

Board Gender Diversity and Dimensions of Corporate Social Responsibility

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Abstract

This study investigates the association between board gender diversity and various dimensions of CSR. We develop a theoretical framework, where specific dimensions of CSR have various predicted associations with board gender diversity. Our empirical results show that board gender diversity has an impact on the following CSR dimensions: community, diversity, employees, and environment. Our findings support the notion that women exhibit more communal traits, demand more CSR information before they take investment decisions, and are more concerned about stakeholders than their male counterparts. Our results also contribute to the current “push” for greater gender diversity of boards by regulators and policy makers, as we demonstrate some of the benefits associated with board gender diversity.

Keywords: CSR, gender, board, diversity

1. Introduction

Over the last decade or so there has been an ever stronger move by regulators and policy makers towards encouraging greater gender diversity on boards of directors around the world (Note 1). In response, the academic literature has aimed to provide evidence on the economic consequences of board gender diversity. For example, researchers have provided evidence on the association between board gender diversity and M&A activities, quality of accounting disclosure, and firm performance (Levy et al., 2014; Srinidhi et al., 2011; Adams & Ferreira, 2009). More recently Zhang et al. (2013) have provided some evidence on board composition and aggregate measures of corporate social responsibility (CSR). Our objective is to build on their research and significantly extend it by (1) developing a theoretical framework, where specific dimensions of CSR have various predicted associations with board gender diversity, and (2) to provide empirical evidence supporting our predictions related to these associations.

Our motivation is threefold. First, while there are a number of conceptual approaches towards analyzing the economic consequences of CSR, we are not aware of any that would enable us to predict an association between specific dimensions of CSR and board gender diversity. Our approach is based on the notion that a firm is a nexus of contracts (Jensen & Meckling, 1976). We extend this idea to a global setting where the contracting parties are located in different countries and operate under different legal jurisdictions with different CSR legislation and policies. This setting enables us to derive predictions for the association between specific dimensions of CSR and board gender diversity.

Second, Adams & Ferreira (2009) provide detailed evidence on both the input and output of female directors relative to their male counterparts. Their results indicate that while female directors contribute greater input in terms of attending meetings and serving on board subcommittees, there is no association between board gender diversity and CEO compensation. Further, Adams & Ferreira (2009) do not find statistically reliable evidence between board gender diversity and firm performance. Hence their result provides limited support for board gender diversity in terms of output (or economic consequences). These results contrast with the findings of Levy et al. (2014) and Gul et al. (2011), among others, who find that board gender diversity matters in terms of M&A activities and stock price-impacting information. Our claim is that board gender diversity matters, but not with respect to all board decisions; instead, it matters in those cases where female versus male attributes matter. In our

view, CSR is such a setting; hence we provide evidence on the association between board gender diversity and dimensions of CSR.

Our third motivation is to bring together two different streams of research. On the one hand Zhang et al. (2013) provide evidence on the association between board gender diversity and aggregate measures of CSR for the post-Sarbanes-Oxley period, based on 516 observations. On the other, Krueger (2014) provides evidence based on 2,417 publicly listed US firms announcement effects of different types of CSRs, and an aggregate measure of CSR. His results suggest that diversity and human rights do not have statistically reliable market reactions while the overall measure and the other four categories of CSR (community, employees, environment, product) do. We bring these two streams of literature together and provide evidence for the association between all dimensions of CSR and board gender diversity for the period 1996-2012 for 15,995 firm years. Following prior studies we use CSR performance data from the Morgan Stanley Capital International Kinder, Lydenberg and Domini (MSCI KLD) database.

Our findings indicate that there is a statistically significant positive association between board gender diversity and an overall measure of CSR. We also find associations between board gender diversity and CSR in the community, diversity, employee relations and environment dimensions. These findings are consistent with our theory development and predictions. As predicted, we do not find any association between board gender diversity and human rights, or between board gender diversity and product characteristics. Our main results are confirmed by a subsample of firms based on a propensity score matching design, as well as by a number of robustness tests.

This paper contributes to the literature in several ways. First, we build a comprehensive framework to demonstrate under what conditions, and through which transmission channels, CSR can influence shareholder value. Our sample is the first to use a large sample of U.S. listed firms which operate in different countries and under different legal jurisdictions with different CSR legislations and policies. Second, our paper is grounded on the work of Zhang et al. (2013) but extends their analysis by i) using both an aggregate measure of CSR as well as a number of different dimensions of CSR to test which of them are associated with board gender diversity; ii) extending the time period of the empirical analysis from a single year to the period 1996-2012; and iii) developing a matched sample design to recognize the possibility of endogeneity and self-selection. That is, women may join boards with given firm characteristics and CSR policies. We find evidence that the CSR dimensions community, diversity, employees, and environment are positively associated with board gender diversity. This supports our claim that females exhibit more communal traits, demand more CSR information before taking investment decisions, and are more concerned about stakeholders than their male counterparts. Our results also contribute to the current “push” for greater gender diversity of boards by regulators and policy makers, as we demonstrate some of the benefits associated with board gender diversity.

This paper is organized as follows. In the next section we review the relevant literature and devise a number of testable hypotheses. Section 3 describes the sample and the data and experimental design. In the following section we report our key findings and some sensitivity tests. We conclude our findings in the final section.

2. Relevant Literature, Theory Development, and Hypotheses

2.1 Relevant Literature

There are a number of approaches from agency theory through stakeholder theory to corporate legitimacy that enable the analysis of CSR. From an agency theory perspective, within a single jurisdiction companies do not have CSR obligations as long as they write contracts that are consistent with the relevant laws and regulations. As Friedman (1970) observes, in such a uniform regulatory environment, firms (managers) have one obligation: to maximize shareholder wealth. Freeman’s stakeholder theory (Freeman, 1984) uses a contrary perspective, assuming that managers have to satisfy constituents that have an influence on firm success. Therefore it could be beneficial to engage in CSR, otherwise non-financial stakeholders could withdraw their support. However, none of the above theoretical approaches enable us to explicitly link board gender diversity with CSR. Accordingly, in the next section we develop a theoretical link between CSR and board gender diversity based on the idea that a firm is a nexus of contracts, but that the contracting parties operate in different jurisdictions with different CSR requirements.

