12.75	8.00	15.00	0	4.5	2.88	−1.47
19	The Netherlands	0.477	−15.50	21.50	20.13	1	22.5	25.00	1.52
20	New Zealand	0.564	−26.50	19.50	12.63	0	26.5	24.00	0.64
21	Norway	0.478	−21.00	18.00	26.63	1	31.0	25.75	2.62

(continued on next page)

TABLE 3 (continued)

Country		*FFIN*	*CFIN*	*ENFORCE*	*STAKELAW*	*CSRLAW*	*PUBAWARE*	*PUBAWARE1*	*STAKE*
22	Philippines	0.500	−8.00	14.00	12.75	0	3.5	7.83	−1.93
23	Portugal	0.565	−1.25	15.25	24.25	0	17.5	5.25	−0.29
24	Singapore	0.428	−21.50	22.25	5.75	0	18.0	21.63	−0.59
25	South Africa	0.486	−22.50	6.50	10.00	0	10.0	12.00	−1.42
26	Spain	0.491	−11.00	10.75	19.75	0	17.0	9.00	−0.42
27	Sweden	0.447	−29.75	22.50	26.88	2	26.0	26.75	2.90
28	Switzerland	0.508	−24.50	19.50	19.75	0	28.0	25.25	1.34
29	Thailand	0.462	−7.50	12.50	7.63	0	6.0	10.50	−1.96
30	U.K.	0.441	−30.00	20.25	10.50	2	19.5	14.25	0.47
31	U.S.A.	0.410	−20.00	26.50	9.13	0	6.5	14.75	−1.55

Panel B: Correlations (Pearson\Spearman) *FERROR(0)* to *RATIO*

	FERROR(0)	*FERROR(1)*	*FERROR(2)*	*ANANO*	*SIZE*	*FFIN*	*VAREARN*	*LOSS*	*STKEXCH*	*ADR*	*IFRS*	*RATIO*
FERROR(0)		**0.75**	**0.65**	**−0.19**	**−0.08**	**0.10**	**0.16**	**0.30**	**−0.14**	0.01	**0.01**	**−0.14**
FERROR(1)	**0.85**		**0.82**	**−0.17**	**−0.14**	**0.11**	**0.20**	**0.33**	**−0.14**	0.00	**−0.02**	**−0.15**
FERROR(2)	**0.68**	**0.83**		**−0.17**	**−0.17**	**0.11**	**0.20**	**0.37**	**−0.15**	0.01	**−0.03**	**−0.15**
ANANO	**−0.05**	**−0.02**	**0.02**		**0.21**	**−0.04**	**−0.03**	**−0.13**	**0.23**	**0.12**	**0.04**	**0.02**
SIZE	0.00	0.00	**0.02**	**0.16**		**−0.05**	**−0.10**	**−0.20**	**0.14**	**0.14**	**−0.09**	**−0.07**
FFIN	**0.07**	**0.07**	**0.04**	**−0.04**	**−0.04**		**0.03**	**0.10**	**−0.05**	**0.06**	**0.01**	**−0.01**
VAREARN	**0.01**	**0.01**	**−0.01**	**0.02**	**−0.12**	**0.01**		**0.20**	**−0.05**	**0.01**	**0.01**	**0.02**
LOSS	**0.15**	**0.13**	**0.04**	**−0.12**	**−0.18**	**0.10**	**0.10**		**−0.08**	**−0.01**	**−0.02**	**−0.02**
STKEXCH	**−0.05**	**−0.04**	**−0.02**	**0.24**	**0.10**	**−0.04**	**0.01**	**−0.08**		**0.09**	**0.10**	**0.13**
ADR	**0.03**	**0.03**	**0.03**	**0.13**	**0.14**	**0.06**	**0.04**	**−0.01**	**0.15**		**0.07**	**−0.02**
IFRS	**−0.02**	**−0.03**	**−0.04**	**0.05**	**−0.10**	**0.01**	**−0.05**	**−0.02**	**0.11**	**0.07**		**0.11**
RATIO	**−0.06**	**−0.06**	**−0.04**	**−0.02**	**−0.05**	**−0.01**	**0.04**	**−0.01**	**0.08**	**−0.05**	**0.11**	
FHORIZON	**0.06**	**0.06**	**0.07**	**0.33**	**−0.05**	**−0.03**	**0.06**	**−0.05**	**0.07**	**−0.04**	**−0.07**	**0.09**
CFIN	**0.17**	**0.18**	**0.22**	**−0.09**	**0.49**	**0.03**	**−0.04**	**−0.03**	**−0.03**	**−0.02**	**−0.15**	**−0.09**
ENFORCE	**−0.12**	**−0.12**	**−0.13**	**0.19**	**−0.60**	**−0.06**	**0.17**	**0.06**	**0.07**	**−0.13**	**−0.07**	**0.08**
STAKE	**−0.03**	**−0.02**	**−0.04**	**0.05**	**−0.08**	**0.03**	**−0.10**	**−0.01**	**−0.02**	**0.15**	**0.35**	**−0.21**
STAKELAW	**0.03**	**0.06**	**0.05**	**0.06**	**0.14**	**0.03**	**−0.10**	**−0.02**	**0.06**	**0.16**	**0.30**	**−0.23**
CSRLAW	**−0.01**	0.00	**−0.02**	**0.09**	**−0.27**	0.00	**−0.07**	0.00	**0.03**	**0.17**	**0.34**	**−0.15**

(continued on next page)

TABLE 3 (continued)

	FERROR(0)	*FERROR(1)*	*FERROR(2)*	*ANANO*	*SIZE*	*FFIN*	*VAREARN*	*LOSS*	*STKEXCH*	*ADR*	*IFRS*	*RATIO*
PUBAWARE	**−0.03**	**−0.02**	**−0.03**	**0.04**	**−0.05**	**0.03**	**−0.11**	**−0.02**	**−0.03**	**0.15**	**0.34**	**−0.19**
PUBAWARE1	**−0.09**	**−0.11**	**−0.16**	**0.05**	**−0.19**	0.00	0.00	**0.02**	**−0.05**	**−0.03**	**0.13**	**−0.15**
NONFIN	**−0.02**	**−0.01**	**−0.01**	**0.21**	**0.25**	0.00	**−0.01**	**−0.06**	**0.18**	**0.23**	**0.13**	**0.04**

Panel B: Correlations (Pearson\Spearman) *FHORIZON* to *NONFIN* (continued)

