

# To What Extent Do Gender Diverse Boards Enhance Corporate Social Performance?

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Received: 25 February 2016 / Accepted: 31 March 2017 / Published online: 17 April 2017  
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**Abstract** The inconclusiveness of previous research on the association between gender diverse boards (GDB) and corporate social performance (CSP) has led us to revisit the question in light of stakeholder management and institutional theories. Given that corporate social responsibility (CSR) is a multidimensional concept, we test the influence of GDB on various groups of stakeholders. By considering the interaction between stakeholders' power and directors' personal motivations toward the prioritization of stakeholders' claims, we find that GDB are positively related to CSR dimensions that are related to less powerful stakeholders such as the environment, contractors, and the community. However, GDB do not appear to have a significant impact on CSR dimensions that are associated with stakeholders who benefit from more institutionalized power, such as employees and customers.

**Keywords** Corporate social responsibility · Gender diverse boards · Corporate social performance · Stakeholder power · Institutions

## Introduction

As a key governance mechanism, corporate boards have undergone extensive regulation reforms in the last 15 years. A recent trend is the requirement to include more female directors on boards. Such requirement aims at harnessing women's contribution to boards' dynamics through their ideas, approaches, and skills. Several research studies have examined the effects of director gender on boardroom dynamics (Mathisen et al. 2013; Terjesen et al. 2009) and organizational outcomes (Abdullah et al. 2016; Adams and Ferreira 2009; Bear et al. 2010). A large number of studies have focused on the effect of gender diverse boards (GDB) on financial performance. For instance, in their meta-analysis covering 140 articles, Post and Byron (2015) show that GDB are generally associated with better financial performance.

In comparison, relatively few studies have investigated whether board gender diversity is related to firms' performance in terms of its corporate social responsibilities (CSRs) (Rao and Tilt 2016). Further, previous studies have yielded mixed results. Two recent meta-analyses conducted by Rao and Tilt (2016) and Byron and Post (2016) document a positive link between GDB and corporate social performance (CSP). However, other studies document mixed results or no effect (Bear et al. 2010; Boulouta 2013; Coffey and Wang 1998).

We argue that the inconclusiveness of previous research stems from overlooking the following aspects. First, CSR is multidimensional which makes it a complex theoretical and operational construct to study (Godfrey and Hatch 2007; Griffin and Mahon 1997; Johnson and Greening 1999; Rowley and Berman 2000). Second, several scholars emphasize that stakeholder power needs to be considered when studying board's CSR decision making and

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stakeholder prioritization (Mitchell et al. 1997; Weitzner and Deutsch 2015). Finally, omitting the institutional context leads to a reduced view of the firms' environment and CSR practices (Aguilera et al. 2007; Campbell 2006, 2007; Matten and Moon 2008).

We develop a theoretical framework based on stakeholder (Mitchell et al. 1997; Weitzner and Deutsch 2015) and institutional theories (DiMaggio and Powell 1983; Meyer and Rowan 1977; Scott 2013) to investigate whether GDB are associated with greater CSP toward five categories of stakeholders, namely the environment, employees, contractors, customers, and the community.

Our sample contains 1632 firm-year observations drawn from the Fortune 500 companies in the USA during the period from 2007 to 2013. The results show that the impact of GDB on CSP differs across the five CSR dimensions. We find that GDB are only associated with greater CSP toward the environment, contractors, and the community. The lack of impact on the employees and customers dimensions may be explained by the fact that these groups benefit from a higher level of institutional or regulated social protection, which leaves little room for actions by the boards.

The rest of the article is divided into three sections. The second section reviews the relevant literature. The third section introduces the theoretical framework and develops the hypothesis. The fourth section presents the methodology. Finally, we conclude with a discussion of the results and provide several suggestions for future research.

## Literature Review

### Corporate Social Responsibility

Several definitions of CSR have been put forward. McWilliams and Siegel define CSR as "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (2001: 117). Carroll (1979, 1991) distinguishes four levels of social responsibility: economic, legal, ethical, and philanthropic.<sup>1</sup> Aguinis (2011) highlights the importance of the organizational context in CSR. He defines CSR as "context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance" (2011: 855). Three essential CSR attributes

<sup>1</sup> According to Carroll (1979, 1991), the economic responsibility refers to the fact that firms should be profitable when producing goods and services. The legal responsibility implies that firms should operate within the law. Ethical responsibilities embrace those behaviors and activities that are not codified into law, but are expected or prohibited by societal members. Finally, philanthropic responsibilities are discretionary and voluntary actions that contribute to improving the quality of life of the community.

stand out from the above definitions. First, CSR actions are voluntary actions that exceed those required by law. Second, CSR is a multidimensional concept; the firm needs to respond differently to each stakeholder group's request (Carroll 1991; Griffin and Mahon 1997). Third, CSR depends on the social context in which the firm operates, because the "number and types of stakeholders surrounding a given set of firms are unique to the particular social environment" (Rowley and Berman 2000: 407).

### Gender Diverse Boards and Corporate Social Performance

It is generally agreed that boards of directors play a central role in corporate governance, including CSR decisions (Mason and Simmons 2014). Three important tasks are devoted to the board: monitoring, strategic decision making, and networking (Zona and Zattoni 2007). Monitoring executive officers is the primary role of the board; it aims at safeguarding the interests of shareholders from managerial opportunistic behavior (Berle and Means 1932; Jensen and Meckling 1976). The board of directors' members' skills and expertise are also valuable for the strategic decision-making process (Johnson et al. 1996; Stiles and Taylor 2001) and for developing the firm's network (Johnson et al. 1996; Pfeffer and Salancik 1978).