Empirical studies on the economic consequences of board gender diversity have already addressed a number of corporate phenomena. For example, Gul et al. (2011) find that board gender diversity improves stock price informativeness, Srinidhi et al. (2011) document the association between female directors and earnings quality, and Bugeja et al. (2012) provide evidence of a link between a gender-diverse compensation committee of the board and CEO compensation. The empirical evidence on the economic consequences of CSR is proof of the

value relevance of CSR (Lopatta & Kaspereit, 2013), of the announcement effect of CSRs (Krueger, 2014) and of insider trading and CSR (Lopatta et al., 2015). Studies have also investigated the phenomenon of ethical investments and how companies are assessed according to social, environmental, and corporate governance criteria (Rockness & Williams, 1988; Cooper & Schlegelmilch, 1993; Anderson, 1996; Sparkes & Cowton, 2004). Furthermore, portfolio studies have investigated the financial returns of companies that act responsibly in comparison to companies that do not, and have compared both groups with a broader market portfolio (Moskowitz, 1972; Waddock & Graves, 1997; Orlitzky et al., 2003; Cox et al., 2004). Event studies have investigated the short-term effects of CSR engagement on the market values of firms (Rao & Hamilton, 1996; Filbeck et al., 1997) and find evidence of a correlation between social responsibility and financial performance (Griffin & Mahon, 1997; Waddock & Graves, 1997; Key & Popkin, 1998; Roman et al., 1999).

As far as we are aware, Zhang et al. (2013) is one of the few studies that provide direct evidence of a link between board gender diversity and CSR. Zhang et al. (2013) use an aggregate measure of CSR based on FAMA and KLD databases for 516 firms from 2007 and find that gender diversity is positively associated with CSR. We build on this study and extend it in a number of important ways. First, we use both an aggregate measure of CSR as well as various dimensions of CSR to test which of them are associated with board gender diversity. Second, we extend the time period of the empirical analysis from a single year to the period 1996-2012. Third, we develop a matched sample design to recognize the possibility of endogeneity and self-selection. That is, women may join boards with given firm characteristics and CSR policies

2.2 Theory Development and Hypotheses

We start our hypothesis development from the efficient contracting point of view based on Jensen & Meckling's (1976) agency theory. In this context, the firm is a "nexus of contracts", where there is an efficient contract between shareholders and management to minimize agency costs and maximize shareholder value. The firm also contracts with other parties including debt holders, suppliers, labor, and customers. All contracts are efficient in the sense that they minimize transaction costs by meeting the minimum regulatory and legal requirements set by the government in a specific jurisdiction. As Friedman (1970) has pointed out, in such a setting firms do not have CSR obligations, but governments do. It is up to the government to set out, through its policies, the overall social and environmental setting within which firms can contract. While this framework describes a single country with a single set of CSR policies, companies today operate in a "global village" where they contract with debt holders, suppliers, labor, and customers across many jurisdictions with different social and environmental policies. Hence, boards face a moral/ethical dilemma. Do they fulfil the highest social and environmental requirements across all jurisdictions, even if this could lower shareholder wealth, or do they choose to comply with each jurisdiction individually, which may stipulate lower CSR requirements?

In this setting, a firm can adopt a CSR policy with social and environmental standards that go beyond the minimum requirements of a specific jurisdiction if their home country's CSR standards are higher. We infer that board gender diversity in this global village setting may make a difference, as there is a difference between female and male board members' moral and social value systems (Eagly et al., 2003; Nielsen & Huse, 2010). Further, empirical evidence already suggests that board gender diversity is associated with greater sustainability reporting (Fernandez-Feijoo et al., 2013) and that female investors demand better CSR disclosure (Nath et al., 2013). This in turn suggests that gender diversity may also matter when it comes to CSR, hence we predict:

H1: There is a positive association between aggregate measures of CSR and board gender diversity.

However, even in the global village setting, not all CSR activities are influenced by board gender diversity. Accordingly, we hypothesize various associations between board gender diversity and dimensions of CSR, measured using the MSCI KLD database. MSCI KLD is widely used in capital market-based CSR research (e.g., El Ghouli et al., 2011; Dhaliwal et al., 2011). The MSCI KLD CSR ratings are split into seven qualitative areas, which are displayed in Table 1.

Table 1. Categories of strengths and concerns in the qualitative MSCI KLD rating

Community	Diversity	Employee Relations	Environment	Human Rights	Product Characteristics	Corporate Governance
Panel A: Strengths						
Charitable Giving	CEO¹	Union Relations	Beneficial Products and Services	Positive Record in S. Africa (1994-1995)	Quality	Limited Compensation²
Innovative Giving	Promotion¹	No-Layoff Policy (through 1994)	Pollution Prevention	Indigenous Peoples Relations Strength (from 2000)	R+D-Innovation	Ownership Strength²
Support for Housing	Board of Director¹	Cash Profit Sharing	Recycling	Labor Rights Strength (from 2002)	Benefits to Economically Disadvantaged	Transparency Strength²
Support for Education (from 1994)	Work-Life Benefits	Employee Involvement	Clean Energy	Human Rights Other Strength	Access to Capital	Political Accountability Strength (from 2005)²
Non-US Charitable Giving	Women and Minority Contracting	Retirement Benefits Strength	Property, Plant, Equipment (through 1995)	Product Other Strengths	Public Policy Strength	
Volunteer Programs (from 2005)	Employment of the Disabled	Health and Safety Strength	Management Systems Strength			Corp. Gov Other Strength²
Community Engagement (from 1995)	Gay and Lesbian Policies	Supply Chain Policies, Programs & Initiatives	Environment Other Strength			
Panel B: Concerns						
Investment Controversies	Controversies	Union Relations	Hazardous Waste	South Africa (1991-1994)	Product Safety	High Compensation²
Negative Economic Impact	Non-Representation¹	Health and Safety Concern	Regulatory Problems	Northern Ireland (1991-1994)	Marketing-Contracting Concern	Ownership Concern²
Tax Disputes	Board Diversity	Workforce Reductions	Ozone Depleting Chemicals	Burma Concern (from 1995)	Antitrust	Accounting Concern (from 2005)²
Community Other Concerns	Diversity Other Concerns	Retirement Benefits Concern	Substantial Emissions		Product Other Concerns	Transparency Concern (from 2005)²
		Supply Chain Controversies	Agriculture Chemicals	Labor Rights Concern (from 1998)		Political Accountability Concern (from 2005)²
		Emp. Relations Other Concerns	Climate Change (from 1999)	Indigenous Peoples Relations Concern (from 2000)		Public Policy Concern²
			Negative Impact of Products and Services	Operations in Sudan		Governance Structures Controversies²
			Land Use & Biodiversity	Human Rights Other Concerns		Corp. Gov Other Concerns²
			Non Carbon Releases			
			Environment Other Concerns			

Note. ¹Categories in bold italics were excluded from the calculation because they directly measure the presence of female directors or CEOs. ²In accordance with El Ghoul et al. (2011), Categories in bold italics were excluded because they measure CSR net of corporate governance issues.