	FHORIZON	*CFIN*	*ENFORCE*	*STAKE*	*STAKELAW*	*CSRLAW*	*PUBAWARE*	*PUBAWARE1*	*NONFIN*
FERROR(0)	**0.11**	**0.08**	**−0.17**	**0.11**	**0.15**	**0.09**	**0.11**	**−0.06**	**−0.07**
FERROR(1)	**0.09**	**0.05**	**−0.10**	**0.07**	**0.11**	**0.07**	**0.06**	**−0.01**	**−0.06**
FERROR(2)	**0.12**	**0.05**	**−0.12**	**0.08**	**0.13**	**0.08**	**0.08**	**−0.01**	**−0.07**
ANANO	**0.25**	**−0.11**	**0.15**	**−0.01**	0.00	**0.09**	**−0.01**	**0.11**	**0.21**
SIZE	**−0.02**	**0.50**	**−0.53**	**0.04**	**0.25**	**−0.27**	**0.04**	**−0.30**	**0.24**
FFIN	**−0.04**	**0.03**	**−0.06**	**0.03**	**0.04**	**0.01**	**0.03**	**−0.02**	0.00
VAREARN	**−0.03**	−0.00	**−0.01**	**0.02**	**0.02**	**0.03**	**0.02**	**0.02**	0.00
LOSS	**−0.05**	**−0.02**	**0.06**	**−0.03**	**−0.03**	**0.00**	**−0.03**	**0.05**	**−0.06**
STKEXCH	**0.10**	**−0.01**	**0.10**	**−0.10**	**−0.04**	**−0.06**	**−0.09**	**−0.02**	**0.15**
ADR	**−0.05**	**−0.02**	**−0.15**	**0.14**	**0.18**	**0.17**	**0.15**	**−0.13**	**0.23**
IFRS	**−0.09**	**−0.15**	**−0.11**	**0.32**	**0.28**	**0.34**	**0.33**	**−0.03**	**0.13**
RATIO	**0.11**	**−0.15**	**0.14**	**−0.20**	**−0.25**	**−0.15**	**−0.17**	**−0.10**	**0.05**
FHORIZON		**−0.12**	**0.31**	**−0.25**	**−0.30**	**−0.18**	**−0.25**	**0.14**	**0.02**
CFIN	**−0.14**		**−0.61**	**−0.44**	−0.05	−0.24	**−0.53**	**−0.63**	0.00
ENFORCE	**0.30**	**−0.63**		**0.38**	0.05	0.21	**0.41**	**0.53**	**−0.10**
STAKE	**−0.18**	**−0.47**	**0.40**		**0.72**	**0.44**	**0.90**	**0.83**	**0.13**
STAKELAW	**−0.24**	−0.06	0.07	**0.72**		**0.52**	**0.57**	**0.30**	**0.14**
CSRLAW	**−0.13**	−0.28	0.26	**0.44**	**0.46**		**0.45**	**0.31**	**0.09**
PUBAWARE	**−0.17**	**−0.51**	**0.41**	**0.92**	**0.59**	**0.44**		**0.80**	**0.14**
PUBAWARE1	**0.01**	**−0.62**	**0.57**	**0.85**	**0.30**	**0.32**	**0.81**		**−0.03**
NONFIN	**0.02**	**−0.01**	**−0.09**	**0.14**	**0.13**	**0.10**	**0.13**	**0.05**	

In Panel B, the Pearson (Spearman) correlations are below (above) the diagonal. A correlation coefficient in bold indicates that the correlation is statistically significant at better than the 10 percent level. All variables are defined in Table 2. Correlation coefficients between country-level variables are estimated at the country level (31 observations). All other correlation coefficients are estimated at the firm level.

transparent financial information environment, its average firm-level financial opacity (*FFIN*) ranks the second lowest among the 31 countries in our sample, slightly higher than Australia. The U.S. also has the highest enforcement index score (*ENFORCE*) (the same as Australia). Notably, among the 31 countries the U.S. has relatively high (low) average forecast accuracy (forecast error) (accuracy ranked the first place for *FERROR*(*0*), second place for *FERROR*(*1*), and third place for *FERROR*(*2*)). In contrast to its relatively high ranking in financial transparency, the U.S. ranks the fifth lowest in the legislation of rules protecting the interests of employees (*STAKELAW*), and seventh lowest in the principal factor of the four individual measures of stakeholder orientation (*STAKE*).

Table 3, Panel B reports the correlation among the main variables. Consistent with H1, CSR disclosure (*NONFIN*) is significantly negatively correlated with *FERROR* for all three forecasting horizons. The four alternative proxies for stakeholder orientation, *STAKELAW*, *CSRLAW*, *PUBAWARE*, and *PUBAWARE1*, are highly correlated with one another, thus suggesting that they likely capture the same underlying construct—the level of stakeholder importance. The principal factor, *STAKE*, has correlation coefficients with the individual proxies ranging from 0.44 to 0.92. Cronbach's alpha (standardized) among the four proxies is 0.74 (0.79).

Regression Results

Table 4, Panel A, columns I, IV, and VII present the empirical results of the tests of H1 for the three forecast horizons. All coefficients have been multiplied by 100. For forecast errors calculated for all three horizons, our main variable of interest *NONFIN* has a significantly negative coefficient. Using the mean of *FERROR*(*0*), *FERROR*(*1*), and *FERROR*(*2*) of 0.042, 0.082, and 0.186 (untabulated), respectively, the coefficient estimates on *NONFIN*, −0.435 (percent), −0.823 (percent), and −1.819 (percent) each correspond to an average improvement in forecast accuracy of about 10 percent. These findings suggest that CSR disclosure is associated with improved forecast accuracy in both short- and long-horizon forecasts, supporting H1.

Columns II, V, and VIII of Table 4, Panel A present the regression results for testing H2. In all three forecast horizons, the interaction term *NONFIN* × *STAKE* is significantly negative, which supports H2. In columns III, VI, and IX, we report results for the full model, including the interaction terms to test H3. The coefficient on *NONFIN* × *CFIN* is significantly negative in all three models. The coefficient on *NONFIN* × *FFIN* is negative in all three models, although it is significantly so only for *FERROR*(*0*). Overall, the evidence suggests that at both the firm level and the country level, CSR disclosure mitigates the negative effect of financial opaqueness on forecast accuracy, supporting H3. Note that our financial opaqueness measures, *FFIN* and *CFIN*, are positively associated with forecast errors in all model specifications.

Table 4, Panel B reports the results after replacing *STAKE* with its four components, *STAKELAW*, *CSRLAW*, *PUBAWARE*, and *PUBAWARE1*. For brevity, we only tabulate the results for *FERROR*(*0*), but results for the other two forecast horizons are similar. In general, our main results remain similar to those in Panel A.

Overall, we find evidence consistent with all three hypotheses: CSR disclosure is negatively associated with analyst forecast error, and the relationship varies with stakeholder orientation and financial opacity in the direction predicted by stakeholder theory and disclosure theory, respectively. Next, we conduct a number of additional tests to provide corroborating evidence.