Board composition is an essential characteristic of the board's capacity to perform its duties and influence corporate outcomes (Johnson et al. 2013). The impact of board composition on firm's behavior has been a subject of interest of many studies (Fich and Shivdasani 2006; Lehn et al. 2009; Linck et al. 2008). One of the key aspects of board composition is its level of diversity. Diversity among group members, which has become one of the foremost topics of interest to academia and practitioners, is defined as "a characteristic of a social grouping (...) that reflects the degree to which there are objective and subjective differences between people within the group" (van Knippenberg and Schippers 2007: 519). Group and team theories suggest that the variety of perspectives in diversified groups helps to improve group decision making (Belbin 1981; Guzzo and Dickson 1996).

Much research has focused on the impact of demographic diversity on work group performance or what Pelled et al. (1999) referred to as "cognitive task performance"; that is, those tasks dealing with creative ideas, problem solving, and decision making. In this paper, we focus on the impact of a particular type of demographic diversity, GDB, on CSP. According to social role theory (Eagly 1987; Eagly and Wood 1991), women are believed to display communal qualities (generous, social oriented, and concerned with others, etc.) while men are believed to display agentic qualities (ambitious, self-directed, and aimed at personal development, etc.). In fact, each quality determines a social attitude that makes women and

men's social behaviors different. Eagly and Wood argue that "women are more socially skilled, emotionally sensitive, and expressive than men, as well as more concerned with personal relationships" (1991: 307). The authors add that men are more likely to focus on their task, while women are more inclined to be social facilitators and be oriented toward others' welfare (Eagly and Karau 1991; Major and Forcey 1985).

Previous research also shows evidence that men and women differ in terms of moral reasoning (Gilligan 1982; Jaffee and Hyde 2000). According to the cognitive moral reasoning theory (Kohlberg 1969, 1976, 1984), moral actions are guided by a cognitive process that involves moral judgment. Gilligan (1977, 1982) argues that women and men have different modes of moral reasoning. Women are more likely to be care oriented, maintaining long-term relationships, and responding to the needs of others, while men are more likely to adhere to values of justice such as promoting fairness, rights, and obligations. Many studies also document that women have higher cognitive moral reasoning scores than men (Elm et al. 2001; Eynon et al. 1997; Forte 2004). In summary, prior studies on communal qualities and moral reasoning generally provide evidence that women tend to be more socially oriented and caring for others than men.

To test this, previous studies either investigate a single CSR dimension or use an aggregate measure of CSP. For instance, Wang and Coffey (1992) and Williams (2003) find a positive association between GDB and corporate charitable giving, suggesting that women are "less business oriented" and more sensitive to CSR. Jia and Zhang (2013) document a positive relationship between the companies' response to natural disasters and GDB. Post et al. (2011) show that having three or more female directors is positively associated with environmental strengths scores. However, this study does not find any significant relationship between a critical mass of female directors and environmental concerns. While Walls et al. (2012) find that GDB reduce environmental concerns, in a more recent study, Post et al. (2015) find that the relationship between GDB and corporate environmental performance is mediated by the level of engagement in renewable energy alliances. Another set of empirical papers use an aggregate measure of CSP to investigate its link with GDB (Hafsi and Turgut 2013; Harjoto et al. 2015; Webb 2004; Zhang et al. 2013). Overall, these studies find that socially responsible firms are associated with a higher percentage of female directors.

Prior empirical studies investigating the relationship between GDB and CSP suffer from an important methodological shortcoming, i.e., ignoring the multidimensionality nature of CSR. Focusing on a single CSR dimension (Walls et al. 2012; Walton 2002) or an aggregated one (Rowley and Berman 2000) does not allow to capture the breadth of the CSR construct (Griffin and Mahon 1997). "By aggregating multiple dimensions into a composite

measure, much of the meaning and richness in the data is lost, and comparison across firms (and studies) is more difficult" (Rowley and Berman 2000: 403).

## Theoretical Framework and Hypothesis Development

Most previous studies on firm-level CSR practices rely on stakeholder theory (Donaldson and Preston 1995; Freeman 1984), which highlights the interdependencies between the firm and its stakeholders. While insightful, this theory fails to acknowledge that the influence of the various stakeholders is not equal (Fassin 2008).

In 1997, Mitchell et al. introduced their framework of stakeholder saliency. They defined stakeholder saliency as "the degree to which managers give priority to competing stakeholder claims" (1997: 854). They argued that those claims are prioritized by the firm through the use of three criteria: power, legitimacy, and urgency. Power is described as "a relationship among social actors in which one social actor A can get another social actor B, to do something that B would not have otherwise done" (Mitchell et al. 1997: 869). Legitimacy is "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman 1995: 574). Finally, urgency refers to "the degree to which stakeholder claims call for immediate attention" (Mitchell et al. 1997: 867). Power is generally considered to be the most important attribute of stakeholder saliency (Agle et al. 1999; Eesley and Lenox 2006; Mitchell et al. 1997; van Buren 2001). In this study, we rely on the fact that some stakeholders have more power than others when dealing with CSR issues.

Firms initiate social activities on the basis of their direct exchanges with their stakeholders (Chen and Roberts 2010). CSR management is driven by struggles, conflicts, and negotiations entailing the exercise of power (Campbell 2006). Vos (2003) suggests that "CSR management" has in fact evolved to become a question of "stakeholder management." Therefore, we argue that the influence of GDB on stakeholder management and CSP can only be fully understood by considering the relative power of the relevant stakeholders.

Aguilera et al. (2007) and Matten and Moon (2008) suggest that institutional theory (DiMaggio and Powell 1991) can explain how institutions empower stakeholders and guide firm's social behavior and outcomes. "The way corporations treat their stakeholders depends on the institutions within which they operate" (Campbell 2006: 926).