There are a number of documented human and social traits attributed to women, which enables us to make predictions about the association between board gender diversity and dimensions of CSR when a firm contracts across different jurisdictions. At the company level, the propensity for greenhouse gas disclosure is positively

related to the proportion of female directors on the board (Liao et al., 2014). At the personal level, women exhibit more communal traits than men (Eagly et al., 2003) and demand more CSR-related information before they make investment decisions (Nath et al., 2013). In a household context, women are more likely to support recycling (McDonald & McDonald, 2006) and the environment (Freudenburg & Davidson, 2007). At the board level, women with academic or community service backgrounds are more likely to be elected to a board than their male counterparts (Terjensen et al., 2009). Furthermore, female board members are more likely to support female executives (Bilimoria, 2006) and are more concerned about other stakeholders (Nielsen & Huse, 2010) than their male counterparts. Finally, Williams (2003) finds that gender diversity is associated with larger corporate donations. We contend that all of these traits may have bearings on the contracting parties in a global village. Community-related CSR is associated with charitable and innovative giving, amongst other things; diversity-related CSR is related to equal opportunity employment, amongst other things; employee-related CSR is based on employee involvement in-amongst other things-health and safety issues, as well as recycling and environmental communications. Based on this, we formulate our second hypothesis as follows:

H2: There are positive associations between CSR in the community, diversity, employee, and environment dimensions and board gender diversity.

With respect to human rights-related CSR, having reviewed the social records of companies from Burma, Mexico, Northern Ireland, South Africa, as well as indigenous relations and other human rights issues, we have not been able to find any evidence to suggest that women or men are more concerned with this dimension of CSR. Human rights are a high-profile social issue in the US, evidenced by research over the last couple of decades and overclouded by recent incidents. For example, research was published by the National Bureau of Economic Research (2014) on two scholars who sent out nearly 5,000 resumes in response to help-wanted ads, randomly alternating between stereotypically “white-sounding” and “black-sounding” names. They found that job applicants with “black-sounding” names needed to send out 50 percent more resumes to get one callback. The benefit of having a “white name” equated to as much as eight years of experience, according to the study. Although there are many human rights issues in the U.S., we do not expect to find any relationship between board gender diversity and human rights; since both gender-diverse and non-gender-diverse boards comply with U.S. human rights laws. Hence we predict:

H3: There is no association between board gender diversity and human rights-related CSR.

With respect to product-related CSR, we find conflicting prior evidence on the likely impact of board gender diversity. On the one hand, there is evidence that women are more likely to be aware of consumer demand than men (Daily et al., 1999), and that they are more likely to seize global opportunities to meet that demand (Natividad, 2005; Mattis, 1993). On the other hand, the EOWA (2008) report found that male directors are more likely to accept female directors’ views on health and safety, environmental, and other HR issues. These findings are consistent with those of Sing et al. (2008), who find that men make more experience-related scientific and engineering decisions than women. Given the conflicting evidence, we predict that

H4: There is no association between product-related CSR and board gender diversity.

3. Sample and Data

Data for US listed firms between 1996 and 2012 were collected from the Morgan Stanley Capital International Kinder, Lydenberg and Domini (MSCI KLD), Investor Responsibility Research Center (IRRC), Compustat Fundamentals Annual, the Center for Research in Security Prices (CRSP), and Execucomp databases. All firm-years with sufficient data to estimate model (1) are included in the sample. IRRC provides an identifier for director’s gender only from 1997 to 2012, therefore we manually enter directors’ gender for all observations in 1996 based on the first name of the director, or, if the first name is inconclusive with respect to gender, verify it by means of a Google web search. Panel A in Table 2 provides a yearly breakdown of firms and descriptive statistics for our variable of interest, as well as the ratio of female directors to the total number of directors (FEM_DIR). Panel B does the same based on Fama-French 12 industries. (Note 2)

Table 1. Sample distribution

Year	FEM_DIR						
	Firms	Mean	Min	25%	Median	75%	Max
Panel A: Sample distribution by year.							
1996	422	7.40	0.00	0.00	7.69	11.11	28.57
1997	421	10.41	0.00	7.69	10.00	14.29	55.56
1998	424	9.84	0.00	6.07	10.00	14.29	55.56
1999	454	11.43	0.00	7.69	10.00	16.67	55.56
2000	466	11.59	0.00	7.69	11.11	16.67	55.56
2001	667	10.62	0.00	0.00	10.00	15.38	60.00
2002	701	11.33	0.00	7.14	11.11	16.67	55.56
2003	1,133	10.00	0.00	0.00	10.00	15.38	55.56
2004	1,192	10.38	0.00	0.00	10.00	16.23	55.56
2005	1,141	10.81	0.00	0.00	11.11	16.67	57.14
2006	1,158	11.29	0.00	0.00	11.11	17.65	57.14
2007	1,205	11.34	0.00	0.00	11.11	18.18	62.50
2008	1,279	11.69	0.00	0.00	11.11	18.18	50.00
2009	1,312	11.68	0.00	0.00	11.11	18.18	50.00
2010	1,324	11.92	0.00	0.00	11.11	18.18	50.00
2011	1,337	12.36	0.00	0.00	11.11	20.00	50.00
2012	1,359	13.00	0.00	0.00	12.50	20.00	50.00
Panel B: Sample distribution by Fama-French 12 industries.							
Consumer non-durables	1,018	15.31	0.00	9.09	14.29	22.22	50.00
Consumer durables	427	9.17	0.00	0.00	10.00	14.29	50.00
Manufacturing	2,099	9.85	0.00	0.00	10.00	14.29	50.00
Energy	706	7.20	0.00	0.00	8.33	12.50	37.50
Chemicals	573	14.25	0.00	8.33	12.50	20.00	60.00
Business equipment	2,620	7.98	0.00	0.00	9.09	12.50	50.00
Telecommunication	326	13.64	0.00	8.33	12.50	18.18	44.44
Utilities	918	15.20	0.00	9.09	14.29	20.00	44.44
Shops	1,840	13.84	0.00	8.33	12.50	20.00	62.50
Healthcare	1,158	11.25	0.00	0.00	11.11	16.67	44.44
Money finance	2,614	12.01	0.00	6.25	11.11	16.67	55.56
Other	1,696	10.45	0.00	0.00	11.11	16.67	44.44
Total	15,995	11.27	0.00	0.00	11.11	16.67	62.50

Note. FEM_DIR is the ratio of female directors to the number of all directors (in this table, in percentages).

Panel A in Table 2 indicates that the sample almost continuously increases throughout the sample period. This is attributed to the growing coverage of the MSCI KLD database. For the period 1991 to 2000, the coverage is restricted to the S&P 500 index. For the period 2001 to 2002 the coverage is extended to the 1,000 largest firms by market capitalization. Since 2003, 2,000 small caps have also been covered. Across the sample period, female directors represent only 11.27% of all directors. It is notable, though, that the percentage value increased from 7.40% in 1996 to 13.00% in 2012. The highest number of female directors are found in the consumer non-durables business; the lowest number in the energy industry (Panel B).

