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Analysis

When Does Corporate Sustainability Performance Pay off? The Impact of Country-Level Sustainability Performance

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ABSTRACT

There has been considerable debate on and research efforts into the question as to if, and if so when, improving corporate sustainability performance is not only beneficial for social and environmental wellbeing but also for the financial wellbeing of a firm. So far, the literature has reported mixed results on the relationship between corporate sustainability and financial performance. Drawing on instrumental stakeholder theory, we develop a focal hypothesis arguing that the financial effect of corporate sustainability performance is negatively impacted by country-level sustainability performance because stakeholders will take a firm's sustainability improvement for granted in countries with good social and environmental performance. We test this focal hypothesis in a cross-country setting drawing on the 6th International Manufacturing Strategy Survey. The current study supplements these data with secondary data drawn from the Human Development Index and the Environmental Performance Index. The results support our hypothesis that firms in countries with higher levels of sustainability performance generally find it more difficult to capitalize on corporate sustainability performance than do their counterparts in countries with relatively low levels of sustainability performance. This outcome helps to explain the mixed findings in the literature. Moreover, our study suggests that sustainability management can be a source of competitive advantage for firms located in emerging and developing countries, where in general the level of sustainability performance is relatively low.

1. Introduction

Managers and researchers around the globe acknowledge that it is crucial for firms to improve their corporate sustainability performance (CSP), which indicates a firm's contribution to environmental protection and social development (Wagner, 2010). However, there is less unanimity regarding the financial benefits that can be expected from such improvements. This study argues that stakeholder responses to CSP improvements are influenced by the *country-level sustainability performance*, a measure of how well a country performs in terms of high-priority social and environmental issues (Siche et al., 2008; Wagner, 2010). Specifically, we submit that CSP improvements can be financially effective in countries with relatively low levels of sustainability performance, whereas similar investments may have very limited financial effect in countries with high levels of sustainability performance.

Empirical studies exploring the relationship between CSP and corporate financial performance (CFP) have variously reported positive,

non-significant, and even negative results (Margolis et al., 2007; Flammer, 2015). This indicates that even after more than thirty years of research, there is no clear answer to the question as to whether CSP pays off (Barnett, 2007). In their attempts to explain these mixed results, researchers have explored how firm-level factors, such as engagement strategy (Tang et al., 2012) and stakeholder influence capacity (Barnett and Salomon, 2012), may impact on the CSP-CFP relationship. In contrast, systematic reviews of the relevant literature (Lee, 2008; Aguinis and Glavas, 2012) show that researchers have barely explored the potential impact of societal factors on this relationship, even though it is widely accepted that the financial effect of CSP is primarily rooted in firm-society interactions and positive stakeholder responses (Jones, 1995; Barnett, 2007). As Arya and Zhang (2009) and Aguinis and Glavas (2012) put it, without a clear understanding of societal impact on the financial effect of CSP, knowledge regarding the CSP-CFP relationship can, at best, be described as partial. This study aims to close this gap and explores societal impact on the financial effect of CSP.

Abbreviations: CFP, corporate financial performance; CLSP, country-level sustainability performance; CSP, corporate sustainability performance; EPI, environmental performance index; HDI, human development index; HLM, hierarchical linear modeling; IMSS VI, the 6th International Manufacturing Strategy Survey

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Our focus on societal impact is further inspired by several pairs of empirical studies on the CSP-CFP relationship in developed countries, e.g., [Shane and Spicer \(1983\)](#) versus [David Diltz \(1995\)](#), and [Spicer \(1978\)](#) versus [Pava and Krausz \(1996\)](#). The earlier study in both pairs found positive CSP-CFP relationships, whereas the more recent studies did not find support for such relationships in similar contexts using similar measurements. It is plausible that country-level sustainability performance could explain this apparent inconsistency in the CSP-CFP relationship. In the 1970s and 1980s the sustainability performance of developed countries was generally low. Although there was little external pressure to improve CSP, firms that did so could gain significant financial benefits because these improvements could advance firm-stakeholder relationships ([Jones, 1995; Barnett, 2007](#)). Since then, developed countries have enforced laws and regulations on environmental integrity and social equity, and there have been substantial improvements in sustainability performance over the past two decades. As a consequence, stakeholders are no longer that sensitive and responsive to firms improving their social and environmental performance, making it difficult for firms to gain financial benefits from such improvements ([Barnett, 2007](#)). Based on these observations and reasoning, we hypothesize that country-level sustainability performance can negatively influence the financial effect of CSP. To test this, this study evaluates the CSP-CFP relationship in a cross-country setting drawing on the data of the 6th International Manufacturing Strategy Survey (IMSS VI), which are gathered in 22 countries characterized by considerable differences in country-level sustainability performance.

This study makes an important contribution to the CSP literature by extending it to include country-level sustainability performance in the CSP-CFP relationship. So far, researchers have mainly focused on firm-level factors that may impact on the financial effect of CSP. In reality, CSP is an area of extensive and enduring firm-society interactions ([Matten and Moon, 2008; Lee, 2008](#)) and the financial effect of CSP largely stems from these firm-society interactions ([Jones, 1995; Barnett, 2007](#)). As such, this study provides novel insights into the contingent relationship between CSP and CFP, and it contributes to a more nuanced understanding of the financial effect of CSP. Moreover, this study contributes to the literature by testing the CSP-CFP relationship in a sample of manufacturers located in 22 countries. Our findings show that the financial effect of corporate sustainability performance differs across countries. As such, we suggest that a global approach toward sustainable development should also take into account country differences.