V. ADDITIONAL ANALYSES

In this section, we first estimate our base model within individual countries to ensure that the relationship between CSR disclosure and analyst forecast accuracy is truly an international

TABLE 4

Analyst Forecast Accuracy and CSR Disclosure

Panel A: Main Models

Dependent Variable	Pred. Sign	*FERROR(0)* I	II	III	*FERROR(1)* IV	V	VI	*FERROR(2)* VII	VIII	IX
N		113,345	113,345	113,345	94,586	94,586	94,586	60,370	60,370	60,370
N (*NONFIN* = 1)		7,108	7,108	7,108	6,291	6,291	6,291	5,709	5,709	5,709
Adj. R^2		0.1205	0.1211	0.1213	0.1237	0.1237	0.1238	0.1082	0.1085	0.1088
Country Indicators		Included	Included	Included	Included	Included	Included	Included	Included	Included
Industry Indicators		Included	Included	Included	Included	Included	Included	Included	Included	Included
Year Indicators		Included	Included	Included	Included	Included	Included	Included	Included	Included
Intercept		7.687***	7.705***	7.822***	12.228***	12.261***	12.437***	33.742***	33.806***	34.834***
		(10.52)	(10.56)	(10.71)	(7.25)	(7.26)	(7.35)	(3.34)	(3.35)	(3.45)
CFIN	+	0.073***	0.077***	0.078***	0.181***	0.186***	0.186***	0.940***	0.961***	0.967***
		(2.72)	(2.83)	(2.89)	(2.94)	(3.02)	(3.01)	(2.72)	(2.78)	(2.79)
ENFORCE	−	−0.091***	−0.087***	−0.090***	−0.035	−0.031	−0.037	−0.108	−0.086	−0.112
		(−6.35)	(−6.12)	(−6.34)	(−1.25)	(−1.12)	(−1.31)	(−0.93)	(−0.77)	(−0.98)
ANANO	−	−0.673***	−0.676***	−0.672***	−0.837***	−0.838***	−0.832***	−1.652***	−1.652***	−1.615***
		(−15.69)	(−15.82)	(−15.75)	(−9.29)	(−9.29)	(−9.17)	(−4.50)	(−4.51)	(−4.42)
SIZE	−	−0.038	−0.038	−0.044	−0.173***	−0.174***	−0.183***	−0.032	−0.034	−0.038
		(−1.34)	(−1.33)	(−1.55)	(−2.58)	(−2.60)	(−2.73)	(−0.10)	(−0.10)	(−0.24)
VAREARN	+	0.105***	0.106***	0.107***	0.237***	0.237***	0.238***	0.507***	0.510***	0.516***
		(14.69)	(14.71)	(14.86)	(16.56)	(16.59)	(16.60)	(8.82)	(8.89)	(9.01)
LOSS	+	3.057***	3.055***	3.054***	6.314***	6.308***	6.316***	14.092***	14.072***	14.089***
		(16.87)	(16.87)	(16.85)	(21.19)	(21.18)	(21.18)	(21.33)	(21.31)	(21.38)
STKEXCH	−	−0.085***	−0.086***	−0.087***	−0.216***	−0.219***	−0.217***	−0.320***	−0.326***	−0.333***
		(−5.05)	(−5.09)	(−5.18)	(−6.06)	(−6.17)	(−6.01)	(−2.76)	(−2.83)	(−2.90)
ADR	−	−0.289*	−0.271*	−0.240	−1.082***	−1.029***	−0.997***	−3.301***	−3.153***	−2.960***
		(−1.91)	(−1.80)	(−1.59)	(−3.67)	(−3.47)	(−3.34)	(−3.13)	(−3.00)	(−2.81)
IFRS	−	−0.357	−0.355	−0.345	−0.759*	−0.729***	−0.700*	−5.094***	−5.056***	−4.943***
		(−1.30)	(−1.30)	(−1.27)	(−1.86)	(−1.79)	(−1.74)	(−2.95)	(−2.94)	(−2.90)

(continued on next page)

TABLE 4 (continued)

Dependent Variable	Pred. Sign	*FERROR(0)* I	*FERROR(0)* II	*FERROR(0)* III	*FERROR(1)* IV	*FERROR(1)* V	*FERROR(1)* VI	*FERROR(2)* VII	*FERROR(2)* VIII	*FERROR(2)* IX
RATIO	−	−6.654***	−6.671***	−6.644***	−13.616***	−13.609***	−13.595***	−25.547***	−25.641***	−25.421***
		(−6.90)	(−6.91)	(−6.89)	(−7.47)	(−7.47)	(−7.48)	(−3.89)	(−3.91)	(−3.88)
FHORIZON	+	0.004***	0.004***	0.004***	0.003**	0.003***	0.003***	0.005	0.006	0.006
		(5.90)	(5.92)	(5.98)	(2.50)	(2.57)	(2.60)	(1.09)	(1.16)	(1.21)
FFIN	+	0.400***	0.401***	0.429***	1.026***	1.034***	1.050***	1.898***	1.897***	1.926***
		(8.71)	(8.72)	(8.92)	(11.10)	(11.13)	(10.97)	(6.55)	(6.55)	(6.62)
STAKE	?		0.291***	0.291***		0.366*	0.358		2.514**	2.496**
			(2.70)	(2.70)		(1.66)	(1.62)		(2.18)	(2.17)
NONFIN (H1)	−	−0.435***	−0.632***	−1.397***	−0.823***	−1.099***	−2.268***	−1.819*	−3.178***	−9.970***
		(−3.04)	(−4.47)	(−4.58)	(−3.16)	(−4.02)	(−3.64)	(−1.84)	(−2.97)	(−4.43)
NONFIN × *STAKE* (H2)	−		−0.297***	−0.271***		−0.385***	−0.308**		−1.905***	−1.529***
			(−3.76)	(−3.82)		(−2.50)	(−2.29)		(−3.82)	(−3.14)
NONFIN × *FFIN* (H3)	−			−0.461***			−0.298			−0.323
				(−3.00)			(−1.16)			(−0.32)
NONFIN × *CFIN* (H3)	−			−0.068***			−0.093***			−0.497***
				(−4.75)			(−3.40)			(−5.03)

Panel B: Replace *STAKE* by Its Individual Components

Dependent Variable Component of *STAKE* Used	Pred. Sign	*FERROR(0)* I *STAKELAW*	*FERROR(0)* II *CSRLAW*	*FERROR(0)* III *PUBAWARE*	*FERROR(0)* IV *PUBAWARE1*
N		113,345	113,345	113,345	113,345
N (*NONFIN* = 1)		7,108	7,108	7,108	7,108
Adj. R^2		0.1211	0.1212	0.1213	0.1212
Country Indicators		Included	Included	Included	Included
Industry Indicators		Included	Included	Included	Included
Year Indicators		Included	Included	Included	Included

(continued on next page)

TABLE 4 (continued)

Dependent Variable Component of *STAKE* Used	Pred. Sign	*FERROR(0)* I *STAKELAW*	II *CSRLAW*	III *PUBAWARE*	IV *PUBAWARE1*
Intercept		6.654***	7.003***	6.825***	6.924***
		(12.42)	(12.59)	(12.75)	(12.54)
CFIN	+	0.048**	0.062***	0.083***	0.095***
		(2.27)	(2.71)	(2.97)	(3.10)
ENFORCE	−	−0.099***	−0.089***	−0.082***	−0.093***
		(−6.63)	(−6.25)	(−5.60)	(−6.71)
ANANO	−	−0.672***	−0.668***	−0.674***	−0.673***
		(−15.75)	(−15.71)	(−15.69)	(−15.68)
SIZE	−	−0.041	−0.044	−0.041	−0.041
		(−1.44)	(−1.55)	(−1.46)	(−1.46)
VAREARN	+	0.106***	0.106***	0.107***	0.107***
		(14.70)	(14.83)	(14.88)	(14.92)
LOSS	+	3.051***	3.049***	3.062***	3.062***
		(16.81)	(16.81)	(16.90)	(16.90)
STKEXCH	−	−0.090***	−0.086***	−0.086***	−0.085***
		(−5.39)	(−5.14)	(−5.12)	(−5.09)
ADR	−	−0.238	−0.256***	−0.241	−0.240
		(−1.59)	(−1.70)	(−1.58)	(−1.57)
IFRS	−	−0.301	−0.306	−0.359	−0.357
		(−1.13)	(−1.14)	(−1.32)	(−1.32)
RATIO	−	−6.775***	−6.686***	−6.657***	−6.634***
		(−7.11)	(−6.92)	(−6.95)	(−6.89)
FHORIZON	+	0.004***	0.004***	0.004***	0.004***
		(5.90)	(5.88)	(6.02)	(6.03)
FFIN	+	0.430***	0.431***	0.428***	0.429***
		(8.94)	(8.96)	(8.91)	(8.93)
STAKE	?	0.037**	0.508**	0.061***	0.078***
		(1.94)	(2.43)	(2.86)	(2.92)