4. Research Method

4.1 Baseline Regression Model

The following model is estimated to examine whether director gender is related to the level of CSR:

$$\begin{aligned}
 CSR_{it} = & \beta_0 + \beta_1 FEM_DIR_{it} + \beta_2 FEM_CEO_{it} + \beta_3 FEM_DUAL_{it} + \beta_4 DUAL_CEO_{it} \\
 & + \beta_5 BSIZE_{it} + \beta_6 SIZE_{it} + \beta_7 BME_{it} + \beta_8 ROA_{it} + \beta_9 LEV_{it} \\
 & + \sum \beta_{ind} IND12_i + \sum \beta_{time} TIME_t + \varepsilon_{it}
 \end{aligned} \tag{1}$$

CSR is measured using the MSCI KLD database. MSCI KLD is the gold standard when it comes to CSR ratings for North American firms, and is widely used in capital market-based CSR research (e.g., El Ghouli et al., 2011; Dhaliwal et al., 2011). The MSCI KLD CSR ratings are split into seven qualitative areas: corporate governance, community, diversity, employee relations, environment, human rights, and product characteristics. For each area, MSCI KLD assigns binary ratings to a set of strengths and concerns. The full set of qualitative areas and categories of strengths and concerns are displayed in Table 1.

We follow El Ghoul et al. (2011) and define the overall CSR score as the number of strengths minus the number of concerns in all MSCI KLD areas except corporate governance. We differentiate between CSR and corporate governance because our definition of corporate governance excludes conflicts between insiders and shareholders. To test whether female directors have different effects on various sub-dimensions of CSR, we repeat the analysis with scores based exclusively on items from these sub-dimensions. These are community (COM), diversity (DIV), employee relations (EMP), environment (ENV), human rights (HUM), and product characteristics (PRO). In all instances, we exclude items from our calculations that directly relate to the gender of directors or officers. These items are DIV-str-A “CEO—The company’s chief executive officer is a woman or a member of a minority group”, DIV-str-B “Promotion—The company has made notable progress in promoting women and minorities, particularly to line positions with profit-and-loss responsibilities in the corporation”, DIV-str-C “Board of Directors—Women, minorities, and/or the disabled hold four seats or more (excluding double counts) on the board of directors, or one third or more of the board seats if the board numbers fewer than 12”, and DIV-con-B “The company has no women on its board of directors or among its senior line managers”. Measuring CSR net of these items is crucial since otherwise we would mechanically introduce a correlation between the scores and director’s gender.

As control variables we include a dummy variable *FEM_CEO* indicating whether the CEO of the firm is female, and a variable *FEM_DUAL* that indicates whether the firm has a female CEO who is also chairwoman of the board. The dummy variable *DUAL_CEO* indicates whether CEO duality is present at all. The data on CEO gender was obtained from Execucomp. Though this paper focuses on the impact of female directors on the level of CSR, including variables that control for CEO gender is important since prior empirical evidence has shown a significant relationship between a female CEO and the level of CSR (Huang, 2012; Manner, 2010). Further control variables are board size (*BSIZE*), i.e., the number of board members; firm size (*SIZE*), i.e., the natural logarithm of total assets; book-to-market value of equity (*BME*); return on assets (*ROA*); and leverage (*LEV*), defined as total debt to total assets. In line with results from prior literature, we expect *BSIZE*, *SIZE* and *ROA* to be positively related to CSR, since larger and more profitable firms with larger boards typically have a larger stakeholder base and thus more funds to invest in CSR (Artiach et al., 2010; Chih, 2010). We control for industry and time-fixed effects using industry dummies (*IND12*) based on Fama-French 12 industries and year dummies (*TIME*). Standard errors are clustered at the firm level to account for intra-firm correlation of standard errors.

4.2 Matched Sample Analysis

Equation (1) includes the proportion of female directors as a continuous variable. We perform an additional regression analysis to measure the effect of having a significant share of women on the board of directors. We define “significant” as being above 25 percent (*FEM_DIR25* = 1), though this threshold is altered in robustness tests. Apart from the theoretical question whether crossing specific fractional thresholds is important to whether female board members have an effect on CSR, this method has the appeal that having more women than specified by the threshold can be interpreted as a treatment variable, while firms with fewer women on the board than the threshold can be considered a control sample. We follow this approach and find control firms for each firm with more than 25 percent women on the board. The probability of a firm having more than 25 percent female directors is modeled within a year using a logit regression with board size (*BSIZE*), size (*SIZE*) and female CEO (*FEM_CEO*) as independent variables. We include *FEM_CEO* as a control because previous research has shown that the number of men on the board is negatively related to the employment of female executives (Bell, 2005; Elkinawy & Stater, 2011). Using the results from this logit model we match within industry each firm having more than 25 percent female directors to a firm with fewer than 25 percent female directors with the lowest difference in propensity scores.

$$\text{Log}[\text{prob}(\text{FEM_DIR25it})/1-\text{prob}(\text{FEM_DIR25it})] = \beta_0 + \beta_1\text{FEM_CEOit} + \beta_2\text{BSIZEit} + \beta_3\text{SIZEit} + \epsilon_{it} \quad (2)$$

The use of propensity score matching controls for self-selection bias arising from the observable characteristics included in equation (2). Since propensity score matching is based on the assumption that self-selection arises solely from the observable characteristics included in the logit regression model, it does not control for unobservable characteristics (Lennox et al., 2012; Li & Prabhala, 2007). The alternative Heckman (1979) method requires the use of theory to identify instrumental variables for the first-stage model that can be validly excluded in the second stage (Lennox et al., 2012; Li & Prabhala, 2007). As theory does not guide us in the choice of instrumental variables, we choose the propensity score matching approach.

Table 2. Wilcoxon-Mann-Whitney test of differences between firms with more or exactly 25% female directors and firms with less than 25% female directors using the full sample

Variable	More or exactly 25% female directors (FEM_DIR25 = 1) (998 observations)		Fewer than 25% female directors (FEM_DIR25 = 0) (15035 observations)		Wilcoxon-Mann-Whitney test		
	Mean	Median	Mean	Median	Z		P > Z
CSR	1.00	0.00	0.05	0.00	9.16	***	0.00
COM	0.35	0.00	0.14	0.00	8.96	***	0.00
DIV	0.77	0.00	0.23	0.00	16.68	***	0.00
EMP	-0.07	0.00	-0.04	0.00	-1.70		0.96
ENV	0.24	0.00	-0.02	0.00	8.12	***	0.00
HUM	-0.05	0.00	-0.06	0.00	0.51		0.31
PRO	-0.23	0.00	-0.20	0.00	-1.28		0.90
FEM_CEO	0.15	0.00	0.02	0.00	27.91	***	0.00
FEM_DUAL	0.07	0.00	0.01	0.00	21.28	***	0.00
DUAL_CEO	0.60	1.00	0.56	1.00	2.75	***	0.00
BSIZE	9.91	10.00	9.69	9.00	4.40	***	0.00
SIZE ¹	25540.28	4298.33	19555.79	2750.84	7.77	***	0.00
BME	0.57	0.47	0.53	0.45	1.86	**	0.03
ROA	0.05	0.05	0.05	0.05	0.62		0.27
LEV	0.61	0.61	0.56	0.56	7.71	***	0.00