The remainder of this paper is structured as follows. The second section introduces the theoretical foundation of the CSP-CFP relationship and various studies that have addressed the mixed financial effects of CSP. Further, this section also introduces country-level sustainability performance and develops the hypotheses of this study. The characteristics of the dataset used and the statistical methods applied are discussed in the third section. The fourth section reports the results. The fifth section discusses the implications of the findings for CSP theories and practices, the limitations of this study, and research avenues that are worthy of further exploration. The final section draws conclusions.

2. Theoretical Foundation and Hypothesis Development

This section consists of two subsections. In the first, we briefly introduce corporate sustainability performance and the mechanism through which CSP improvements can contribute to corporate financial performance, and discuss the firm-level factors that have been found to influence the CSP-CFP relationship. The second subsection introduces country-level sustainability performance and discusses how this factor can impact on the financial effect of CSP.

2.1. The CSP-CFP Relationship

CSP reflects a firm's impact on society, including employees,

customers, suppliers, and local communities, and on the natural environment ([Hillman and Keim, 2001; Matten and Moon, 2008](#)). As such, CSP is conceptualized as a broad construct consisting of social/human and environmental dimensions ([Perrini et al., 2011](#)). The environmental aspect of CSP is relatively well understood and covers the issues of resource preservation, energy consumption, waste minimization, and emission/pollution abatement ([Krause et al., 2009; Wagner, 2010](#)). The social or human aspect of CSP has a broader scope and concerns poverty alleviation, health and safety of employees, protection of human rights, and participation in diverse social initiatives ([Krause et al., 2009; Perrini et al., 2011](#)).

Several theories have argued for a positive CSP-CFP relationship, such as resource productivity theory ([Porter and van der Linde, 1995](#)), the natural resource-based view of the firm ([Hart, 1995; Russo and Fouts, 1997](#)), and instrumental stakeholder theory ([Jones, 1995; Barnett, 2007](#)). Among them, instrumental stakeholder theory has been more intensively used and empirically tested. More importantly, given its focus on stakeholders it fits with the notion that CSP is shaped within a societal context and in interaction with the firm's environment. Instrumental stakeholder theory argues that CSP improvements can contribute to CFP by advancing a firm's relationships with its internal and external stakeholders ([Barnett, 2007; Jones, 1995](#)). In more detail, it is argued that internal stakeholders such as shop-floor workers and managers will respond positively to a firm's CSP improvements, such as initiatives to manage occupational health/safety risks and programs on work-life balance ([Jones, 1995; Wicks et al., 1999](#)). These favorable responses lead to improved human capital and innovation capability for firms, which in turn can result in reduced costs and better financial performance ([Perrini et al., 2011](#)). Similarly, CSP improvements can deliver positive signals to external stakeholders, such as customers, non-governmental organizations (NGOs), the general public, and governmental agencies, about a firm's commitment to social and environmental wellbeing ([Perrini et al., 2011](#)). These stakeholders will take these improvements (e.g., environmental protection and charitable giving) as evidence that the firm is trustworthy and reliable. Such firms can benefit from an improved reputation and customer satisfaction through charging price premiums and the expanded marketing opportunities ([Luo and Bhattacharya, 2006; Perrini et al., 2011; Surroca et al., 2010](#)). This is summarized in our first hypothesis:

Hypothesis 1. *There is a positive relationship between corporate sustainability performance and corporate financial performance.*

2.2. The Impact of Country-Level Sustainability Performance on the CSP-CFP Relationship

Although the theoretical framework underpinning the CSP-CFP relationship outlined above is widely accepted ([Barnett, 2007](#)), systematic reviews ([Margolis et al., 2007; Orlitzky et al., 2003](#)) show that the large number of empirical studies testing this relationship have produced mixed results. The mixed findings, summarized by [Barnett \(2007\)](#) and [Margolis and Walsh \(2003\)](#), indicate that CSP can have varying financial effects across firms and contexts. As a result, researchers have started to explore the potential contingencies that might influence the financial effect of CSP ([Barnett and Salomon, 2012; Servaes and Tamayo, 2013; Tang et al., 2012; Wang and Choi, 2013](#)). Several firm-level factors have been identified, including stakeholder influence capability ([Barnett and Salomon, 2012](#)), customer awareness ([Servaes and Tamayo, 2013](#)), and engagement strategy ([Tang et al., 2012](#)). For instance, [Barnett and Salomon \(2012\)](#) found that the CSP-CFP relationship is positively moderated by stakeholder influence capacity, defined as the ability of a firm to “identify, act on, and profit from opportunities to improve stakeholder relationships through corporate social responsibility” (p. 1306).