(continued on next page)

TABLE 4 (continued)

Dependent Variable Component of *STAKE* Used	Pred. Sign	*FERROR(0)* I *STAKELAW*	II *CSRLAW*	III *PUBAWARE*	IV *PUBAWARE1*
NONFIN (H1)	–	0.037	−1.207***	−0.768**	−0.724**
		(0.08)	(−3.97)	(−2.29)	(−1.96)
NONFIN × *STAKE* (H2)	–	−0.064***	−0.459***	−0.034**	−0.028
		(−3.42)	(−3.42)	(−2.42)	(−1.59)
NONFIN × *FFIN* (H3)	–	−0.461***	−0.479***	−0.465***	−0.480***
		(−3.01)	(−3.12)	(−3.01)	(−3.13)
NONFIN × *CFIN* (H3)	–	−0.043***	−0.077***	−0.063***	−0.058***
		(−2.86)	(−4.88)	(−4.22)	(−3.81)

*, **, *** Indicate that the estimated coefficients are statistically significant at the 10 percent, 5 percent, and 1 percent levels, respectively, in two-tailed t-tests based on robust standard errors. All firm-level continuous variables are winsorized at the 1st and the 99th percentiles. The coefficients have been multiplied by 100. All variables are defined in Table 2.

phenomenon. We then investigate whether analysts' use of CSR information is manifested in the form of stock returns incorporating future earnings information. These tests provide supplemental evidence for our main findings in Section IV.

Country-by-Country Analysis

Our regression findings could potentially be driven by observations from only a few countries. To ensure that the relationship between CSR information and analyst forecast accuracy is truly an international pattern, we estimate model (3) separately for each country without the country-level variables. Such an analysis is constrained in statistical power by the small number of reporting firm-years in many individual countries. To overcome this problem, we rank the countries based on the value of *STAKE* from the highest to the lowest and then consecutively divide every three countries into a group, except that the U.S. alone forms one group. Then we also estimate model (3) within each of the total 11 groups.

Table 5 presents the results. The coefficient on *NONFIN* is significantly negative at $p \leq 10$ percent in 12 out of the 31 countries. This shows that the findings presented in Table 4 are a firm-level, international phenomenon in the sense that stand-alone CSR reports provide information for analysts to forecast earnings across multiple countries. When we divide the sample into three-country groups in the order of values of *STAKE* and estimate model (3), *NONFIN* is significantly negative in eight of the 11 groups, with the three insignificant groups having the first, third, and fourth smallest values in *STAKE* (i.e., they are among the most shareholder-oriented countries). Hence, the evidence supports that the association between CSR reporting and analyst forecast accuracy is present across various countries and such relationship covaries with the country's relevant institutional environment.

The U.S. has a positive, albeit insignificant, coefficient. The insignificant average effect of CSR disclosure in the U.S. is consistent with U.S. firms placing a lower emphasis on CSR activities and disclosure over our sample period. For instance, Table 3 shows that the U.S. is ranked among the lowest in terms of fraction of firms issuing stand-alone CSR reports, proportion of CSR reports being assured, and the average length of the CSR reports. These results are consistent with Simnett et al.'s (2009) finding that the U.S. has a much lower rate of assurance of CSR reports. As such, the CSR disclosures in the U.S. on average are likely less informative and, hence, less relied on by analysts than in many other countries. Nonetheless, this result is seemingly inconsistent with that in Dhaliwal et al. (2011). Specifically, in supplementing their tests on the relationship between CSR reporting and cost of equity capital, Dhaliwal et al. (2011) find a negative association between the initiation of CSR reporting and analyst forecast error in the U.S. setting. The seemingly inconsistent result is mainly due to sampling differences. While we focus on the average effect of CSR disclosure across all firms, Dhaliwal et al.'s (2011) sample only includes firms covered by the KLD (now part of MSCI) database. The KLD-covered firms are relatively large compared to the rest of the population of publicly listed firms. Noting this, we conjecture that CSR reports are likely more informative for large firms than for small firms in predicting their future financial performance because larger firms are more stable and have more supplemental information to make the CSR disclosure useful. Consistent with our conjecture, when we partition our sample into two subsamples depending on whether the firm is covered by the KLD database and estimate model (3) in each subsample, we find that in the KLD-covered subsample ($N(NONFIN = 1) = 942$, $N(NONFIN = 0) = 16{,}649$), *NONFIN* is significantly negative (Coeff. $= -2.420$, $p = 0.06$). This result is consistent with that in Dhaliwal et al. (2011). In contrast, in the subsample not covered by the KLD ($N(NONFIN = 1) = 230$, $N(NONFIN = 0) = 28{,}269$), *NONFIN* is positive, albeit insignificant (Coeff. $= 2.935$, $p = 0.65$).

TABLE 5

Country-by-Country Analysis (Ranked by *STAKE*)
Dependent Variable = *FERROR*(*0*)

Country	No. of Firm-Year Obs.	No. of CSR Reporting Firm-Years	*STAKE*	By Country		By Every Three Countries	
				Coeff.	t-stat	Coeff.	t-stat
Denmark	752	122	2.95	−1.766**	−2.26		
Sweden	1,398	219	2.90	−0.349	−0.61	−1.039***	−2.51
Norway	878	72	2.62	−0.581	−0.83		
Finland	925	191	1.89	−0.499	−1.00		
Australia	3,034	362	1.58	−1.272***	−3.66	−0.752**	−2.06
The Netherlands	1,328	162	1.52	−1.135	−1.50		
Switzerland	1,168	193	1.34	−0.273	−0.75		
Belgium	644	38	1.29	−2.743**	−2.15	−1.314***	−2.76
Austria	368	36	1.25	−1.773	−1.20		
France	2,950	324	1.12	−1.585***	−3.13		
Germany	2,869	369	0.81	−0.451	−1.06	−0.616***	−3.44
New Zealand	544	48	0.64	−1.348	−1.46		
Canada	5,732	233	0.56	−1.023**	−2.27		
U.K.	9,950	997	0.47	−0.869**	−1.96	−0.907***	−4.87
Italy	1,172	169	−0.09	−0.950	−1.54		
Portugal	209	40	−0.29	−0.481	−0.30		
Greece	535	31	−0.33	−2.165*	−1.78	−1.824***	−3.18
Spain	917	162	−0.42	−1.910***	−2.84		
Singapore	734	19	−0.59	−1.061	−0.70		
Chile	553	22	−0.88	−3.030**	−2.09	−0.464***	−2.82
Japan	22,104	1,669	−0.95	−0.401**	−2.40		
Hong Kong	1,674	36	−1.11	−1.212	−1.21		
South Africa	1,051	174	−1.42	−0.267	−1.16	−0.514	−1.21
Mexico	778	24	−1.47	−1.585	−1.40		
U.S.A.	46,090	1,172	−1.55	0.078	0.80	0.078	0.80
Korea	919	71	−1.57	−0.761*	−1.69		
Malaysia	1,608	8	−1.76	−1.593	−1.01	−1.328**	−2.31
Brazil	827	105	−1.92	−1.989**	−2.35		
Philippines	216	6	−1.93	−2.920	−1.01		
Thailand	822	10	−1.96	−2.398	−1.11	−0.950	−1.02
India	596	24	−2.73	−0.473	−0.63		
Total	113,345	7,108					