Note. ¹SIZE in this table is reported in millions of U.S. dollars but enters the regression models in logarithmic transformation. CSR is the number of strengths minus the number of concerns in all MSCI KLD areas except corporate governance. COM is the CSR rating for community, DIV for diversity, EMP for employee relations, ENV for environment, HUM for human rights, and PRO for product characteristics. All these ratings are calculated as strengths minus concerns. In all instances, we exclude items from our calculations that are directly related to the gender of directors or officers. FEM_DIR 25 is a dummy variable that takes the value 1 if the percentage value of female directors is equal or more than 25. FEM_CEO is a dummy variable indicating whether the CEO of the firm is female. FEM_DUAL is a dummy variable indicating whether the firm has a female CEO who is also chairwomen of the board. The dummy variable DUAL_CEO indicates whether CEO duality is present at all. BSIZE is board size defined as the number of board members. SIZE is firm size measured by the natural logarithm of total assets; BME is book-to-market equity. ROA is return on assets and LEV is leverage defined as total debt to total assets. Asterisks indicate significance at the 10% (*), 5% (**), and 1% (***) levels.

5. Results

5.1 Descriptive Analysis

Table 3 provides descriptive statistics on the total pooled sample divided into firm-years with more than or fewer than 25 percent female directors. A Wilcoxon–Mann–Whitney test on the medians of the variables of both groups reveals that, on average, CSR at the aggregate level and in the sub-dimensions community (COM), diversity (DIV), and environment (ENV) is higher for firm-years with over 25 percent female directors. Firms with over 25 percent female directors are also more likely to have a female CEO, which is consistent with the results of Elkinawy and Stater (2011). Consequently, those firms are also more likely to have a female CEO who is also the chairwoman. Furthermore, firms with more than 25 percent female directors are usually large firms that more often have CEO duality, larger boards, a higher book-to-market equity ratio, and higher leverage.

5.2 Propensity Score Matching

The results of estimating the logit regressions used to match firms with more than and fewer than 25 percent female directors are provided in Table 4. In 16 of the 17 years, firms are significantly more likely to have more than 25 percent female directors when the CEO is also female. Firm size is significantly positively associated with the probability of having more than 25 percent female board members in 10 of the 17 years. In 16 of the 17 years, board size is unrelated to the likelihood of having more than 25 percent female directors. Using the results from this logit model we match, within industries, each firm with more than 25 percent female board members to a firm with fewer than 25 percent female board members with the lowest difference in propensity scores.

Table 5 displays descriptive statistics for the paired subsample and univariate tests of differences between firms with more than and fewer than 25 percent female directors. By construction, no significant difference (in level or magnitude) is evident in terms of board size, firm size, and presence of a female CEO. The Wilcoxon–Mann–Whitney tests still report significant differences in the CSR measures SUS, COM, DIV, and ENV, which is a good indicator that even when controlling for other firm characteristics, firms with more than

and fewer than 25 percent female directors differ substantially in their levels of CSR. A comparison of the other control variables across FEM_DIR 25 indicates no significant differences other than for DUAL_CEO, which is four percentage points higher for firms with more than 25 percent female directors (60 percent compared to 56 percent for firms with fewer than 25 percent female directors). The similarity of control variables indicates that the propensity score matching procedure is successful in matching firms with those with more than 25 percent female directors and firms with fewer than 25 percent female directors across multiple dimensions.

5.3. Regression Analyses

Table 6 reports the results for estimating the regression model for the full sample. We cluster standard errors by firms to control for firm effects (because it is possible for the same firm to enter the pooled sample a number of times). With adjusted R-squared ranging between nine and 33 percent the model has reasonable explanatory power. In the first column, the coefficient on the variable of interest FEM_DIR is positive and significant for overall CSR (CSR). Its coefficient 3.74 implies that an increase in the number of female directors relative to the total number of directors of 10 percentage points is associated with an increase of 0.374 in CSR scores. This result provides evidence for Hypothesis 1, and is also comparable to the findings of Zhang et al. (2013, p. 387), who report coefficient estimates of 3.08 and 2.99 depending on the model specification.

The second column shows a significantly positive coefficient for CSR for the community dimension. An increase in the ratio of female directors to the total number of directors leads to a 0.066 higher CSR score in this dimension of CSR. This supports Hypothesis 2. Hypothesis 2 is further supported when the coefficients on EMP and ENV are examined. Both are positive and statistically significant. A 10 percent increase in the ratio of female directors is associated with a higher CSR score of 0.034 in the employee dimension and 0.074 in the environment dimension. These results are consistent with the higher mean and median CSR scores for firm-years with more than 25 percent female directors reported in Table 5. As predicted by Hypotheses 3 and 4, we find no statistically significant relationship between CSR in the human rights and products dimensions and board gender diversity. The respective coefficients in the sixth and seventh columns in Table 6 are insignificant. Firms with larger boards have, on average, higher CSR scores in the dimensions SUS, COM, DIV and PRO. Larger firms have higher levels of CSR in the community, diversity, and employee dimensions but lower levels of CSR in the human rights and product characteristics dimensions. This may be interpreted as due to the fact that larger firms are more international with operations in countries where human rights are a critical issue. A large textile producer that manufactures in Asia, for instance, is more likely to encounter human rights- and product-related controversies than a smaller local manufacturer. The negative relationship between the book-to-market ratio (BME) and CSR, the positive relationship between profitability (ROA) and CSR, and in most regressions (except for HUM) the negative relationship between leverage (LEV) and CSR are in accordance with the findings of prior empirical studies (Lourenco & Branco, 2013; Artiach, 2010; Ziegler & Schröder, 2010; Bansal, 2005).