In addition to these firm-level factors, factors and developments related to sustainability performance at the country level can also

influence the financial effect of CSP. It is notable that the CSP literature presents a pattern where the CSP-CFP relationship seems to be weakening over time. For instance, [Luck and Pilotte \(1993\)](#) and [Hillman and Keim \(2001\)](#) retested the CSP-CFP relationship in the large US publicly traded companies included in the Kinder, Lydenberg, and Domini (KLD) database using the same measurements. However, whereas [Luck and Pilotte \(1993\)](#) found a significant positive relationship, [Hillman and Keim \(2001\)](#) found a less clear relationship. Similar contrasting findings are to be found in [Shane and Spicer \(1983\)](#) versus [David Diltz \(1995\)](#), [McGuire et al. \(1988\)](#) versus [Brown \(1997\)](#), and [Spicer \(1978\)](#) versus [Pava and Krausz \(1996\)](#). This observation can be related to what has been labelled as country-level sustainability performance, which reflects the extent to which the tenets, principles, and practices of environmental integrity and social equity are institutionalized and embedded in a specific country domain ([Campbell, 2006](#); [Moon, 2014](#)).

Seeing country-level sustainability performance as a factor in the CSP-CFP relationship provides a plausible explanation for the variation in this relationship presented above. Country-level sustainability performance reflects how well high-priority social issues (e.g., alleviation of poverty, education promotion, protecting human rights, and improving living standards) and environmental issues (e.g., resource conservation, pollution abatement, and eco-efficiency) have been addressed in a country ([Siche et al., 2008](#); [Wagner, 2010](#)). As the overall social and environmental performance of a country improves, internal stakeholders such as employees, are likely to respond less positively to a firm's CSP improvements, because internal stakeholders will increasingly see it as a firm's fiduciary duty to contribute to environmental integrity and social equity. Consequently, improving a firm's social and environmental performance will gradually lose the potential to stimulate internal stakeholders' participation, collaboration, and knowledge creation/sharing. Similarly, as the overall social and environmental performance is improved in a country, improvements in a firm's CSP will gradually lose the potential to help the firm to expand marketing opportunities and charge price premiums. The main reason is that external stakeholders, including customers, the general public, NGOs, and governmental agencies, will become less sensitive and responsive to a firm's contribution to environmental integrity and social equity as these become progressively institutionalized and taken-for-granted in a country.

We use environmental protection, a crucial aspect of sustainable development ([Delmas and Toffel, 2008](#); [Sarkis et al., 2010](#)), to illustrate this effect. When a country is suffering from problems caused by environmental degradation, firms contributing to environmental protection will be rewarded with positive responses from a wide range of stakeholders, including their employees, customers, NGOs, and the general public. These positive responses from internal and external stakeholders help to generate financial returns ([Barnett, 2007](#); [Flammer, 2015](#); [Jones, 1995](#); [Oikonomou et al., 2014](#)). As the government enforces the laws on environmental protection, and environmentally friendly practices are widely adopted by firms, various groups of stakeholders will gradually come to see environmental protection as the norm. In other words, the social expectations of environmental contributions from firms will grow. Internal and external stakeholders will become less sensitive and responsive to firms' efforts to reduce their environmental impact. Consequently, firms will find it increasingly difficult to advance the firm-stakeholder relationship through improving environmental performance. Firms that try to outperform the social expectations on environmental performance may well incur additional costs that outweigh the potential benefits from these improvements. Hence the financial effects will at best be neutral.

To summarize, if the overall sustainability performance of a country improves, firms located in that country will generally find it increasingly difficult to advance firm-stakeholder relationships through contributing to social and environmental wellbeing. That is, CSP improvements will lose the value of contributing to corporate reputation, customer satisfaction, innovation capabilities, and human capital, i.e.,

the intangible assets that can benefit financial performance ([Perrini et al., 2011](#); [Surroca et al., 2010](#)). Consequently, the financial effect of CSP will decrease as a country's sustainability performance improves. This argument is summarized in the following hypothesis.

Hypothesis 2. *Country-level sustainability performance negatively moderates the positive relationship between CSP and CFP. In other words: In countries whose sustainability performance is relatively poor, the CSP-CFP relationship will be significantly positive, while this relationship will be less positive in countries that have achieved high levels of sustainability performance.*

3. Method

3.1. Sample and Data

The sample used in this study is drawn from the 6th International Manufacturing Strategy Survey (IMSS VI). The IMSS is a research project carried out every four years by a global network of researchers that provides cross-sectional data on manufacturing strategy within the discrete manufacturing industry (ISIC 25–30) through a detailed questionnaire administered in multiple countries by local research groups. The original questionnaire was developed in English and the same questionnaire was translated into local languages to facilitate data collection. The most recent round of survey (IMSS VI) was administered in 2013 and contained 931 valid responses from 22 countries, including developed countries such as Germany and the Netherlands, and developing countries such as China and India (See Appendix for an overview of the countries and number of cases from each country). As responses with missing values were not included in the analysis of this study, 811 out of the 931 cases were used in this study. These 22 countries differ substantially in terms of their economic, social, and institutional development. Moreover, the more-developed countries have relatively good social and environmental performance ([Schultz and Wehmeier, 2010](#)), while developing countries such as China ([Yin and Zhang, 2012](#)) and India ([Chapple and Moon, 2005](#)) are still struggling with many social and environmental problems. As such, IMSS VI provides us with a cross-country setting characterized by considerable differences in country-level sustainability performance (See Appendix for an overview of the social/environmental performance of these 22 countries), and it can serve as an appropriate empirical setting for testing our research hypotheses.