*, **, *** Indicate that the estimated coefficients are statistically significant at the 10 percent, 5 percent, and 1 percent levels, respectively, in two-tailed t-tests based on robust standard errors. Coeff. is the coefficient on *NONFIN* in our baseline model. All firm-level continuous variables are winsorized at the 1st and the 99th percentiles. The coefficients have been multiplied by 100. All variables are defined in Table 2.

CSR Disclosure and the Relationship between Current Stock Returns and Future Earnings

If CSR disclosures contain information about the future financial performance of firms and analysts communicate that information to investors through their earnings forecasts, then we expect current stock returns to incorporate more information about future earnings when firms are more transparent in CSR disclosure. To test this conjecture, we follow Collins et al. (1994) and Lundholm and Myers (2002) and estimate the following model:

$$\begin{aligned} RET_{i,t} = {} & \beta_0 + \beta_1 E_{i,t-1} + \beta_2 E_{i,t} + \beta_3 E_{i,t3} + \beta_4 RET_{i,t3} + \beta_5 NONFIN_{i,t} + \beta_6 NONFIN_{i,t} \times E_{i,t-1} \\ & + \beta_7 NONFIN_{i,t} \times E_{i,t} + \beta_8 NONFIN_{i,t} \times E_{i,t3} + \beta_9 NONFIN_{i,t} \times RET_{i,t3} \\ & + \beta_{10} Control_{i,t} + \beta_{11} Control_{i,t} \times E_{i,t-1} + \beta_{12} Control_{i,t} \times E_{i,t} \\ & + \beta_{13} Control_{i,t} \times E_{i,t3} + \beta_{14} Control_{i,t} \times RET_{i,t3} + \varepsilon_{i,t}, \end{aligned} \quad (4)$$

where $RET_{i,t}$ is the buy-and-hold return over the one-year period from January to December in year t for firm i; $RET_{i,t3}$ is the buy-and-hold return calculated over the three years from year t+1 to year t+3; $E_{i,t}$ equals income before extraordinary items divided by the market value of equity; and $E_{i,t3}$ is firm i's total scaled net income (E) over the three years from year t+1 to year t+3. Following Lundholm and Myers (2002) and Hanlon et al. (2007), we separately control for several factors that are likely to affect the returns-earnings relationship, including firm size (*SIZE*), number of analysts (*ANANO*), and dividend (*DIV*). Consistent with Hanlon et al. (2007), *DIV* is an indicator variable that equals 1 if the common dividend payment of the firm during the year is greater than 0, and 0 otherwise. Other variables are as defined in Table 2.

We perform the regression using only the data of CSR-reporting firms, such that the control group consists of the same firm's non-reporting years.[17] Table 6 presents the empirical results (subscript i omitted for all variables). The finding for our baseline model in column I is consistent with that of prior research (Lundholm and Myers 2002) in terms of signs and significance levels. In all model specifications, our main variable of interest, the interaction term $NONFIN_{i,t} \times E_{i,t3}$, has a positive coefficient that is significant at $p \leq 5$ percent, indicating that CSR disclosure is associated with a stronger relationship between current stock returns and future earnings. In other words, CSR disclosure appears to accelerate the incorporation of future earnings information into the current stock price.

VI. ROBUSTNESS TESTS

Tests within CSR-Reporting Firms and a Matched Sample

The advantages of using the pooled cross-sectional time-series sample are greater variation of variables and greater power of statistical tests due to the large sample. The disadvantage is that the control group may not be appropriate because we may fail to consider certain firm characteristics that differ between reporting and non-reporting firms. To alleviate this concern, we include several variables to control for potential confounding factors at the firm level and country level in our main tests above. As an additional robustness check, we estimate our regressions using only observations of CSR-reporting firms. In this specification, each reporting firm serves as its own control during the non-reporting period. Untabulated results are similar to those reported in Table 4.

Further, we perform a matched-sample analysis. Specifically, we match each firm-year with a CSR report with a non-reporting firm from the same country and industry closest in firm size in that year. The univariate comparison (untabulated) shows that the treatment group has significantly

[17] Using the pooled sample including both reporting and non-reporting firms yields similar results.

TABLE 6

CSR Disclosure and Future Earnings Response Coefficient
Dependent Variable = RET_t

	Pred. Sign	I	II	III Control = *SIZE*	IV Control = *ANANO*	V Control = *DIV*
Intercept		0.004	−0.002	0.109***	−0.025*	−0.049***
		(0.93)	(−0.29)	(4.97)	(−1.77)	(−4.76)
E_{t-1}	−	−0.076***	−0.062***	−0.173***	−0.180***	−0.043***
		(−8.01)	(−5.61)	(−3.23)	(−6.13)	(−2.91)
E_t	+	0.077***	0.055***	0.054	0.221***	0.045**
		(6.91)	(4.02)	(0.84)	(5.80)	(2.18)
E_{t3}	+	0.020***	0.013***	−0.001	0.014	−0.001
		(6.20)	(3.33)	(−0.01)	(1.22)	(−0.02)
RET_{t3}	−	−0.092***	−0.112***	−0.056	−0.091**	−0.118***
		(−7.19)	(−7.87)	(−1.00)	(−2.26)	(−5.18)
NONFIN	?		−0.012	−0.005	−0.002	−0.017
			(−1.23)	(−0.49)	(−0.18)	(−1.75)
NONFIN × E_{t-1}	?		−0.027	−0.032*	−0.024	−0.020
			(−1.52)	(−1.81)	(−1.32)	(−1.25)
NONFIN × E_t	?		0.049**	0.034	0.031	0.040*
			(2.35)	(1.61)	(1.40)	(1.92)
NONFIN × E_{t3}	+		0.012**	0.014**	0.011*	0.011*
			(1.95)	(2.22)	(1.65)	(1.95)
NONFIN × RET_{t3}	?		0.075***	0.097***	0.092***	0.081***
			(2.57)	(3.26)	(2.64)	(2.78)
CONTROL	?			−0.013***	0.009	0.063***
				(−5.16)	(1.86)	(5.68)
CONTROL × E_{t-1}	?			0.013**	0.036***	−0.036**
				(2.14)	(4.09)	(−2.05)
CONTROL × E_t	?			0.001	−0.047***	0.011
				(0.10)	(−4.41)	(0.49)
CONTROL × E_{t3}	+			0.001	−0.001	0.019**
				(0.55)	(−0.16)	(2.61)
CONTROL × RET_{t3}	?			−0.008	−0.012	0.012
				(−1.15)	(−0.80)	(0.45)
Adj. R^2		0.0199	0.0222	0.0249	0.2854	0.2656
n (*NONFIN* = 1)		5,863	5,863	5,863	5,863	5,863
n (*NONFIN* = 0)		12,896	12,896	12,896	12,896	12,896

*, **, *** Indicate that the estimated coefficients are statistically significant at the 10 percent, 5 percent, and 1 percent levels, respectively, in two-tailed t-tests based on robust standard errors. All other variables are defined in Table 2.