Table 3. Logit regressions (FEM_DIR25 = 1) for propensity-score matching each year

Year	Intercept	FEM_CEO	BSIZE	SIZE	Observations	R2	χ^2	
1996	1.09 (0.38)	3.42 (2.15)	** -0.13 (-0.59)	-0.57 (-1.22)	420	0.1920	10.40	**
1997	-3.33 (0.38)	* 4.15 (2.93)	*** -0.05 (-0.39)	0.04 (0.15)	419	0.0915	10.61	**
1998	-3.40 (0.38)	* 3.74 (3.22)	*** -0.15 (-0.97)	0.13 (0.50)	423	0.1150	10.90	**
1999	-0.82 (0.38)	4.30 (3.65)	*** -0.11 (-0.94)	-0.16 (-0.81)	453	0.1560	24.62	***
2000	-2.58 (0.38)	** 3.80 (4.15)	*** -0.02 (-0.25)	-0.04 (-0.25)	465	0.1010	17.94	***
2001	-3.63 (0.38)	*** 3.46 (4.31)	*** -0.06 (-0.76)	0.13 (0.90)	666	0.0664	16.65	***
2002	-2.18 (0.38)	** 1.19 (1.08)	-0.06 (-0.71)	-0.03 (-0.22)	701	0.0078	2.08	
2003	-4.50 (0.38)	*** 3.14 (6.20)	*** -0.01 (-0.18)	0.20 (2.11)	** 1,132	0.0761	36.12	***
2004	-4.63 (0.38)	*** 3.10 (6.17)	*** -0.04 (-0.58)	0.24 (2.65)	*** 1,190	0.0779	38.39	***
2005	-5.22 (0.38)	*** 2.51 (5.02)	*** 0.02 (0.31)	0.24 (2.55)	** 1,141	0.0626	29.45	***

2006	-5.95 (0.38)	*** 2.83 (5.72)	*** 0.13 (2.13)	** 0.20 (2.22)	** 1,155	0.0846	42.82	***
2007	-3.96 (0.38)	*** 1.70 (4.13)	*** 0.02 (0.27)	0.15 (1.83)	* 1,203	0.0290	18.53	***
2008	-4.22 (0.38)	*** 2.50 (6.75)	*** -0.00 (-0.02)	0.17 (1.93)	* 1,276	0.0647	39.41	***
2009	-4.22 (0.38)	*** 2.59 (7.52)	*** 0.04 (0.69)	0.14 (1.83)	* 1,308	0.0750	51.82	***
2010	-4.86 (0.38)	*** 2.88 (8.38)	*** -0.03 (-0.46)	0.29 (3.71)	*** 1,317	0.1070	76.42	***
2011	-4.96 (0.38)	*** 2.55 (7.49)	*** 0.05 (0.97)	0.23 (3.32)	*** 1,330	0.0848	65.18	***
2012	-4.42 (0.38)	*** 2.13 (6.97)	*** 0.05 (1.09)	0.19 (2.90)	*** 1,356	0.0689	59.94	***

Note. FEM_DIR 25 is a dummy variable that takes the value 1 if the percentage value of female directors is equal or more than 25. FEM_CEO is a dummy variable indicating whether the CEO of the firm is female. SIZE is firm size measured by the natural logarithm of total assets. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) levels.

Table 4. Wilcoxon-Mann-Whitney test of differences between firms with more or exactly 25% female directors and firms with less than 25% female directors using matched subsamples

Variable	More than or exactly 25% female directors (FEM_DIR25 = 1) (946 observations)		Fewer than 25% female directors (FEM_DIR25 = 0) (946 observations)		Wilcoxon-Mann-Whitney test	
	Mean	Median	Mean	Median	Z	P > Z
CSR	0.96	0.00	0.40	0.00	3.37	*** 0.00
COM	0.34	0.00	0.22	0.00	2.93	*** 0.00
DIV	0.76	0.00	0.46	0.00	5.97	*** 0.00
EMP	-0.07	0.00	-0.07	0.00	-0.73	0.77
ENV	0.23	0.00	0.11	0.00	2.99	*** 0.00
HUM	-0.05	0.00	-0.04	0.00	-0.48	0.69
PRO	-0.24	0.00	-0.29	0.00	1.09	0.14
FEM_CEO	0.11	0.00	0.10	0.00	0.30	0.38
FEM_DUAL	0.04	0.00	0.03	0.00	1.23	0.11
DUAL_CEO	0.60	1.00	0.54	1.00	2.42	*** 0.01
BSIZE	9.93	10.00	10.19	10.00	-0.92	0.82
SIZE ¹	26296.36	4385.44	28404.80	4247.82	0.18	0.43
BME	0.57	0.47	0.56	0.48	-0.26	0.60
ROA	0.05	0.04	0.05	0.04	1.21	0.11
LEV	0.61	0.62	0.61	0.60	0.87	0.19

Note. ¹SIZE in this table is reported in millions of US dollars but enters the regression models in logarithmic transformation. SUS is the number of strengths minus the number of concerns in all MSCI KLD areas except corporate governance. COM, is the CSR rating for community, DIV for diversity, EMP for employee relations, ENV for environment, HUM for human rights, and PRO for product characteristics. All these ratings are calculated as strengths minus concerns. In all instances, we exclude items from our calculations that are directly related to the gender of directors or officers. FEM_DIR25 is a dummy variable that takes the value 1 if the percentage value of female directors is equal or more than 25. FEM_CEO is a dummy variable indicating whether the CEO of the firm is female. FEM_DUAL is a dummy variable indicating whether the firm has a female CEO who is also chairwomen of the board. The dummy variable DUAL_CEO indicates whether CEO duality is present at all. BSIZE is board size defined as the number of board members. SIZE is firm size measured by the natural logarithm of total assets; BME is book-to-market equity. ROA is return on assets and LEV is leverage defined as total debt to total assets. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) levels.

Table 5. Pooled cross-sectional regression on the full sample

$$CSR_{it} = \beta_0 + \beta_1 FEM_DIR_{it} + \beta_2 FEM_CEO_{it} + \beta_3 FEM_DUAL_{it} + \beta_4 DUAL_CEO_{it} + \beta_5 BSIZE_{it} + \beta_6 SIZE_{it} + \beta_7 BME_{it} + \beta_8 ROA_{it} + \beta_9 LEV_{it} + \sum \beta_{ind} IND12_{it} + \sum \beta_{time} TIME_{it} + \epsilon_{it}$$

Parameter	CSR	COM	DIV	EMP	ENV	HUM	PRO	
FEM_DIR	3.74 (0.40)	*** 0.66 (0.11)	*** 1.94 (0.14)	*** 0.34 (0.17)	** 0.74 (0.13)	*** -0.03 (0.05)	0.14 (0.13)	
FEM_CEO	-0.06 (0.27)	-0.02 (0.08)	0.14 (0.09)	-0.04 (0.11)	-0.11 (0.07)	0.04 (0.03)	-0.08 (0.13)	
FEM_DUAL	0.64 (0.48)	0.07 (0.13)	0.09 (0.16)	0.12 (0.14)	0.15 (0.18)	-0.05 (0.05)	0.22 (0.14)	
DUAL_CEO	-0.05 (0.06)	0.00 (0.02)	0.03 (0.02)	-0.06 (0.02)	*** -0.02 (0.02)	0.00 (0.01)	0.00 (0.02)	
BSIZE	0.06 (0.01)	*** 0.02 (0.00)	*** 0.01 (0.01)	** 0.01 (0.01)	0.00 (0.01)	-0.00 (0.00)	0.02 (0.01)	***
SIZE	0.16 (0.04)	*** 0.09 (0.01)	*** 0.27 (0.01)	*** 0.03 (0.02)	** -0.00 (0.02)	-0.04 (0.01)	*** -0.18 (0.01)	***
BME	-0.44 (0.09)	*** -0.06 (0.03)	** -0.18 (0.03)	*** -0.10 (0.03)	*** -0.11 (0.04)	*** 0.01 (0.01)	-0.01 (0.03)	
ROA	1.50 (0.41)	*** 0.19 (0.10)	* 0.29 (0.16)	* 0.93 (0.18)	*** 0.31 (0.15)	** -0.06 (0.05)	-0.14 (0.15)	
LEV	-0.70 (0.24)	*** -0.15 (0.06)	** -0.25 (0.08)	*** -0.25 (0.09)	*** -0.10 (0.08)	0.10 (0.03)	*** -0.03 (0.07)	
Intercept	-1.30 (0.40)	*** -0.41 (0.10)	*** -2.05 (0.15)	*** -0.40 (0.17)	** -0.15 (0.15)	0.65 (0.08)	*** 1.17 (0.11)	***
IND12	YES	YES	YES	YES	YES	YES	YES	
TIME	YES	YES	YES	YES	YES	YES	YES	
Observations	16,033	15,517	16,033	16,012	16,027	14,905	15,512	
Adj. R2	0.15	0.13	0.33	0.09	0.16	0.10	0.18	
F-test	17.84	14.49	30.73	15.76	15.02	7.194	16.61	