3.2. Measurements

3.2.1. Corporate Sustainability Performance (CSP)

Corporate sustainability performance (CSP) indicates a firm's contribution to environmental protection and social development and consists of social and environmental dimensions ([Wagner, 2010](#)). We have used four IMSS VI items to form a measure of a firm's CSP. These four items consist of two social indicators, i.e., *workers' motivation and satisfaction* ([Gimenez et al., 2012](#)), and *health and safety condition* ([Pagell and Gobeli, 2009](#)), and two environmental indicators, i.e., *materials, water, and/or energy consumption* ([Rao, 2002](#)), and *pollution emission and waste production levels* ([Zhu and Sarkis, 2004](#)). We see these four items as adequately reflecting a firm's impact on society and on the natural environment.

In the IMSS VI, respondents (mainly directors of operations or manufacturing) were requested to evaluate their firm's improvements in terms of these four aspects over the previous three years (between 2009 and 2012). The two social indicators are measured on a five-point scale with a score of 1 representing a decrease in performance (by at least 5%) and 5 representing a strong improvement (by at least 25%). With the two environmental indicators, a score of 1 represents a decrease in environmental performance (an increase in consumption or pollution of at least 5%) and 5 represents a strong improvement (at

least a 25% reduction in consumption or pollution). An explorative factor analysis indicated that these four items loaded satisfactorily onto one underlying factor. The Cronbach's alpha was 0.72, indicating acceptable within-scale reliability. We consequently aggregated and averaged these four indicators to provide a net score for CSP improvement for each firm.

3.2.2. Corporate Financial Performance (CFP)

Corporate financial performance (CFP) indicates the overall financial wellbeing of a firm over a certain period of time, and it can be used to compare similar firms in the same industry or to compare industries in different sectors. We measured CFP using return-on-sales (ROS), which is defined as *earnings before interest and taxes divided by total sales* (Venkatraman and Ramanujam, 1986). This approach is commonly found in the literature (Julian and Ofori-Dankwa, 2013; Pelozo, 2009). It is argued that CSP can contribute to CFP through reducing transaction costs and increasing price premiums (Perrini et al., 2011). Therefore, we believe that the financial effect of CSP should be reflected in a change of the ROS. In IMSS VI, respondents were asked to evaluate the improvement of their firm's ROS over the past three years using a five-point Likert scale, ranging from 1 (much lower) to 5 (much higher). Such a single-item metric can be used when the measure is clear and directly interpretable by respondents (Bergkvist and Rossiter, 2007; Power et al., 2015), as is the case of this study.

3.2.3. Country-Level Sustainability Performance (CLSP)

Country-level sustainability performance (CLSP) measures how well a country performs in terms of high-priority social and environmental issues (Siche et al., 2008; Wagner, 2010). In this study, we used the Human Development Index (HDI) developed by the United Nations Development Program and the Environmental Performance Index (EPI) developed by Yale University to reflect country-level sustainability performance (See the Appendix for more detail). The HDI captures a country's overall performance in terms of three important social issues: per capita income as a proxy for living quality, life expectancy at birth as a proxy for health achievement, and adult literacy together with educational enrolment as a proxy for educational attainment (Neumayer, 2001). The HDI is seen as concisely reflecting the overall social sustainability performance of a country (Sagar and Najam, 1998). Similarly, the EPI ranks how well countries perform in terms of high-priority environmental issues in two areas: protection of human health from environmental harm (including health impacts, air quality, water, and sanitation) and protection of the ecosystem (including water resources, agriculture, forests, fisheries, biodiversity and habitat, and climate and energy). As such, the EPI reflects the overall environmental sustainability performance of a country. As sustainability covers both social and environmental issues, we combined HDI and EPI to reflect a country's overall sustainability performance. The HDI scale ranges from 0 to 1, and the EPI scale ranges from 0 to 100. We rescaled the EPI to range from 0 to 1 and added these two indexes to reflect the country-level sustainability performance with a scale ranging from 0 to 2.

3.2.4. Control Variables

Our aim was to explore how country-level sustainability performance moderates the CSP-CFP relationship, with CFP as the focal dependent variable in this study. Therefore, we needed to control for other variables that have been argued to exert significant impact on CFP, as is measured by ROS in this study. Following this principle, we identified three control variables: firm size (Orlitzky, 2001), market size dynamics (Campbell and Hopenhayn, 2005), and technological dynamics (Porter, 2008) that have all been argued or found to influence the profitability of firms. Firm size is measured as the number of employees. Respondents were asked to evaluate market size dynamics (the rate of market growth or decline in the industry) using a five-point Likert scale with 1 representing “declining rapidly” and 5 representing “growing rapidly”. Similarly, technological dynamics (the rate of

technological change in the industry) was measured with a five-point Likert scale, ranging from 1 (a very low rate of technological change) to 5 (a very high rate of technological change).