Variable Definitions:
RET_t = buy-and-hold return over the one-year period from January to December in year t;
RET_{t3} = buy-and-hold return calculated over the three years from year t+1 to year t+3;
E = income before extraordinary items divided by the market value of equity;
E_{t3} = sum of scaled net income (E) over the three years from year t+1 to year t+3; and
DIV = an indicator variable that equals 1 if the common dividend payment of the firm during the year is greater than 0, and 0 otherwise.

smaller forecast errors in all three horizons than the control group. Regression results (untabulated) are similar to those in Table 4, Panel A.[18]

Self-Selection and Two-Stage Regressions

As discussed earlier, firms that have more transparent financial disclosure policies could also have better nonfinancial disclosure, thus causing a self-selection problem for CSR reporting. Even though we argue in Section II that nonfinancial disclosure has its distinct economic determinants and consequences and we control for numerous factors associated with financial disclosure policies and also perform within-reporting-firm tests, it still might be the case that the controls are not adequate. As such, we also perform the Heckman (1976) two-stage estimation to provide additional evidence of the robustness of our results.

For the first-stage estimation, we select the following variables as the instruments based on prior research of CSR disclosure decisions. *CSRP* takes a value of 1 if the company is included in the Dow Jones Sustainability Index (DJSI), suggesting better CSR performance than non-DJSI firms, in any year, and 0 otherwise. Firms with better social performance are more likely to make disclosures to differentiate themselves from other companies and gain competitive advantages (Al-Tuwaijri et al. 2004; Dhaliwal et al. 2011). Leverage (*LEV*) captures the information demand by debtholders who are particularly concerned about firms' downside risk (Goss and Roberts 2009; Simnett et al. 2009). We include *ROA* because profitable firms have more financial resources for CSR activities and CSR disclosures than less profitable firms (Roberts 1992; Orlitzky et al. 2003). Following Dhaliwal et al. (2011), we further include the level of R&D activity (*R&D*) and capital expenditure (*CAPX*). Firm age (*AGE*) is included to capture firm reputation and past CSR performance (Roberts 1992). Finally, we use market share (*MKTSHR*), measured by a firm's fraction of sales in its industry, to measure a company's visibility and public pressure for performance CSR activities (Spar and LaMure 2003).

Other than the instruments, we include the following control variables (defined in Table 2): analyst following (*ANANO*), earnings uncertainty (*VAREARN*), financial opacity (*FFIN*), firm size (*SIZE*), and stakeholder orientation (*STAKE*).[19]

Untabulated results reveal that, in the first-stage probit-model regression, most variables have the predicted sign and are statistically significant, with *CAPEX* as the only exception. In the second-stage, the inverse Mills ratio (*MILLS*) is added to the full regression model to control for potential selection bias due to omitted correlated variables. Our main results for the three hypotheses are similar to those reported in Table 4.

Mandatory CSR Reporting

As summarized in Appendix A, several countries mandated CSR reporting during our sample period. Nonetheless, under a mandatory reporting regime, firms do not have to report on their CSR activities through *stand-alone* CSR reports, as they can incorporate this information into other filings. There is also no stipulation on the extent of detail of the disclosure. Still, it is possible that firms are more likely to issue stand-alone reports when they are required to prepare a portion of the information that would be included in a stand-alone report. Mandatory reporting could also enhance the credibility of the stand-alone reports and, hence, improve their informativeness. To investigate whether our results are driven by mandatory reporting, we estimate our regression models by

[18] The only exception is that *NONFIN* × *FFIN* becomes statistically significant (negative) in all three forecast horizons.

[19] Using the individual components of *STAKE* and including country indicators do not qualitatively change our main results.

separately including observations from mandatory reporting regimes (in total, about 1,200 reports) and voluntary reporting regimes. Our main results (untabulated) are similar in both subsamples, albeit somewhat weaker for the mandatory reporting sample, possibly due to a significantly smaller sample size.[20]

Stakeholder Orientation versus Length and Credibility of CSR Reports

Our proxy for stakeholder orientation (*STAKE*) could potentially capture the effect of correlated characteristics of CSR reporting that affect analyst forecasts. Two prominent attributes of the CSR report are its length and whether the report is assured by a third party, which likely reflects the report's credibility (Simnett et al. 2009).[21] Longer reports are likely to contain more information and, hence, indicate greater transparency (Leuz and Schrand 2008). In addition, Hunton et al. (2006) suggest that the level of transparency likely reflects the reliability of the disclosure. Consequently, longer reports could be more useful to analysts. We define *HIPAGE* as an indicator variable that equals 1 if the number of pages of the firm's CSR report is greater than the median number of pages in all CSR reports published in the firm's country in the same year, and 0 otherwise.[22]

As for assurance, Hobson and Kachelmeier (2005) suggest that managers have incentives to distort disclosures, while Simnett et al. (2009) find evidence suggesting that the use of assurance services is related to the incentive of firms to increase the credibility of their CSR reporting. More credible reports are likely to be more informative to analysts (Teoh and Wong 1993; Wilson 2008). We define *ASSURANCE* as an indicator variable that equals 1 if the firm's CSR report in the year is assured by a third party, and 0 otherwise.

We include in our full regression model (as in column III of Table 4, Panel A) two additional interactions: $NONFIN \times HIPAGE$ and $NONFIN \times ASSURANCE$. Untabulated results show that, the interaction term for *HIPAGE* is significantly negative for *FERROR*(*1*) and *FERROR*(*2*) as the dependent variable, and is marginally significantly negative for *FERROR*(*0*) (Coeff. $= -0.231$, $p = 0.14$). However, *NONFIN* $\times$ *ASSURANCE* is not significant in any of the three forecasting horizons. Most importantly, our main interest variable, *NONFIN* $\times$ *STAKE*, continues to be statistically significant with the inclusion of the above two new interaction terms, suggesting that *STAKE* is not simply measuring reporting attributes of firms from countries with different degrees of stakeholder orientation.

Other Robustness Tests

The U.S. has the greatest number of observations and Japan has the highest number of CSR reports in our sample. To ensure that our results are not driven by these two countries, we exclude

[20] Specifically, in the voluntary reporting regime, the coefficients used to test H1 to H3 are all significant at $p \leq 10$ percent, with the only exception that *NONFIN* $\times$ *FFIN* is not significant (Coeff. $= 0.037$, $p = 0.62$) for *FERROR*(*2*). In the mandatory reporting regime, tests for H1 are significant at $p \leq 10$ percent in all three forecast horizons. In the test of H2, $NONFIN \times STAKE$ is significant at $p \leq 10$ percent (Coeff. $= -0.113$) for *FERROR*(*2*), and has a p-value of 0.22 (Coeff. $= -0.028$) and 0.74 (Coeff. $= -0.014$) for *FERROR*(*0*) and *FERROR*(*1*), respectively. For H3, $NONFIN \times CFIN$ is significant at $p \leq 10$ percent in all three forecast horizons, However, $NONFIN \times FFIN$ is only significant at $p \leq 10$ percent for *FERROR*(*0*) and *FERROR*(*1*) and it has a p-value 0.37 (Coeff. $= 0.055$) for *FERROR*(*2*).