Note. This table presents the results of pooled cross-sectional regressions for the sustainability scores and sub-dimensions using the total sample. SUS is the number of strengths minus the number of concerns in all MSCI KLD areas except corporate governance. COM, is the sustainability rating for community, DIV for diversity, EMP for employee relations, ENV for environment, HUM for human rights, and PRO for product characteristics. All these ratings are calculated as strengths minus concerns. In all instances, we exclude items from our calculations that are directly related to the gender of directors or officers. FEM_CEO is a dummy variable indicating whether the CEO of the firm is female. FEM_DUAL is a dummy variable indicating whether the firm has a female CEO who is also chairwoman of the board. The dummy variable DUAL_CEO indicates whether CEO duality is present at all. BSIZE is board size defined as the number of board members. SIZE is firm size measured by the natural logarithm of total assets; BME is book-to-market equity. ROA is return on assets and LEV is leverage defined as total debt to total assets. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) levels. Standard errors in parentheses are corrected for heteroscedasticity with the White (1980) correction and are clustered at the firm level.

Table 7 presents the results of estimating model (1) using the propensity score-matched subsample. The adjusted R-squared now ranges from 10 percent for the human rights (HUM) sub-dimension to 39 percent for diversity (DIV). The coefficients of FEM_DIR25, the treatment variable indicating whether a firm has more than or fewer than 25 percent female directors, are fully consistent with the results of the analysis of the total sample, except for the employee sub-dimension, where the coefficient is now insignificant though still positive. Also noteworthy is the empirical result that CEO gender does not matter as a determinant of CSR. Both FEM_CEO and FEM_DUAL are insignificant in most of the regressions. This can be considered new evidence for the impact (or lack thereof) of female CEOs on the choice of CSR levels, and contradicts prior, significantly positive results in Huang (2012) and Manner (2010). A comparison with Table 6 indicates that fewer of the control variables are significant. However, the controls that are significant provide results that are generally consistent with those reported in Table 6.

Overall, we find strong support for our hypothesis that the percentage of female directors or a treatment variable coded as 1, if this percentage value exceeds 25 percent, is strongly associated with the level of CSR.

Table 6. Pooled cross-sectional regression on the matched subsample

$$\text{CSRit} = \beta_0 + \beta_1\text{FEM_DIR25it} + \beta_2\text{FEM_CEOit} + \beta_3\text{FEM_DUALit} + \beta_4\text{DUAL_CEOit} + \beta_5\text{BSIZEit} + \beta_6\text{SIZEit} + \beta_7\text{BMEit} + \beta_8\text{ROAit} + \beta_9\text{LEVit} + \Sigma\beta_{\text{bind}}\text{IND12i} + \Sigma\beta_{\text{time}}\text{TIMEit} + \epsilon_{it}$$

Parameter	CSR	COM	DIV	EMP	ENV	HUM	PRO	
FEM_DIR25	0.61 (0.18)	*** 0.13 (0.05)	** 0.30 (0.06)	*** 0.02 (0.07)	0.13 (0.05)	** -0.00 (0.02)	0.05 (0.06)	
FEM_CEO	-0.11 (0.41)	-0.03 (0.12)	0.22 (0.12)	* -0.13 (0.13)	-0.06 (0.08)	0.07 (0.05)	-0.19 (0.20)	
FEM_DUAL	0.03 (0.65)	0.04 (0.17)	-0.10 (0.22)	0.06 (0.19)	-0.07 (0.27)	-0.15 (0.09)	* 0.15 (0.21)	
DUAL_CEO	-0.03 (0.17)	0.02 (0.04)	0.00 (0.06)	-0.11 (0.07)	* 0.02 (0.05)	-0.01 (0.02)	0.04 (0.05)	
BSIZE	0.15 (0.04)	*** 0.04 (0.01)	*** 0.04 (0.01)	*** 0.03 (0.01)	** 0.02 (0.02)	0.00 (0.00)	0.02 (0.01)	**
SIZE	0.35 (0.09)	*** 0.12 (0.02)	*** 0.35 (0.03)	*** 0.01 (0.03)	0.09 (0.03)	*** -0.02 (0.01)	-0.21 (0.03)	***
BME	-0.84 (0.21)	*** -0.11 (0.08)	-0.19 (0.08)	** -0.22 (0.08)	*** -0.17 (0.07)	** -0.01 (0.03)	-0.07 (0.07)	
ROA	4.02 (1.52)	*** 0.29 (0.37)	1.50 (0.53)	*** 1.74 (0.67)	*** 0.78 (0.40)	** -0.01 (0.22)	-0.16 (0.41)	
LEV	0.04 (0.58)	-0.13 (0.13)	-0.04 (0.20)	-0.30 (0.25)	0.12 (0.17)	0.11 (0.07)	* 0.39 (0.15)	***
Intercept	-4.34 (1.04)	*** -0.83 (0.27)	*** -2.96 (0.40)	*** 0.27 (0.33)	-0.27 (0.32)	0.11 (0.07)	0.72 (0.30)	**
IND12	YES	YES	YES	YES	YES	YES	YES	
TIME	YES	YES	YES	YES	YES	YES	YES	
Observations	1,892	1,809	1,892	1,887	1,890	1,660	1,787	
Adj. R2	0.3134	0.1912	0.3923	0.1456	0.2581	0.0962	0.1970	
F-test	10.81	*** 7.143	*** 13.75	*** 4.63	*** 6.52	*** 2.58	*** 6.47	***

Note. This table presents the results of pooled cross-sectional regressions for the sustainability scores and sub-dimensions using the matched subsample. SUS is the number of strengths minus the number of concerns in all MSCI KLD areas except corporate governance. COM, is the sustainability rating for community, DIV for diversity, EMP for employee relations, ENV for environment, HUM for human rights, and PRO for product characteristics. All those ratings are calculated as strengths minus concerns. In all instances, we exclude items from our calculations that are directly related to the gender of directors or officers. FEM_CEO is a dummy variable indicating whether the CEO of the firm is female. FEM_DUAL is a dummy variable indicating whether the firm has a female CEO who is also chairwoman of the board. The dummy variable DUAL_CEO indicates whether CEO duality is present at all. BSIZE is board size defined as the number of board members. SIZE is firm size measured by the natural logarithm of total assets; BME is book-to-market equity. ROA is return on assets and LEV is leverage defined as total debt to total assets. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) levels. Standard errors in parentheses are corrected for heteroscedasticity with the White (1980) correction and are clustered at the firm level.