It is often recommended to include country and industry dummy variables in a multi-country and multi-industry study. First, HDI (Human Development Index) and EPI (Environmental Performance Index) comprehensively cover country level factors such as the level of economic development (reflected by GDP per capita) and environmental regulations. As such, including HDI and EPI in the model as a moderator entails including them as additional control variables in the model, and they can adequately account for the cross-country variations in the dependent variable. Adding additional country dummy variables as control variables would just cause confusion. Following the suggestions of Becker (2005), we decide not to include additional country dummy variables. Second, the industries included in the IMSS VI are quite homogeneous (discrete manufacturing, ISIC code 25–30). Still, as an additional safeguard, we did analyze the model by including industry as control variables, but identified nonsignificant effects on the dependent variable. Therefore, as adding industry dummy variables cannot improve the explanatory power of the model, we decided to keep the model parsimonious.

3.3. Common Method Bias

The data used in this study comes from two different sources and this can substantially reduce the risk of common method bias. Although IMSS VI is cross-sectional in nature and relies on a single respondent from each firm, the risk of common method bias is relatively low for the purpose of the present study. First, this survey involves a questionnaire with multiple scales. As such, it would be quite difficult for the respondents to link questions. Further, the items measuring CSP and the item measuring CFP are drawn from different scales, which can substantially reduce self-report biases (cf. Podsakoff et al., 2003). Second, the exploratory factor analysis shows that the five items taken from IMSS VI load on two factors that together account for 65.05% of the total variance. Further, the largest factor accounts for less than half (36.15%) of the total variance. Although these results do not preclude the possibility of common method bias, their magnitude indicates that common method bias is unlikely to seriously confound the relationships studied (cf. Podsakoff et al., 2003).

3.4. Data Analysis

Because the key independent variable of this study, CSP, was measured via respondent self-reports, we assessed the construct validity of this measure by examining its dimensionality, face validity, and content validity, using Cronbach alpha and factor loadings.

The CSP-CFP model to be tested was hierarchical, with the dependent variable, CFP, being a firm-level construct, and the predicting variables spanning the firm and country levels. Therefore, we adopted the hierarchical linear modeling (HLM; Raudenbush and Bryk, 2002) method. To obtain consistent estimations of the coefficients, we opted for the fixed effects model (see below), as the *random effects assumption* is generally too strong to be met (Clarke et al., 2010).

Formally, our model can be described as follows:

Level 1 (firm level)

$$CFP_{ij} = \beta_{0j} + \beta_{1j}CSP_{ij} + controls + e_{ij} \text{ (level 1)}$$

Level 2 (country level)

$$\beta_{0j} = \gamma_{00} + \gamma_{01}CLSP_j + \mu_{0j} \text{ (level 2)}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11}CLSP_j + \mu_{1j} \text{ (level 2)}$$

CFP_{ij} and CSP_{ij} stand for the CFP and CSP of firm i in country j , respectively. $CLSP_j$ stands for the country-level sustainability performance of country j .

We tested the model in five steps, following the suggestions of (Davison et al., 2002; Liao and Rupp, 2005). First, we estimated a null model which has no predictors at either level 1 (firm level) or level 2 (country level). We partitioned the variance of CFP into within- and between-countries components. Second (model 1), in a level 1 analysis, within each country, CFP is regressed on the control variables (firm size, market dynamics, and technological dynamics). Third (model 2), we included the focal independent variable of this study, CSP, as an additional firm-level predictor of CFP. A regression line was estimated for each of the 22 countries in this step. In the fourth step (model 3), we used the intercept estimates obtained from level 1 as outcome variables and regressed these on the country-level variable, CLSP. In the last step (model 4), we regressed the slope estimates obtained from level 1 analysis on the country-level variable, CLSP, to detect cross-level interaction effects.

HLM includes a measure of model fit, the deviance statistic that can be used to compare the fit of two models if one is hierarchically embedded in the other. The difference in the deviance statistics for two nested models asymmetrically follows a chi-square distribution (Davison et al., 2002). Therefore, at each step, we computed the deviance statistic of the model, calculated the difference of this deviance statistic, and tested the significance of the deviance difference. Moreover we also calculated the Akaike Information Criterion (AIC; Akaike, 1987) to evaluate the statistical fitness of the models.

Finally, in this study we aimed to understand the extent to which country-level sustainability performance moderates the CSP-CFP relationship. Based on the results of HLM analysis, we conducted simple slope analysis (Dawson and Richter, 2006; Preacher et al., 2006) to enable a sound interpretation of the cross-level interaction effect.

4. Results

4.1. Construct Validity of Corporate Sustainability Performance

We conducted the following analyses to demonstrate the validity of the measure of CSP in this data. We first checked the face validity of this measure by discussing it with several experts in the field of sustainable supply chain management. Positive responses from these experts confirmed the face validity of corporate sustainability performance. We examined the dimensionality of this measure by conducting a principle components factor analysis with “varimax” rotation and obtained a one-factor solution in which all the items had high “loadings” (average loading = 0.737). The content validity of this measure was checked by referring the literature that has explored different aspects of corporate sustainability performance (Bourlakis et al., 2014; Gimenez et al., 2012; Golini et al., 2014; Longoni et al., 2014; Luzzini et al., 2015; Pagell and Gobeli, 2009; Rao, 2002; Wong et al., 2012; Zhu and Sarkis, 2004). The environmental and social dimensions included in this study have been widely used in these studies. Table 1 summarizes the descriptive statistics and product moment correlations of all the variables in this study.