Firms engage in CSR activities in various degrees because they face different internal and external pressures from the institutional setting in which they are embedded (Aguilera et al. 2007). For instance, stakeholders who are

organized into coalitions such as consumer associations, labor unions, and other pressure groups exert power over the firms they are targeting (Ali 2015; Doh and Guay 2006; Fassin 2012; Vos 2003). When their claims come to be normatively and practically taken for granted as lawful, they are said to be institutionalized (Meyer et al. 1987).

Two categories of stakeholders are considered powerful by academics: employees and customers. Lantos (2001) identifies employees and customers as the two vital targets of strategic CSR and suggests that in “most cases customers and employees are the two groups whose welfare seems to be most closely linked to the business and therefore whose needs and wants should generally be given primacy” (2001: 624). While accepting this argument, we add that the reason behind this situation is that the power of both employees and customers is institutionalized. A range of institutionalized mechanisms is available to them. Employees, as a group, or their unions may go on strike, and customers may launch a boycott (Rowley and Berman 2000). For the purpose of this study, we categorize employees and customers as powerful stakeholders and other stakeholder groups such as the environment, contractors, and the community as less powerful ones.

Stakeholder prioritization made by the board can only concern these less powerful stakeholders because this is the only room to maneuver that boards have. We argue that GDB will be more inclined to address their claims. The motivations of female directors differ greatly from those of male directors. Due to their moral reasoning differences (Gilligan 1982; Jaffee and Hyde 2000), men and women do not perceive stakeholder claims in the same manner. Consequently, female directors tend to feel compelled to prioritize the claims of the less powerful stakeholders.

Based on the foregoing arguments, we predict that the impact of GDB on a firm’s CSP will be greater toward less powerful stakeholders and low or nonexistent toward more powerful stakeholders. Thus, we propose testing the following hypothesis.

H1: Gender diverse boards enhance corporate social performance toward less powerful stakeholders.

## Sample and Methodology

### Sample and Data

Our initial sample is composed of all Fortune 500 companies in the USA for which social performance was rated by Sustainalytics.<sup>2</sup> The data were compiled from four

<sup>2</sup> Sustainalytics serves investors and financial institutions across the world and maintains a network of offices in Toronto, Boston, New York, Washington D.C., Amsterdam, London, Brussels, Paris,

different sources. The social performance scores were collected from the Sustainalytics database over the period 2007–2013. Data for GDB were taken from the proprietary database of Catalyst.<sup>3</sup> We gathered the firm age data from the CRSP database, and the rest of the control variables were obtained from Bureau van Dijk’s Osiris database.

After matching between the databases, we constructed an unbalanced panel dataset of 1632 firm-year observations. Finally, we were able to match 1542 firm-year observations to perform a robustness test by using the Kinder Lydenberg Domini (KLD) database.

## Measurement of Variables

### Dependent Variable

As in previous international studies (Berrone et al. 2007; Prior et al. 2008; Surroca and Tribó 2008; Surroca et al. 2010), we measure CSP by using the ratings provided by Sustainalytics. The Sustainalytics Platform database (known as Siri PRO™ before 2009) is a global leader in environmental, social, and governance (ESG) research and analysis. The Sustainalytics scoring system uses continuous measures in eight research fields. Following previous research (Hillman and Keim 2001; Surroca et al. 2010), we retain five dimensions to measure the firm’s level of CSP, each of which refers to a relevant stakeholder (Waddock and Graves 1997): the environment, employees, contractors, customers, and the community. “Appendix” section shows the CSR dimensions evaluated by Sustainalytics.<sup>4</sup>

Footnote 2 continued

Frankfurt, Timisoara, Bucharest, Sydney, and Singapore. Moreover, it has partnerships with research firms and global leading indexes such as STOXX, SUSTINVEST, Ceres, Channel NewsAsia, CSR Asia, *Maclean’s Magazine*, *Publicaciones Semana*, and the Tellus Institute.

<sup>3</sup> Catalyst is a nonprofit organization whose mission is to accelerate progress for women through workplace inclusion. <http://www.catalyst.org/>.

<sup>4</sup> Sustainalytics assesses corporate performance using a framework consisting of both core and sector-specific indicators. Core indicators are assessed for all companies, whereas sector-specific indicators are assigned based on their relevancy and materiality to a given industry. For each indicator assigned to a company, Sustainalytics analysts assign raw scores between 0 and 100 which correspond to a specific answer category. Raw scores are then weighted according to a proprietary weight matrix. Indicators that are more relevant to a given industry are weighted more heavily.

**Table 1** Distribution of firms across years and sectors

Industry	2007	2008	2009	2010	2011	2012	2013	Total	Percentage
Consumer discretionary	13	23	30	33	39	40	47	231	14.1
Consumer staples	26	30	33	33	36	37	42	237	14.5
Energy	7	10	13	20	22	23	24	119	7.3
Financials	24	25	35	36	39	38	38	235	14.4
Health care	17	19	20	21	23	26	30	156	9.6
Industrials	25	30	39	40	45	46	50	275	16.9
Information technology	14	17	20	22	23	21	27	144	8.8
Materials	10	11	14	14	17	15	19	100	6.1
Telecommunication services	1	1	1	1	2	3	5	14	0.9
Utilities	9	9	20	20	21	21	21	121	7.4
Total	152	175	225	240	267	270	303	1632	100.0
Percentage	9.3	10.7	13.8	14.7	16.4	16.5	18.6	100.0	

### Independent Variable

As in Boulouta (2013), Kassinis et al. (2016), and Webb (2004), the variable GDB is measured as the percentage of female directors on the board.