[21] However, if the length of CSR report and the third-party assurance capture the construct of the degree of stakeholder orientation, including the interaction of these two factors with *NONFIN* would weaken the significance level of $STAKE \times NONFIN$.

[22] Using the number of pages instead of *HIPAGE* provides similar results for *FERROR*(*0*) and *FERROR*(*2*) (see subsequent discussion), but the interaction of *NONFIN* and the number of pages is not significant for *FERROR*(*1*): Coeff. $= -0.003$, $p = 0.36$.

both Japan and the U.S. from our sample. Moreover, a portion of our CSR reports are mainly about environmental issues. To examine whether our main results hold for non-environmental CSR disclosure, we exclude all CSR reports that have a title indicating that they are primarily about environmental issues. Alternatively, we exclude all firms from the chemicals and utilities industries, which are prone to have environmental issues. With all these variations, we obtain results similar to those reported in Table 4. Actually, an industry-by-industry analysis (untabulated) shows that for our base model, in 13 out of the 23 industries, *NONFIN* is significantly negative at $p < 0.10$.[23] Further, prior research shows that analyst characteristics such as experience, portfolio complexity, and location affect forecast accuracy. To isolate these analyst fixed effects, we adopt a matching design. Specifically, for each analyst who is covering a firm-year that reports CSR, we find a firm that does not report CSR from the same country and industry closest in firm size in that year and covered by the same analyst. Both univariate and regression analyses (untabulated) show that the CSR reporting firms have lower forecast errors.

We additionally control for several other country-level variables. First, following Hope (2003), we include two proxies for country cultures: country uncertainty avoidance index (*UNCERTAINTY*) and country individualism index (*INDIVIDUALISM*), both from Hofstede (1980). Second, we include the country-level relative importance of the stock market (*DOMESTIC*), namely, the number of publicly listed domestic firms divided by population (from La Porta et al. 1997). Third, we follow Morck et al. (2000) to calculate a measure of the extent to which a country's stock prices covary with the market index (*SYNCHRONICITY*). Morck et al. (2000) suggest that countries with stronger co-movement patterns have a poorer information environment. Fourth, Libby et al. (2006) show that management guidance affects analyst forecasts. We therefore include an indicator variable, *FORECAST*, signifying whether the firm issued at least one management forecast in the year to proxy for firms' transparency in voluntary financial disclosure. The inclusion of these variables significantly reduces our sample size. Still, our main results (untabulated) remain similar to those reported in Table 4.

VII. CONCLUSION AND FUTURE RESEARCH

We examine whether the disclosure of a comprehensive set of nonfinancial information, as proxied by the publication of stand-alone corporate social responsibility (CSR) reports, is associated with improved earnings forecast accuracy by financial analysts. After controlling for various potentially confounding factors, we find that the issuance of CSR reports is significantly negatively associated with analysts' earnings forecast errors. Further tests reveal that this association is stronger among countries that are more stakeholder-oriented, for which social performance likely has a greater impact on firm financial performance. In addition, the association is also stronger among reporting companies with greater opacity in financial disclosure. Overall, our results suggest that nonfinancial disclosure is not only associated with a better information environment, as measured by analyst forecast accuracy, but also complements financial disclosure by mitigating the negative effect of financial opacity on forecast accuracy. These findings have implications for academics and practitioners in their understanding of the role played in financial markets by CSR disclosure, which has become increasingly popular in recent years. Our findings

[23] The industries with significant estimate on *NONFIN* include, Mining/Construction, Food, Chemicals, Pharmaceuticals, Extractive, Manufacturing: Rubber/glass/etc. Manufacturing: Metal, Manufacturing: Machinery, Manufacturing: Transport Equipment, Transportation, Utilities, Retail: Misc, and Others. Insignificant industries include: Textiles/Print/Publish, Manufacturing: Electrical Equipment, Manufacturing: Instruments, Manufacturing: Misc, Computers, Retail: Wholesale, Retail: Restaurant, Financial, Insurance/Real Estate, and Services.

also show that social norms and practices are associated with the nature of the information environment, implying that uniform financial standards as well as the integration of nonfinancial and financial reporting are not necessarily beneficial to investors in all countries.

Several caveats are in order. It is possible that we do not include all stand-alone CSR reports, such that the control group could include some firms with CSR disclosure. Such reports could be included in stale (and unknown) websites. This potential misclassification of firms into the control group instead of the treatment group would introduce noise and would likely bias against our findings. Further, if supply-side factors such as firms' general disclosure policies dominate demand-side factors, such as stakeholders' demand for CSR information, then it is possible that financial and nonfinancial disclosures are correlated. Even though we address this issue by (1) including several variables to control for potential confounding factors, especially those related to financial transparency, (2) conducting analyses within the reporting firms, and (3) employing the Heckman two-stage procedure to correct for the potential endogeneity, to the extent that these procedures are not exhaustive, one should be cautious in drawing causal inferences.

Overall, we believe that the association between the provision of CSR-related information and improvements in forecast accuracy is an important first step that we hope will spur future research into how analysts incorporate relevant information in their forecasts and the pathways/mechanisms that help them to do so. For example, future research can examine how analysts incorporate CSR-related information in their forecasting models, and specifically investigate the type of information that is useful for forecasting. Ioannou and Serafeim (2010) show that analysts are more likely to issue buy recommendations for firms with CSR reporting in the U.S. Noting that analyst recommendations provide incremental information to earnings forecasts, a related question is: Do CSR-related disclosures help enhance the mapping of earnings forecasts to recommendations? On the analyst side, given that the CSR disclosure is still largely unregulated in format and content, how well analysts use CSR information in their forecasting could depend on experience and ability. Global brokerage houses are likely to help propagate the synergy effect: analysts in countries where CSR activities are still nascent are likely to learn from their peers in countries where CSR activities are more mature (such as stakeholder-oriented countries) as to how to incorporate information on CSR-related activities in their forecasting models.[24]

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[24] One analogy of such a synergy effect is industry specialization by global audit firm networks (Carson 2009).