Table 1
Descriptive statistics and correlations.

	Mean	S.D.	1	2	3	4	5
1. Log. (firm size)	6.024	1.720	1				
2. Market dynamics	3.280	0.852	0.100 ^a	1			
3. Technological change	3.300	0.992	0.119 ^a	0.339 ^a	1		
4. CSP	2.877	0.700	0.054	0.155 ^a	0.215 ^a	1	
5. CLSP	1.461	0.263	−0.036	−0.235 ^a	−0.225 ^a	−0.218 ^a	1
6. CFP	2.970	0.971	0.088 ^b	0.257 ^a	0.126 ^a	0.167 ^a	−0.077 ^b

N = 811 (Responses with missing values were not included in the analysis).

^a Correlation is significant at the 0.01 level (two-tailed).

^b Correlation is significant at the 0.05 level (two-tailed).

4.2. Hypothesis Testing with HLM

4.2.1. Null Model

Using HLM, we estimated a null model in which no predictors were specified for either the level 1 or level 2 function to test the significance level of the level 2 residual variance of the intercept ($\tau_{00} = 1.46\%$, $p > 0.05$). The intra-class correlation coefficient (ICC1) was 1.39%, indicating that only 1.39% of the variance in corporate financial performance can be attributed to country-level factors. In this study, we do not hypothesize that country-level sustainability performance is a predictor of CFP. Instead, country-level sustainability performance is hypothesized to moderate the financial effect of CSP. Therefore, even though ICC1 of the null model is rather small, it does not mean that we should not include country-level variables in further analysis.

4.2.2. Model 1 (Firm-Level Control Variables)

At this step, we included three firm-level control variables as predictors of corporate financial performance. One of the control variables (i.e., market dynamics) contributed significantly to corporate financial performance ($\beta = 0.254$, $p < 0.001$). This result is consistent with prior studies showing that an expanding market creates room for firms to improve their financial performance (Campbell and Hopenhayn, 2005).

4.2.3. Model 2 (Adding Corporate Sustainability Performance)

At this step, the focal independent variable of this study, corporate sustainability performance, is included as an additional predictor of corporate financial performance. The result shows that corporate sustainability performance has a significant positive relationship with corporate financial performance ($\beta = 0.136$, $p < 0.01$), giving support to Hypothesis 1.

4.2.4. Model 3 (Adding Country-Level Sustainability Performance)

As is shown by the results of model 2, the random variance for the intercept is significant at the 0.05 level. At this step, we regressed the intercept estimates on country-level sustainability performance, but this was found not to have a significant relationship with corporate financial performance ($\beta = -0.067$, $p > 0.05$).

4.2.5. Model 4 (Testing Cross-Level Interaction)

In this study, we hypothesized that the relationship between corporate sustainability performance and corporate financial performance is moderated by country-level sustainability performance. A prerequisite for testing this cross-level interaction was that there were significant random variances for corporate sustainability performance in the previous step. As reported in Table 2, in which estimates of the random-variance components appear in parentheses, corporate sustainability performance did have significant variances ($\tau_{11} = 0.018$, $p < 0.05$), which suggested significant variability in firm-level CSP-CFP relationships across countries. Therefore, we tested the cross-level interaction effect between corporate sustainability performance and country-level sustainability performance in predicting corporate

Table 2
HLM results for corporate financial performance^a.

Variables	Null Model	Model 1	Model 2	Model 3	Model 4
Intercept	2.963*** (0.015)	2.963*** (0.016 ⁺)	2.956*** (0.017 ⁺)	2.950*** (0.013)	2.950*** (0.012)
Level 1					
Firm size		0.038 (0.001)	0.027 (0.001)	0.028 (0.001)	0.031 (0.001)
Mar. dys.		0.254*** (0.023)	0.223*** (0.025)	0.220*** (0.026)	0.224*** (0.025)
Tech dys.		0.030 (0.006)	0.008 (0.004)	0.010 (0.005)	0.012 (0.007)
CSP			0.136** (0.017 ⁺)	0.138** (0.018 ⁺)	0.118* (0.011)
Level 2					
CLSP				− 0.044	− 0.067
Cross-level interaction					
CSP * CLSP					− 0.082**
ΔDeviance		57.404	31.874	1.127	4.377
Deviance	2246.029	2188.625	2156.751	2155.624	2151.246
#parameters	3	15	21	22	23
Significance		$P < 0.001$	$P < 0.001$	Non-significant	$P < 0.05$
AIC	2252.030	2218.626	2198.752	2199.624	2197.246
ICC1	1.393%				

*** $p < 0.001$.

** $p < 0.01$.

* $p < 0.05$.