### Control Variables

We control for the specific characteristics of the firm that are known to be associated with CSP, namely corporate governance quality, financial performance, debt, size, R&D, firm value, and firm age. CSP is deemed to be sensitive to the quality of corporate governance (Coffey and Wang 1998; Johnson and Greening 1999). We use the Sustainalytics' corporate governance scores (Corp governance) to measure the quality of corporate governance (see "Appendix" section). Also, CSP has been found to be associated with financial performance (Harjoto et al. 2015; Hillman and Keim 2001; Waddock and Graves 1997) and firm value (Carter et al. 2003). We use return on equity ratio (ROE) and Tobin's Q ratio (Tobin Q) to measure these concepts. Previous research documents that the firm's level of debt affects its CSR engagement negatively (Campbell 2007; Waddock and Graves 1997). As in Waddock and Graves (1997), we measure the firm level of debt as the ratio of the long-term debt over total assets. The size of the firm has been shown to be positively associated with CSR investment (McWilliams and Siegel 2000); we use the natural logarithm of total assets to measure firm size. The firm level of R&D intensity has also been associated with the CSR activities (McWilliams and Siegel 2000). We measure the firm's R&D intensity by the ratio of R&D expenses over total sales. Further, Jo and Harjoto (2011) have found that the age of the firm is positively associated with CSP. As in Jo and Harjoto (2011), we measure the age of the firm from the first year it appeared

in the CRSP database. Finally, we control for the financial crisis of 2008–2009 and for industry and year fixed effects.

## Results and Analyses

### Univariate Statistics and Bivariate Correlation

Table 1 presents the sector and year breakdowns of the full sample. As shown in the table, our sample firms span a wide range of the Global Industry Classifications Standard (GICS) sectors.<sup>5</sup> The number of firms captured every year ranges from 152 in 2007 to 303 in 2013. The industrials, consumer staples, financials, and consumer discretionary sectors regroup 59.9% of the total number of firms, with individual percentages of 16.9, 14.5, 14.4, and 14.1% of the total number of firms, respectively.

Table 2 displays the means, standard deviations, and Pearson's bivariate correlation coefficients of the continuous variables used in our regression analyses. The average firm has an aggregate CSP score of 59.6 on a scale between zero and 100. This score is significantly higher than those reported in previous studies that rely on the Sustainalytics database. For instance, Surroca and Tribó (2008), Prior et al. (2008), and Surroca et al. (2010) show mean values of 48.98, 47.44, and 44.99, respectively. This comparison shows that CSP has significantly improved over the years in the USA.

Table 2 also shows that firm's CSP varies from one CSR dimension to another. The mean values of the environment, employees, contractors, customers, and the community

<sup>5</sup> The GICS was developed by Standard & Poor's (S&P) and Morgan Stanley Capital International (MSCI). It classifies companies on the basis of ten industrial sectors: consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, telecommunication services, and utilities.

**Table 2** Correlation matrix and descriptive statistics of the continuous variables

	Mean	Standard deviation	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Aggregate CSP	59.6	10.3		1													
2. Environment	52.7	13.5		0.666*	1												
3. Employees	53.3	13.8		0.646*	0.375*	1											
4. Contractors	53.4	17.7		0.610*	0.415*	0.449*	1										
5. Customers	64.5	21.3		0.458*	-0.009	0.189*	-0.067*	1									
6. Community	74.1	21.1		0.624*	0.405*	0.120*	0.164*	0.049	1								
7. GDB	0.18	0.08		1.04	0.169*	0.211*	0.136*	0.202*	-0.122*	0.144*	1						
8. Corp governance	66.2	11.7		1.14	0.267*	0.270*	0.291*	0.349*	0.016	-0.019	0.164*	1					
9. ROE	0.25	3.28		1.00	0.013	0.040	0.005	-0.035	-0.016	0.048	0.006	0.026	1				
10. Debt	0.21	0.15		1.09	0.085*	0.083*	0.055	0.001	-0.003	0.121*	0.005	0.118*	0.016	1			
11. Size	10.2	1.31		1.27	-0.061	0.029	0.109*	0.040	0.049	-0.223*	0.024	-0.095*	-0.014	-0.220*	1		
12. R&D	0.02	0.05		1.12	0.147*	0.353*	0.115*	0.156*	-0.107*	0.036	0.044	0.119*	-0.001	-0.120*	-0.003	1	
13. Tobin Q	1.22	0.88		1.31	0.183*	0.157*	0.053	0.200*	-0.099*	0.243*	0.060	0.174*	0.046	0.092*	-0.392*	0.251*	1
14. Age	39.6	23.5		1.09	0.186*	0.229*	0.186*	0.211*	-0.034	0.042	0.131*	0.213*	0.045	0.130*	0.067*	-0.031	1
Mean VIF																	

\* Denote statistical significance at the 1% level

performance scores are 52.7, 53.3, 53.4, 64.5, and 74.1, respectively. The community dimension shows the highest performance, while the environment shows the lowest one.

With regard to the variable of interest, the proportion of female directors takes an average value of 18% between 2007 and 2013, which indicates the low representation of women that hold decision-making positions in the USA. Nevertheless, there has been a significant upward trend in recent years. Coffey and Wang (1998) and Webb (2004) report a proportion of female directors of 10%, while Walls et al. (2012) find 12%, Kassinis et al. (2016) report 14.25%, and Hussain et al. (2016) report 18.68%.

In terms of control variables, we observe that the average firm size measured as the natural logarithm of total assets is 10.2. This value is higher than what is reported in comparable studies by Harjoto et al. (2015) and Walls et al. (2012) that find 8.30 and 8.76, respectively, but lower than Hussain et al. (2016) and Kassinis et al. (2016) which find 11.32 and 16.12, respectively. The debt ratio takes up a mean value of 21% which is consistent with the sample of Boulouta (2013) and Kassinis et al. (2016). The mean corporate governance score is 66.2 out of 100 suggesting a fairly effective governance system among our sample of the Fortune 500 firms. The average firm age is almost 40 years old, while Harjoto et al. (2015) report an average firm age of 29 years old.