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APPENDIX A[a]

Country Variables

Panel A: *STAKELAW*, *CSRLAW*, and *PUBAWARE*

		STAKELAW				*CSRLAW*[b]	*PUBAWARE*	
	Country	Employment Laws	Social Security Laws	Collective Relations Laws	Human Rights	CSR Reporting Legislation	No. of CSR Reports per Million Population	NGOs per Million Population
1	Australia	0.35	0.78	0.37	91	2	60.72	196
2	Austria	0.50	0.71	0.36	95	1	25.54	529
3	Belgium	0.51	0.62	0.42	96	2	22.49	541
4	Brazil	0.57	0.55	0.38	69	0	1.45	18
5	Canada	0.26	0.79	0.20	94	1	25.83	133
6	Chile	0.47	0.69	0.38	80	0	6.05	140
7	Denmark	0.57	0.87	0.42	98	2	55.98	914
8	Finland	0.74	0.79	0.32	99	0	70.97	829
9	France	0.74	0.78	0.67	94	2	9.29	118
10	Germany	0.70	0.67	0.61	98	1	14.04	75
11	Greece	0.52	0.74	0.49	87	0	6.98	355
12	Hong Kong	0.17	0.81	0.46	—	0	13.15	4
13	India	0.44	0.40	0.38	54	0	0.05	3
14	Italy	0.65	0.76	0.63	90	1	14.42	98
15	Japan	0.16	0.64	0.63	82	0	13.82	28
16	Korea	0.45	0.68	0.54	59	0	2.05	45
17	Malaysia	0.19	0.20	0.19	61	0	1.14	83
18	Mexico	0.59	0.51	0.58	64	0	0.45	27
19	The Netherlands	0.73	0.63	0.46	98	1	36.37	392
20	New Zealand	0.16	0.72	0.25	98	0	46.90	687
21	Norway	0.69	0.83	0.65	97	1	76.47	918
22	Philippines	0.48	0.48	0.51	72	0	0.22	26
23	Portugal	0.81	0.74	0.65	92	0	12.49	390

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APPENDIX A (continued)

		STAKELAW				*CSRLAW*[b]	*PUBAWARE*	
	Country	Employment Laws	Social Security Laws	Collective Relations Laws	Human Rights	CSR Reporting Legislation	No. of CSR Reports per Million Population	NGOs per Million Population
24	Singapore	0.31	0.46	0.34	60	0	9.37	477
25	South Africa	0.32	0.58	0.54	50	0	6.78	67
26	Spain	0.74	0.77	0.59	59	0	13.83	134
27	Sweden	0.74	0.84	0.54	98	2	53.48	559
28	Switzerland	0.45	0.82	0.42	96	0	66.80	673
29	Thailand	0.41	0.47	0.36	62	0	0.79	29
30	U.K.	0.28	0.69	0.19	93	2	38.90	128
31	U.S.A.	0.22	0.65	0.26	90	0	6.23	22

Panel B: *PUBAWARE1*, *CFIN*, and *ENFORCE*

		PUBAWARE1				*CFIN*		*ENFORCE*	
	Country	Sustainable Development Priority	Socially Responsible Leadership	Ethical Practice Implementation	Corporate Responsibility Competitiveness	CIFAR 91 and 93	CIFAR 95	Public Enforce	Legal Enforce
1	Australia	7.02	6.32	7.77	68.1	79.44	80	0.90	9.50
2	Austria	7.92	7.15	7.34	68.5	56.18	62	0.17	9.40
3	Belgium	6.66	6.11	6.74	67.9	69.00	68	0.15	9.40
4	Brazil	6.00	5.38	5.79	53.9	55.33	56	0.58	6.10
5	Canada	6.82	6.66	7.75	64.1	74.15	75	0.80	9.80
6	Chile	6.62	6.06	6.81	56.0	64.50	78	0.60	6.50
7	Denmark	7.89	7.40	7.88	73.9	73.25	75	0.37	10.00
8	Finland	7.74	7.06	7.88	78.0	79.67	83	0.32	10.00
9	France	6.28	5.84	6.53	64.8	77.67	78	0.77	8.70
10	Germany	7.20	6.08	7.05	66.2	66.42	67	0.22	9.10
11	Greece	5.91	4.85	5.22	58.0	63.33	61	0.32	6.40
12	Hong Kong	6.48	5.60	6.66	56.8	73.00	73	0.87	8.90
13	India	5.96	4.98	5.07	53.4	56.94	61	0.67	5.58

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APPENDIX A (continued)

		PUBAWARE1				*CFIN*		*ENFORCE*	
	Country	**Sustainable Development Priority**	**Socially Responsible Leadership**	**Ethical Practice Implementation**	**Corporate Responsibility Competitiveness**	**CIFAR 91 and 93**	**CIFAR 95**	**Public Enforce**	**Legal Enforce**
14	Italy	4.99	4.55	4.65	60.4	68.09	66	0.48	7.10
15	Japan	7.18	5.73	6.21	60.0	72.48	71	0.00	9.20
16	Korea	6.84	5.24	5.29	51.6	64.33	68	0.25	5.60
17	Malaysia	7.28	6.13	6.26	58.4	76.27	79	0.77	7.72
18	Mexico	5.42	4.72	4.94	53.9	69.67	71	0.35	5.37
19	The Netherlands	7.32	6.86	7.62	69.5	72.78	74	0.47	10.00
20	New Zealand	6.90	6.56	7.93	68.9	77.75	80	0.33	10.00
21	Norway	7.61	6.95	7.42	73.9	76.87	75	0.32	10.00
22	Philippines	5.80	5.60	5.33	—	67.63	64	0.83	3.47
23	Portugal	5.25	4.50	5.15	60.2	54.25	56	0.58	7.20
24	Singapore	8.14	6.63	7.42	58.1	75.08	79	0.87	8.93
25	South Africa	6.23	6.27	6.33	55.9	76.00	79	0.25	6.40
26	Spain	5.77	5.04	5.44	65.5	65.38	72	0.33	7.10
27	Sweden	7.36	7.00	7.64	74.7	83.65	83	0.50	10.00
28	Switzerland	7.51	6.45	7.53	75.8	76.10	80	0.33	10.00
29	Thailand	6.38	5.58	5.63	58.3	—	66	0.72	4.89
30	U.K.	5.87	5.40	6.84	69.0	83.49	85	0.68	9.20
31	U.S.A.	6.35	6.00	7.15	59.4	75.82	76	0.90	9.50

[a] Sustainable Development Priority (Ethical Practice Implementation) is an index ranging from 0 to 10 based on the Institute for Management Development (IMD) World Competitiveness Yearbook Executive Opinion Annual Survey conducted each year during the 2000–2007 period, which inquires as to whether sustainable development is a priority in companies (whether ethical practices are implemented in companies). We use the mean score for each country; a higher one indicates that sustainable development (ethical practice implementation) is a greater priority. Socially Responsible Leadership is also an index ranging from 0 to 10 based on the IMD Annual Surveys for the 1996–2007 period, which inquires as to the level of perceived social responsibility of business leaders; a higher score indicates a higher level of perceived social responsibility of business leaders. The Corporate Responsibility Competitiveness index is based on the National Corporate Responsibility Index 2003, which is published by AccountAbility, an international professional institute promoting social accountability. This index comprises seven different dimensions to measure the national level of corporate social responsibility. Details of the seven CSR dimensions can be found at http://www.accountability.org. All other variables are defined in Table 2.

[b] The countries requiring both financial and industrial companies to disclose on CSR issues include: Australia, Belgium, Denmark, France, Sweden, and the U.K. Austria, Canada, Germany, and Italy only require financial firms to make such disclosure. The Netherlands and Norway have the rule for industrial firms. (Data sources: government websites, KPMG International Survey of CSR Reporting, *The Handbook of International Corporate Governance* [2nd edition], published by the Institute of Directors; articles published by the Organization for Economic Co-Operation and Development [OECD], CSR Europe, and the Shareholder Association for Research and Education [SARE]).