^a $N = 811$. Both CSP and CLSP were standardized before the HLM analysis; level-one variables were all group centered, while CLSP was not grand centered. Entries are estimations of the fixed effects with robust standard errors. Estimations of the random variance components (τ s) are in parentheses. The τ s for the intercepts also represented the between-countries variance in CFP.

financial performance. The cross-level interaction between CSP and CLSP was found to have a significant negative relationship with CFP ($\beta = -0.082$, $p < 0.005$). Therefore, the second and focal hypothesis of this study was supported. Table 2 summarizes the hypotheses testing process and results using HLM.

4.3. Simple Slope Analysis

To enable a sound interpretation of the cross-level interaction effect, we conducted simple slope analysis to identify the extent to which CLSP negatively influences the relationship between CSP and CFP. The coefficient between CSP and CFP is significantly positive when CLSP is low (CLSP set at one standard deviation below the mean; $\beta = 0.287$, $p < 0.001$), while the coefficient is non-significant when CLSP is high (CLSP set at one standard deviation above the mean; $\beta = 0.051$, $p = 0.559$). These results suggest that country-level sustainability performance does have a significant negative impact on the CSP-CFP relationship (Fig. 1). That is, firms in countries that have relatively high levels of sustainability performance find it more difficult to capitalize on their CSP improvements than do their counterparts in countries with

relatively poor sustainability performance.

5. Discussion: Implications, Limitations, and Future Research

In this study, we have developed a contingent model that hypothesizes that the financial effect of CSP is impacted negatively by country-level sustainability performance. Consistent with our conceptual reasoning, the empirical results based on IMSS VI and secondary data do indeed show that country-level sustainability performance negatively moderates the positive relationship between CSP and CFP. As such, this study shows that the financial effect of CSP is context-dependent, and this helps to explain the apparently inconsistent findings on the CSP-CFP relationship in previous studies. This finding has further implications for CSP theories and for practice.

First, our overall finding contrasts with earlier studies that have suggested a virtuous circle between CSP and CFP: firms with sufficient financial resources make greater efforts to improve their social and environmental performance, and these investments in CSP generate favorable financial returns (Orlitzky et al., 2003; Surroca et al., 2010). The apparently virtuous circle between CSP and CFP has triggered many questions: if the rate of return on CSP investments is universally favorable, why would a firm ever stop improving its CSP (Barnett, 2007)? If CSP can always generate a favorable financial return, why do some firms overlook this source of competitive advantage? The findings of this study offer an explanation by showing that the favorable financial effect of CSP is context-dependent. As a country enforces the laws on environmental integrity and social equity, and the overall social and environmental performance improves, firms located in this country will find it increasingly difficult to advance firm-stakeholder relationships through CSP improvements and, consequently, the financial effect of CSP will be attenuated. Further, in the longer term, CSP improvements made by firms can contribute to an increase in the overall sustainability performance of a country (Campbell, 2006), which is then likely to further attenuate the financial effect of CSP. That is, the circle between CSP and CFP cannot always be virtuous. In essence, this study offers empirical support to Barnett's (2007) proposition that, as societal expectations about a firm's environmental and social responsibilities increase, firms will find it increasingly difficult to gain financial benefits from improved corporate sustainability performance.

Second, this study suggests that firms should take account of a

Fig. 1. Interaction of CSP and CLSP in predicting CFP.

country's overall sustainability performance when considering improving their own social and environmental impacts. More specifically, our research indicates that CSP can be financially effective in countries whose sustainability performance is relatively low, but that CSP improvements will make less contribution to financial performance in countries with a good overall sustainability performance. This suggests that firms should adopt different CSP improvement strategies in different countries, depending on the country-level sustainability performance. In countries with high levels of sustainability performance, investing in CSP should be seen as more of an “order qualifier” and as meeting expectations (Campbell, 2007). In such countries, firms should aim to meet their stakeholders' expectations and be aware that outperforming these social expectations will incur costs that may only generate limited financial returns. In contrast, in countries with poor sustainability performance, investing in CSP can provide a competitive advantage and might be an “order winner”.

In summary, our findings contribute to answering the question “when does it pay to be sustainable” (Tang et al., 2012; Flammer, 2015). We suggest that manufacturers in emerging and developing countries should make proactive investments to reap the first-mover advantage in the “sustainability market”, as sustainability followers will have to make due investments at a later stage as sustainability becomes institutionalized, but the financial effect will probably have attenuated. By contrast, companies in developed countries might not expect significant financial benefits from improvements in CSP.

There are three caveats related to this study that should be raised at this point. First, CSP is conceptualized as a composite variable that reflects a firm's impacts on the society and on the natural environment. While the two environmental indicators in IMSS VI that we drew on cover comprehensive environmental issues (including the consumption of materials, water, and energy, pollution emission, and waste production), the two social indicators focused mainly on internal stakeholders and neglected external stakeholders. We would encourage future researchers to replicate and extend our analysis with more comprehensive measurements of CSP in order to increase confidence in our findings.

Second, in contrast to those studies that have used objective indicators, such as Tobin's q (e.g., Wagner, 2010), to measure corporate financial performance, the data used in this study were based on respondents' subjective evaluation. This might lead one to question the measurement accuracy of this variable, even though this approach has been widely adopted in previous studies. However, given the relatively straightforward question and the ease to interpret it for respondents, we do not see this as a serious problem. Still, future research could usefully improve this aspect by using measures that are more objective.