Regarding financial performance, the average ROE is 25% which is comparable with the sample of Boulouta (2013). The firms in our sample exhibit a mean Tobin's Q of 1.22, which is lower than that of Harjoto et al. (2015) and Kassinis et al. (2016). Finally, the sample firm has an average R&D intensity of 0.02 which is lower than Boulouta (2013) but comparable to Harjoto et al. (2015).

We calculated variance inflation factors (VIFs) to measure multicollinearity among the independent variables. All VIFs are lower than 1.5 which indicates that our sample is not suffering from multicollinearity issues. Inspection of the correlation matrix lends support to a positive relationship between GDB and the aggregate CSP measure ( $r = 0.169, p < 0.01$ ), a result which is consistent with the recent meta-analysis of Byron and Post (2016). As expected, we observe significant correlations between GDB and the CSR dimensions representing the less powerful stakeholders, i.e., the environment, contractors, and the community. The correlations of the CSR dimensions that represent the powerful stakeholders, namely employees and customers, behave differently from what we expected. But the association between GDB and CSR cannot be analyzed properly in isolation from other control variables. In the next section, we resort to multivariate analysis to consider this.

The quality of corporate governance is positively related to the aggregate CSP measure ( $r = 0.267, p < 0.01$ ). This

result is consistent with the idea that corporate governance is positively associated with CSP (Harjoto and Jo 2011; Jain and Jamali 2016; Jamali et al. 2008; Jo and Harjoto 2012). Also, the variable corporate governance is positively associated with the environment ( $r = 0.270, p < 0.01$ ), employees ( $r = 0.291, p < 0.01$ ), and contractors ( $r = 0.349, p < 0.01$ ). Debt is positively related to the aggregate CSP measure ( $r = 0.085, p < 0.01$ ), the environment ( $r = 0.083, p < 0.01$ ), and the community ( $r = 0.121, p < 0.01$ ). Size is positively related to employees ( $r = 0.109, p < 0.01$ ), but negatively related to the community ( $r = -0.223, p < 0.01$ ).

Also in Table 2, we observe that the level of R&D is positively related to the aggregate CSP measure ( $r = 0.147, p < 0.01$ ), the environment ( $r = 0.353, p < 0.01$ ), employees ( $r = 0.115, p < 0.01$ ), and contractors ( $r = 0.156, p < 0.01$ ), but negatively related to customers ( $r = -0.107, p < 0.01$ ). Firm value, as measured by the Tobin Q, is positively correlated with the aggregate CSP ( $r = 0.183, p < 0.01$ ), the environment ( $r = 0.157, p < 0.01$ ), contractors ( $r = 0.200, p < 0.01$ ), and the community ( $r = 0.243, p < 0.01$ ), but negatively related to customers ( $r = -0.099, p < 0.01$ ). Firm age is positively correlated with the aggregate CSP measure ( $r = 0.186, p < 0.01$ ), the environment ( $r = 0.229, p < 0.01$ ), employees ( $r = 0.186, p < 0.01$ ), and contractors ( $r = 0.211, p < 0.01$ ). In the next section, we proceed to multivariate tests to investigate the incremental effect of GDB on our dependent variables.

### Multivariate Regression Analyses

Boulouta (2013), Harjoto et al. (2015), and Kassinis et al. (2016) suggest that the relationship between GDB and CSP is endogenous. Reverse causality may exist between GDB and CSP, i.e., GDB may lead to higher CSP, but firms with higher CSP may attract and hire more female directors. To address this issue, we estimate the relationship between each CSR dimension and GDB by using a dynamic generalized method of moments (GMM) panel estimator. The GMM model is represented as a system of equations per time period. It uses lagged values of the variables to construct instruments applicable to each equation. This estimator was put forward by Holtz-Eakin et al. (1988) and Arellano and Bond (1991) and developed in Arellano and Bover (1995) and Blundell and Bond (1998). The advantage of the GMM estimation method is that it accounts for unobservable heterogeneity and simultaneity inherent to our research question and exploits the history of the firm variables to create valid instruments.

We use a two-step GMM estimation, with Windmeijer correction and a small sample correction to the covariance matrix estimate. The first step consists of writing the

dynamic model of CSR-GDB in a first-differenced form. The advantage of first differencing is that it eliminates any potential bias that may arise from time-invariant unobserved heterogeneity. The second stage of GMM estimation consists of using the lagged values of the dependent and explanatory variables as instruments for the current variables.<sup>6</sup>

Arellano and Bover (1995) propose to include the equations in levels in the second stage of the estimation procedure. This reduces the variation in the independent variables (Beck et al. 2000). It also strengthens the instruments for the first-differenced equations (Arellano and Bover 1995) and makes the dependent variable less reliant on error measurement (Griliches and Hausman 1986). Therefore, we use the system GMM estimator where we include the equations in levels in the estimation procedure and then use the first-differenced variables as instruments for the equations in levels. We test the validity of the instruments separately for the equations in levels and differences. As suggested by Roodman (2009), we use the collapse option in Stata to avoid a proliferation of the instruments.