5.4 Robustness Tests

Other authors suggest refraining from our approach of aggregating CSR strengths and concerns into one rating score since one firm may, for instance, be environmentally friendly and socially irresponsible at the same time (Mattingly & Berman, 2006; Baron et al., 2011; Kotchen & Moon, 2012). We acknowledge this issue by repeating our main analyses with CSR scores based on strengths and concerns separately. We find, according to untabulated results, that the variables FEM_DIR and FEM_DIR25 are strongly positively related to the number of CSR strengths and negatively related to the number of concerns. On average, the CSR score of firms with more than 25 percent female directors is 0.58 points higher. Thus, we conclude that female directors contribute to both increasing a firm's CSR strengths and, albeit to a lesser extent, reducing its CSR concerns.

As an additional robustness check, we alter the threshold of 25% to 5%, 10%, and 30%, respectively. The results remain largely unchanged though significances are reduced due to either less heterogeneity or a reduced number of firms in the treatment sample.

The main statistical analysis is based on an ordinary least squares estimation with industry and time fixed effects. We re-estimate model (1) with firm fixed effects and with a dynamic system generalized methods of moments approach (GMM) that simultaneously controls for endogeneity and unobserved heterogeneity. While the simple firm fixed effects yield no significant results, potentially because the variables of research interest FEM_DIR and FEM_DIR25 are almost time-invariant and consequently filtered out by this estimation method, system GMM, which also exploits information in the levels of variables, provides results that are consistent with

those reported in Table 6 and Table 7.

6. Conclusion

In this study, we examine the association between board gender diversity and dimensions of CSR. Specifically, we focus on the community, diversity, employee, environment, human rights, and product related dimensions of CSR. In doing so we build on prior research by Zhang et al. (2013) and go beyond their findings by developing a theoretical framework, where specific dimensions of CSR have different predicted associations with board gender diversity. We follow Jensen and Meckling (1976)'s interpretation that a firm is a nexus of contracts, extend this idea to a more global setting, and argue that the contracting parties operate in different environments, hence are subject to different legal jurisdictions, CSR legislation and policies. In this setting boards are faced with a moral and/or ethical dilemma, because they have to decide which level of social and environmental requirements to fulfil. We suggest that the ethical value judgment of the board in a global village has a significant role to play and that board gender diversity makes a difference especially with regard to certain dimensions of CSR, amongst other things. Our empirical results show that board gender diversity matters, but not with regard to all dimensions of CSR. We find a statistically significant positive association between board gender diversity and an overall measure of CSR as well as for the following CSR dimensions: community, diversity, employee relations, and environment. These findings support Hypotheses 1 and 2 and are particularly meaningful in affirming the importance of social traits attributed to women (which are more pronounced in women and are shown by engagement in CSR). With respect to the association between gender diversity and human rights as well as product-related CSR, we find no statistically significant relationship.

Our research has implications for both future researchers and policy makers alike. By showing that the characteristic traits of men and women make a difference and play a key role in driving CSR, companies should consider the importance of selecting women as directors as a way of influencing dimensions of CSR. As shown by Galbreath (2011), the different skills and approaches of men and women towards solving problems guarantee a balanced focus in CSR. From a business case perspective, diversity is important for corporate value creation (Huse et al., 2009). Bearing these findings in mind, firms should think about the impact on the dimensions of CSR and the signals they send to the capital market when they appointment women to their boards of directors. Based on our findings, researchers can further examine what causes the effect between board gender diversity and the CSR dimensions community, diversity, employee relations, and environment. Are there certain types of women who are more likely to engage in these dimensions of CSR? When women join the board of a listed company, their track records often show that they previously served on the board of a public or not-for-profit organization or at least have leadership experience in these companies (Singh et al., 2008). Being on the board of a not-for-profit organization may shape social traits differently than serving on the board of an S&P 500 firm, and could be an indicator of which dimension of CSR they are especially interested in. However, this may not hold for some countries, or it could change over time. Indeed, the 2012 Australian Census of Women in Leadership report shows that this does not hold for Australian women on the boards of ASX top 200 companies. These women often have strong backgrounds in law, finance and accounting, or investment banking. Some of them also have public sector experience as regulators, politicians, or academics. This calls for research on an international level with respect to country-specific factors. It also raises the question as to whether male board members tend to stay in the same or at least in related industries when they are appointed to a board position. This is a fair assumption because prior studies show that there are relatively few female directors with high-level board experience to rival that of their male counterparts, which is addressed in Bertrand et al. (2010).

Another social issue that differs between male and female directors may be their membership of social networks. Changing from the board of a not-for-profit organization to a corporate board may diversify their social network, but is it not more useful to be connected with peers in the same industry and build social ties with close partners? Future research could investigate whether the characteristic traits of male and female directors evolve from different backgrounds and if they do, what causes this evolution. Another research question with regard to this is whether engagement in CSR and its dimensions is influenced by the social networks of female and male directors, and whether men's and women's ability to network also has an impact on CSR performance.

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Notes

Note 1. As a study by Institutional Shareholder Services has shown, female representation on corporate boards has increased steadily in recent years in a number of major markets. Between 2011 and 2014, the proportion of female directors in FTSE 350 firms grew by roughly 8 percentage points. Female representation grew by almost 4 percentage points at firms listed in Canada's TSX Composite index and by 2.4 percentage points at U.S. S&P 500 companies (<http://www.issgovernance.com/library/gender-diversity-boards-review-global-trends/>). Regulators' efforts in this area are rather heterogeneous and range from issuing non-binding recommendations for quotas, e.g., in the U.S., UK and Australia, to fixed and legally binding quotas, e.g., in Norway and, most recently, Germany (Smith, 2014; Ahern & Dittmar, 2012).

Note 2. Fama-French 12 industries is an industry classification based on a reclassification of SIC codes to 12 major industries. This reclassification scheme is available at Kenneth French's homepage (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html), and has been applied in other market-based CSR research, e.g., Derwall et al. (2005).

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