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Investigating the varying relevance of CSR dimensions on firm leverage: The implications for internationalized firms

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ABSTRACT

We empirically investigate the varying role of CSR dimensions such as community, diversity, employee relations, environment, human rights, and product on US firms' leverage. Overall CSR performance and dimensions relating to diversity, employee relations and environment are negatively associated to firm leverage, implying easier access to equity financing. Contrastingly, the human rights dimension is positively associated to firm leverage. For internationalized firms, particularly operating in non-environmentally sensitive industries, the relationship is however reversed for overall CSR performance and dimensions related to diversity, employee relations and environment, while community performance is negatively associated to firm leverage. Drawing on the stakeholder theory of capital structure and stakeholder salience, we highlight the heterogeneous consequences of CSR dimensions as channels that both enable and limit access to equity financing. Our results are robust to alternative explanations and proxies and highlight the need for managing specific CSR dimension performance, the more so when operating multinationally.

1. Introduction

The debate about the heterogeneity of firm-level outcomes from CSR activities remains at the forefront of academic research (Bardos et al., 2020; Boubaker et al., 2020b). Theoretically, CSR activities (Aray et al., 2021; Usmani et al., 2020) could be part of a process of assembling and communicating information in a selective, symbolic, and biased way e.g., 'greenwashing' and 'impression management' such that CSR performance is ignored in investment and financing decision-making models. Alternatively, from a stakeholder theory and information asymmetry perspective, CSR performance data, particularly those based on assessments from external agencies, do provide incremental and credible information that reduces risks (Cheng et al., 2014; Eccles et al., 2014; Benlemlih, 2017), conveying insights about implicit contracts with (non-investing) stakeholders and/or whether managers are involved in overinvesting. Within the latter theoretical scenario, we focus on the implications for a firm's access to finance, notably on capital

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structure as reflected in firm leverage (Attig et al., 2013; Cheng et al., 2014; Harjoto, 2017; Benlemlih, 2017a; La Rosa et al., 2018).

So far, several studies have documented a negative association between CSR performance and leverage (Pijourlet, 2015; Harjoto, 2017; Gao et al., 2016; Yang et al., 2018), surmising that a reduction in information asymmetry and increased stakeholder consideration (Benlemlih, 2017b; Harjoto, 2017) make equity financing more attractive, thereby leading to less reliance on debt and lower firm leverage. However, what is less clear is whether specific CSR interventions (e.g., those relating for example to diversity, community, employee relations, environment, human rights, and product themes) are all relevant (Hussain et al., 2018). Indeed, all too often, CSR 'activity' or 'performance' has been seen as a monolithic construct (or associated to relatively broad notions such as environmental, social and governance) although firms inherently implement CSR strategies along distinctive themes (Torugsa et al., 2013), typically in response to varying external pressures or organizational priorities (Verwijmeren and Derwall, 2010; Bae et al., 2011). In turn, these CSR dimensions are not necessarily associated to organizational outcomes in a uniform way due to the relative weight of these concerns from a managerial and stakeholder evaluation standpoint (stakeholder salience; Mitchell et al., 1997). However, very few studies, notably Bae et al. (2011), Verwijmeren and Derwall (2010) and Benlemlih and Cai (2020) have considered the specific role of workforce/employee and environmental aspects, while there is a wider range of societal/stakeholder themes managers seek to engage with given their recent prominence in the US and elsewhere (e.g., diversity agenda, community relations and human rights). It is in this light that we raise the first question: *To what extent do different CSR dimensions influence corporate financing decisions and consequently firm leverage*[1]?