To examine the association between GDB and each CSR dimension, we estimate the following GMM regression model:

$$\begin{aligned} \begin{bmatrix} \text{CSP}_{it} \\ \Delta \text{CSP}_{it} \end{bmatrix} &= \alpha + k \begin{bmatrix} \text{CSP}_{it-n} \\ \Delta \text{CSP}_{it-n} \end{bmatrix} + \beta_1 \begin{bmatrix} \text{GDB}_{it} \\ \Delta \text{GDB}_{it} \end{bmatrix} \\ &+ \beta_2 \begin{bmatrix} \text{GOV}_{it} \\ \Delta \text{GOV}_{it} \end{bmatrix} + \beta_3 \begin{bmatrix} \text{ROE}_{it} \\ \Delta \text{ROE}_{it} \end{bmatrix} \\ &+ \beta_4 \begin{bmatrix} \text{Risk}_{it} \\ \Delta \text{Risk}_{it} \end{bmatrix} + \beta_5 \begin{bmatrix} \text{Size}_{it} \\ \Delta \text{Size}_{it} \end{bmatrix} \\ &+ \beta_6 \begin{bmatrix} \text{R\&D}_{it} \\ \Delta \text{R\&D}_{it} \end{bmatrix} + \varepsilon_{it} \end{aligned}$$

Table 3 presents the results of the GMM estimations. Based on 1632 firm-year observations, model 1 indicates a positive association between GDB and the aggregate measure of CSP ( $b = 8.376, p < 0.05$ ). Consistent with our hypothesis, models 2, 4, and 6 show that GDB are significantly associated with CSP with regard to the less powerful stakeholders, namely the environment ( $b = 11.530, p < 0.05$ ), contractors ( $b = 15.883, p < 0.01$ ), and the community ( $b = 27.586, p < 0.01$ ). Also, we show that GDB have no influence on the powerful stakeholders, namely employees and customers.

Contrary to expectations, the quality of corporate governance is negatively related to the firms' aggregate CSP as well as the environment, customers, and the community dimensions; but positively related to the employees and

contractors dimensions. Debt is positively associated with aggregate CSP suggesting that, contrary to previous results, indebted firms tend to increase their CSR engagement; the results also show that the firm level of debt is positively associated with the employees and customers dimensions. Firm size is positively related to the employees and customers dimensions and negatively associated with the community dimension. The level of R&D is generally not related to CSP except for a positive association with the environmental performance. Firm value (Tobin Q) is positively associated with aggregate CSP, which is in accordance with Jo and Harjoto (2011), and three CSR dimensions, namely the environment, contractors, and the community. We find that firm age is positively associated with aggregate CSP which is also consistent with the findings of Jo and Harjoto (2011). We also find that firm age is positively associated with the environment, customers, and the community dimensions. One possible explanation for these results is that older firms are well established and tend to engage in more CSR activities. Finally, the financial crisis of 2008 had varied impact on the CSR dimensions. We find a positive relationship with the environment and the community dimensions, but a negative association with the employees and contractors dimensions.

All models show nonsignificant second-order serial correlations between the instruments. The models also present nonsignificant Hansen's level and difference tests, which indicates the absence of any over-identification problem.

### Robustness Check

To test the robustness of our results, we use an alternative measurement of CSP. We use the Kinder Lydenberg Domini's (KLD) CSR metrics to measure CSP. KLD has been widely used in CSR research (Boulouta 2013; Hafsi and Turgut 2013; Harjoto et al. 2015; Post et al. 2011; Waddock and Graves 1997). It assesses seven CSP categories, namely the community, corporate governance, diversity, employee relations, the environment, human rights, and product-related social issues.

In each category, KLD distinguishes between CSR strengths and CSR concerns by using a binary rating, 1 if the firm meets the strength/concern criteria, and 0 otherwise. Only three dimensions match with the Sustainalytics database, the environment, employees, and the community. All the dimensions are computed by calculating the difference between the number of "strengths" and the number of "concerns." As with Sustainalytics, we calculated an aggregate score by computing the average of these three dimensions. Our final sample contains 1542 firm-year observations. The results of the GMM estimation method

<sup>6</sup> To avoid cluttering, lagged variables are not displayed in the tables.



**Table 3** GMM regressions of GDB on Sustainability corporate social performance scores

	Model 1 Aggregate CSP	Model 2 Environment	Model 3 Employees	Model 4 Contractors	Model 5 Customers	Model 6 Community
GDB	8.376 (0.035)**	11.531 (0.047)**	5.529 (0.480)	15.883 (0.007)***	-11.575 (0.172)	27.586 (0.004)***
Corp governance	-0.106 (0.001)***	-0.260 (0.000)***	0.173 (0.000)***	0.183 (0.000)***	-0.137 (0.025)**	-0.502 (0.000)***
ROE	-0.014 (0.497)	-0.027 (0.471)	-0.005 (0.916)	-0.080 (0.200)	-0.053 (0.244)	0.129 (0.401)
Debt	4.365 (0.049)**	5.057 (0.173)	9.035 (0.063)*	-2.206 (0.501)	9.689 (0.031)**	7.115 (0.351)
Size	0.254 (0.447)	0.372 (0.398)	2.778 (0.000)***	0.353 (0.479)	2.000 (0.003)***	-1.895 (0.021)**
R&D	0.277 (0.966)	26.057 (0.002)***	-7.776 (0.486)	-3.700 (0.721)	-1.737 (0.891)	-7.880 (0.633)
Tobin Q	1.263 (0.008)***	1.472 (0.012)**	1.392 (0.116)	2.475 (0.005)***	0.137 (0.875)	3.337 (0.002)***
Age	0.038 (0.045)**	0.096 (0.000)***	0.021 (0.480)	-0.011 (0.702)	0.094 (0.009)***	0.185 (0.000)***
Crisis	0.6632 (0.151)	2.1522 (0.000)***	-4.0502 (0.000)***	-1.5579 (0.002)***	1.1448 (0.218)	3.9823 (0.000)***
Constant	7.571 (0.083)*	13.244 (0.013)**	-21.955 (0.007)***	-6.721 (0.307)	-3.564 (0.605)	54.322 (0.000)***
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of firms	325	325	325	325	325	325
Number of instruments	129	129	127	129	129	129
<i>F</i>	145.89	154.63	40.83	119.61	111.14	100.67
Prob > <i>F</i>	0.000	0.000	0.000	0.000	0.000	0.000
AR(1)	-8.40	-8.04	-6.60	-6.70	-8.66	-8.20
AR(2)	-.64	-.10	1.39	0.52	1.14	-1.17
AR(1) <i>p</i> value	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) <i>p</i> value	0.520	0.918	0.164	0.604	0.254	0.244
Hansen for level	42.92	59.20	36.01	60.19	52.31	64.43
Hansen for level <i>p</i> value	0.90	0.360	0.978	0.327	0.615	0.205
Hansen for difference	51.95	40.11	51.12	43.84	40.65	56.30
Hansen for difference <i>p</i> value	0.629	0.946	0.624	0.881	0.939	0.464
<i>N</i>	1632	1632	1632	1632	1632	1632