Third, the endogeneity of CSP cannot fully be ruled out, as in many studies in the CSP-CFP relationship (Garcia-Castro et al., 2010). Two causes, omitted variables and simultaneity (Antonakis et al., 2010; Roberts and Whited, 2012), may contribute to the endogeneity of CSP, the focal independent variable of this study. CFP can be influenced by a manifold of factors (Porter, 2008). In this study, we controlled for the effect of firm size, market dynamics, and technological change, but we could not control for the effect of other factors that have been suggested in the literature such as R&D intensity (McWilliams and Siegel, 2000) and the quality of management (Garcia-Castro et al., 2010), which can drive sustainability performance as well as financial performance (Waddock and Graves, 1997). As we could not comprehensively control for all factors that can influence CFP, we cannot completely rule out endogeneity in our model.

Moreover, while we have developed plausible arguments showing that CSP can contribute to CFP, one could suspect reverse causality between these variables. Specifically, researchers (Waddock and Graves, 1997; Surroca et al., 2010) have long argued that slack resources can facilitate firms to make investments to improve their

environmental impact and contribute to employee wellbeing. While we cannot preclude simultaneity as another source of endogeneity of CSP in our model, we tried to develop adequate theoretical arguments to justify the positive contribution of CSP to CFP. We encourage future researchers to collect longitudinal panel data to address this issue.

We hope that this study encourages further work that examines in greater depth how societal factors impact on the financial effect of CSP. Specifically, we highlight the following two directions that are worthy of further exploration. First, future researchers could explore how country-level sustainability performance interacts with firm-level factors in influencing the financial effect of CSP. CSP researchers have already identified several firm-level factors, including CSP engagement strategy (Tang et al., 2012) and stakeholder influence capacity (Barnett and Salomon, 2012), that can impact on the CSP-CFP relationship. As firms are embedded in societies, we would encourage researchers to explore how country-level sustainability performance interacts with firm-level factors in influencing firms' ability to gain financial benefits from their CSP improvements.

Second, we know that stakeholders can reward firms for their good behavior, and that they can also punish them for their misdeeds. This study has explored how the country-level sustainability performance can influence stakeholders' positive responses to a firm's ‘good behavior’. An interesting line for future researchers would be to explore whether country-level sustainability performance influences stakeholders' responses to ‘bad behavior’. There have been several studies examining the performance implications of irresponsible firm behavior, such as in terms of corporate social irresponsibility (Lange and Washburn, 2012; Lin-Hi and Müller, 2013). It is argued that corporate social irresponsibility can negatively impact on CFP, as irresponsible behavior can harm firm-stakeholder relationships (Lin-Hi and Müller, 2013). Building on this argument, we believe that a country's overall sustainability performance could reinforce the negative relationship between corporate social irresponsibility and corporate financial performance. In a country with a high level of sustainability performance, deviating from the well-accepted principles of social equity and environmental integrity may have serious impacts on a firm's legitimacy, organizational survival, and financial performance (Basu and Palazzo, 2008). We would encourage researchers to test these relationships in appropriate empirical settings.

6. Conclusions

To summarize, this study provides new insights into the contingent relationship between CSP and CFP. It extends the literature by including country-level sustainability performance in the CSP-CFP relationship, and it shows that the positive financial effect of CSP is negatively moderated by the country-level sustainability performance. For both researchers and firm managers, this study presents a more nuanced understanding of the financial effect of investing in CSP. For policy makers who want to encourage firms to invest in sustainable development, this study shows that a firm's intrinsic financial incentives to improve their social and environmental performance will gradually decrease over time as the financial effect of CSP diminishes. Therefore, to motivate firms to make enduring contributions to environmental integrity and social equity, policy makers may need to introduce extrinsic financial incentives for firms and reinforce other non-financial incentives such as institutional legitimacy and reputation (Bansal and Roth, 2000).

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Appendix A. HDI and EPI for the 22 countries included in IMSS VI

Country	Cases in IMSS VI	Cases in this study ^a	HDI 2013	EPI 2014	CLSP
Belgium	29	25	0.881	66.61	1.547
Brazil	31	29	0.744	52.97	1.274
Canada	30	21	0.902	73.14	1.633
China	128	107	0.719	43.00	1.149
Denmark	39	32	0.900	76.92	1.669
Finland	34	31	0.879	75.72	1.636
Germany	15	11	0.911	80.47	1.716
Hungary	57	55	0.818	70.28	1.521
India	91	76	0.586	31.23	0.898
Italy	48	41	0.872	74.36	1.616
Japan	82	82	0.890	72.35	1.614
Malaysia	13	10	0.773	59.31	1.366
Netherlands	49	45	0.915	77.75	1.693
Norway	26	25	0.944	78.04	1.724
Portugal	34	29	0.822	75.80	1.580
Romania	40	40	0.785	50.52	1.290
Slovenia	17	17	0.874	76.43	1.638
Spain	29	23	0.869	79.79	1.667
Sweden	32	28	0.898	78.09	1.679
Switzerland	30	23	0.917	87.67	1.794
Taiwan	28	22	0.891	62.18	1.513
USA	48	39	0.914	67.52	1.589

^aResponses with missing values are not included in the analysis of this study.

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