*p* values in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

are displayed in Table 4. The main results are in accordance with those reported in the previous table. We observe that the GDB variable is positively associated with the aggregate measure of CSP ( $b = 1.547$ ,  $p < 0.05$ ) and the two dimensions that represent the less powerful stakeholders, namely the environment ( $b = 3.098$ ,  $p < 0.01$ ) and the community ( $b = 1.392$ ,  $p < 0.01$ ). Regarding the control variables, we find that corporate governance negatively affects the aggregate measure of CSP and the environment. The results also show that the

firm level of debt is positively associated with the employees' dimension. The size of the firm is positively correlated with the employees and the community dimensions. The level of R&D is positively associated with the aggregate measure of CSP and the environment, employees, and the community dimensions. Age is positively related to the environment. Finally, the financial crisis of 2008 is negatively associated with the aggregate measure of CSP and the environment, employees, and the community dimensions. As in Table 3, the appropriate tests show

**Table 4** GMM regressions of GDB on KLD corporate social performance scores

	Model 1 Aggregate CSP	Model 2 Environment	Model 3 Employees	Model 4 Community
GDB	1.547 (0.012)**	3.098 (0.001)***	0.156 (0.913)	1.392 (0.005)***
Corp governance	-0.004 (0.010)**	-0.009 (0.003)***	0.005 (0.137)	-0.001 (0.540)
ROE	0.004 (0.638)	-0.005 (0.582)	0.016 (0.506)	-0.002 (0.555)
Debt	-0.452 (0.113)	-0.594 (0.139)	1.364 (0.039)**	0.077 (0.711)
Size	0.036 (0.496)	-0.005 (0.949)	0.354 (0.006)***	0.056 (0.061)*
R&D	4.856 (0.000)***	3.986 (0.006)***	7.618 (0.001)***	1.587 (0.032)**
Tobin Q	0.027 (0.721)	0.095 (0.340)	0.088 (0.660)	0.056 (0.209)
Age	0.001 (0.485)	0.012 (0.000)***	-0.003 (0.550)	0.003 (0.167)
Crisis	-0.446 (0.000)***	-0.715 (0.000)***	-0.336 (0.018)**	-0.228 (0.000)***
Constant	-0.016 (0.980)	0.313 (0.734)	-4.122 (0.018)**	-0.652 (0.099)*
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Number of firms	311	311	311	311
Number of instruments	108	128	80	122
<i>F</i>	48.33	73.80	6.07	35.76
Prob > <i>F</i>	0.000	0.000	0.000	0.000
AR(1)	-6.62	-8.55	-6.20	-5.03
AR(2)	-1.59	-1.27	-1.39	-1.09
AR(1) <i>p</i> value	0.000	0.000	0.000	0.000
AR(2) <i>p</i> value	0.112	0.203	0.165	0.275
Hansen for level	55.30	60.89	20.66	60.21
Hansen for level <i>p</i> value	0.164	0.305	0.939	0.231
Hansen for difference	34.78	46.97	18.41	65.65
Hansen for difference <i>p</i> value	0.887	0.800	0.974	0.114
<i>N</i>	1542	1542	1542	1542

*p* values in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

that our models do not suffer from serial correlations between the instruments or over-identification.

## Discussion and Conclusion

In times of intense debates about CSP and the role of female directors on board effectiveness, this study contributes to both theory and practice by considering CSR's multidimensionality and the institutionalized nature of certain stakeholders' power. Using a sample of Fortune 500

companies in the USA, we examine the influence of GDB on five CSR stakeholders: the environment, employees, contractors, customers, and the community. After controlling for endogeneity, we find that the link between GDB and CSP varies from one CSR dimension to another. Specifically, we demonstrate that due to the institutionalization of certain CSR practices and the resulting empowerment of certain stakeholders, GDB only have an impact on those stakeholders who have limited power over the firm, i.e., the environment, contractors, and the community.

Our study responds to a long-standing call for an in-depth look at CSR’s multidimensionality (Boulouta 2013; Godfrey and Hatch 2007; Griffin and Mahon 1997; Johnson and Greening 1999; Rowley and Berman 2000) and furthers the understanding of the link between GDB and CSP in two ways. First, we examine the relationships between GDB and five CSR dimensions that represent different stakeholder groups. Second, we take into account the power dynamic between GDB and the firm’s stakeholders by distinguishing between powerful and less powerful stakeholders and by showing how the institutional context empowers the former and limits the directors’ room to maneuver in the case of employees and customers.

This study is not without limitations. Our sample is composed of the largest US companies. Future research should investigate the relationship between GDB and CSP among smaller firms and in other countries where the distribution of power between stakeholders may be different from the USA.

**Acknowledgements** The authors gratefully acknowledge financial support from the Social Sciences and Humanities Research Council of Canada (Grant No. 410-03-1046), the Institute of Governance in Public and Private Organizations, and the Stephen A. Jarislowsky Chair in Governance. We are also grateful to the Catalyst organization for their support. The usual caveat applies.

**Appendix**

See Table 5.

**Table 5** Sustainability CSR dimensions and corporate governance items

Environment
Public Reports and Communications
Public reporting on environmental issues
Public reporting externally verified
Principles and Policies
Environmental policy
Formal policy statement on green procurement
Formal policy statement on use of certified forestry product
Public position statement on transport and climate change
Public position statement on energy mix
Management Systems
Percentage of ISO 14001 certified sites
Targets and programs for environmental improvement of suppliers
Targets and programs for CO2 eq emission reduction and/or energy consumption
Targets and programs to increase the use of renewable energy
Targets and programs to reduce air emissions
Targets and programs to reduce hazardous waste generation

**Table 5** continued

Environment
Targets and programs to reduce non-hazardous waste generation
Targets and programs to reduce discharge to water
Targets and programs to reduce water consumption
Targets and programs to reduce material consumption
Targets and programs to phase out use of hazardous substances
Targets and programs to phase out CFCs/HCFCs in refrigeration equipment
Targets and programs to replace chlorine bleaching
Targets and programs to increase percentage of certified pulp/wood operations
Targets and programs to increase use of environmentally friendly paper
Targets and programs to improve the environmental performance of fleets and transport
Targets and programs to reduce emissions of transport means
Targets and programs to reduce the noise characteristics of transport
Targets and programs to phase out production of hazardous substances
Targets and programs to reduce the energy consumption of products
Targets and programs to reduce the impact of products at the end of the production cycle
Targets and programs to reduce the environmental toxicity of products
Targets and programs to reduce packaging materials
Targets and programs to increase the sale of eco-labeled/organic products
Targets and programs to reduce CO2 eq emissions of the fleets
Programs that offer favorable financial conditions for environmentally friendly projects
Programs to take into account environmental impact of products in investment decision
Performance
Percentage of ISO 14001 certified suppliers
Data on CO2 eq emissions
Data on renewable energy consumption
Data on air emissions
Data on hazardous waste generation
Data on non-hazardous waste
Data on discharge to water
Data on oil spills
Data on water consumption
Data on material consumption
Data on percentage of certified pulp or wood of total consumption/production
Data on percentage of recycled fiber as raw material
Percentage of FSC paper
Percentage of recycled paper used
Percentage of renewable energy sold
Data on assets managed according to SRI criteria

**Table 5** continued

Environment
Data on total number of environmental fines and penalties
Total land disturbed and not yet rehabilitated
Percentage of sales from eco-labeled/organic products
Environmentally friendly construction materials
Environmentally friendly building products
Products beneficial to the environment
Percentage of loans with detailed environmental examination
Percentage of environmentally oriented loans
Percentage of transactions with detailed environmental examination
Percentage of transactions with high environmental benefits
Percentage of investments in non-listed pioneer companies with high environmental benefits
Percentage of premium volumes or number of policies with environmental incentives
Employees
Public Reports and Communications
Public reporting on employees' issues
Public reporting externally verified
Principles and Policies
Formal policy on freedom of association and right to collective bargaining
Formal policy on elimination of discrimination
Formal policy statement on HIV/AIDS
Formal policy statement on minimum living wages
Formal policy statement on maximum working hours
Management Systems
Targets and programs to increase diversity in the workforce
Targets and programs on health and safety
Percentage of health and safety certification
Performance
Data on layoffs and job cuts
Percentage of employees with fixed-term contracts
Data on lost-time illness rate
Data on lost-time incident rate
Data on total number of fatalities
Contractors
Public Reports and Communications
Public reporting on contractors' issues
Public reporting externally verified
Principles and Policies
Formal policy statement on contractors and social issues
Formal policy on core labor issues
Management Systems
Monitoring systems to ensure compliance
Translation and dissemination of the policy statements
Labor issues from a clause in standard procurement contracts
Targets and programs to increase the sale of fair-trade products
Performance

**Table 5** continued

Environment
Number of non-compliance
Percentage of SA8000 certified suppliers
Percentage of fair-trade products
Customers
Public Reports and Communications
Public reporting on customers' issues
Public reporting externally verified
Principles and Policies
Formal policy statement on quality or customer satisfaction
Editorial policy
Formal policy statement on advertising ethics
Adherence to WHO Ethical Criteria for Medicinal Drug Promotion
Position statement on the use of GMOs
Public position statement on debate over health consequences of food
Public position statement on responsible marketing
Management Systems
Percentage of ISO 9000 certified sites
GMO labeling practice
Drug safety monitoring for any product
Performance
Data on product recalls (for health/safety reasons)
Community
Public Reports and Communications
Public reporting on community issues
Public reporting externally verified
Principles and Policies
Formal policy statement on operation in sensitive countries
Formal policy statement on origin of coltan
Formal policy statement on human rights and security forces
Public position statement on access to economic opportunity
Public position statement on access to basic needs
Management Systems
Guidelines for philanthropic activities
Independent assessment of community projects in developing count
Formal programs for engagement or consultation with communities
Targets and programs for community reinvestments
Performance
Percent donations
Primary areas of support
Actual disclosure of payments (EITI)
Microfinance activities
Corporate Governance
Public Reports and Communications
Directors' biographies
Directors' and/or CEO's remuneration/compensation

**Table 5** continued

Environment
Principles and Policies
Formal policy statement on remuneration
Management Systems
Separate position for chairman of board and CEO
Number of independent NEDs in the Board (and%)
Audit committee composition
Remuneration/compensation committee composition
Variable remuneration linked to sustainability performance
Performance
The company adheres to the one share, one vote principle
% non-audit fees of audit fees

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