Although many managers, stakeholders, and investors/lenders see CSR engagement as a channel to mitigate risks and to lower the cost of equity (Benlemlih, 2017a), engaging in a variety of CSR activities to manage complex relationships with multiple non-financial stakeholders can, in itself, generate risky outcomes (Maksimovic and Titman, 1991). More specifically, a company involved in 'environmentally sensitive' sectors (Garcia-Mecca and Martinez-Ferrero, 2021; Benlemlih and Cai, 2020) or operating in multiple geographical, cultural, and political settings may heighten the potential for risky stakeholder relationships (Mazboudi et al., 2020). In other words, CSR performance may be less impactful or could even be detrimental in these circumstances. While there has been prior work evaluating CSR communications, strategies and their consequences for companies operating in environmentally sensitive sectors (Reverte, 2009; Benlemlih and Cai, 2020; Garcia-Mecca and Martinez-Ferrero, 2021), the performance effects of a firm's different CSR dimensions have not been considered. Second, extant work discusses the mechanisms and motivations underlying CSR practices by multinational firms (Mazboudi et al., 2020; Attig et al., 2016; Kolk and Tulder, 2010) and how these might impact capital structure decisions (Lindner et al., 2018). Often tensions between global and local CSR priorities emerge (Benlemlih, 2017a; Mazboudi et al., 2020) and CSR dimensions might heterogeneously impact the home/host stakeholder perceptions. For example, performing well on diversity initiatives might appeal to a 'home' stakeholder audience but less so to a 'host' one (e.g., the initiative is seen as inappropriate from a socio-cultural or legal perspective). Hence, it would be strategically relevant to understand which CSR dimensions do matter in these different circumstances. We therefore explore whether such lesser researched scenarios bear on the CSR dimensions-leverage relationship. Hence, we ask: *to what extent is the relationship between CSR dimensions and firm leverage influenced by the degree of international operations and the sectoral context (i.e., environmentally sensitive vs. environmentally non-sensitive industries)?*

Consequently, this paper investigates the relationship between corporate social performance on a CSR dimension basis (notably community, diversity, employee relations, environment, human rights, and product) and a firm's financial leverage; by considering the implications of operating internationally and in environmentally sensitive industries from a US firm's viewpoint. We rely on the stakeholder theory of capital structure (Maksimovic and Titman, 1991; Du et al., 2014) and the stakeholder salience perspective (Mitchell et al., 1997). Notably, a firm may strategically engage with specific CSR dimensions to manage the perceptions of key stakeholders (e.g., honoring implicit contracts) and help mitigate reputational risks associated to the inherent environmentally sensitive nature of its operations (Garcia-Mecca and Martinez-Ferrero, 2021). In a similar vein, CSR can assist in addressing the political, social, and business risks of operating internationally - often referred to as the 'liability of foreignness' (Bell et al., 2012). Yet, some CSR dimensions may heighten the same risks.

We rely on a panel sample of 16,291 observations across the US firms from 1995 to 2016, covering 41 industries. Overall, while CSR performance and firm leverage are negatively associated, it is the diversity, employee relations and environmental dimensions that enable a lower reliance on debt financing. Community and product dimensions are not significant while human rights performance is positively associated to firm leverage. Furthermore, the observed negative associations reverse to positive ones for internationalized firms operating in non-environmentally sensitive industries. In the case of environmentally sensitive industries, CSR performance has a very weak effect on firm leverage thereby revealing the limits of CSR activities in managing implicit contracts with stakeholders and in mitigating risks. Several robustness tests support the main findings. Alternate samples and proxies of key variables support our results. We also deployed 2SLS and dynamic panel GMM estimations to ensure that our results are not spurious due to endogeneity concerns.

The study contributes to the literature in the following ways. First, our research highlights the heterogeneous consequences of CSR performance for financing decisions adding to prior work that only focused on workforce- and environment-related initiatives (Verwijmeren and Derwall, 2010; Bae et al., 2011). In addressing information asymmetry and stakeholder concerns about the honoring of implicit contracts, we find that some CSR dimensions (diversity, employee relations and environmental) are more salient than others, community and product performance are seen as symbolic while human rights performance adds to the risk profile of the company's operations. Second, the role of CSR dimensions is limited in the case of environmentally sensitive firms (Garcia-Mecca and Martinez-Ferrero, 2021). Thirdly, while prior studies have considered the CSR dimensions-leverage relationship for US domestic firms,

[1] The term 'firm leverage' refers to a firm's overall reliance on debt (i.e., total debt divided by total assets). This contrasts to a measure of financial leverage (long term debt), which we do consider as part of the robustness tests.

our research design and findings focus on US firms operating internationally, highlighting that such firms tend to rely less on equity than domestic firms (Park et al., 2013; Benlemlih, 2017a). Distinctively, as a contribution to the debate about the role of CSR performance and firm leverage in different settings (Girerd-Potin et al., 2011; Pijourlet, 2015; Benlemlih, 2017a), we note that some CSR dimensions add to the risks of operating on a multinational basis, and do not enable easier access to equity financing (Park et al., 2013; Attig et al., 2016).

The remainder of paper is structured as follows: Section 2 provides a review of prior studies followed by Section 3 on the theoretical framework and hypothesis development. In Section 4, we explain the methodology. This is followed by the empirical analysis (Section 5). Finally, we conclude the paper (Section 6).

2. Literature review

2.1. The varying relevance of CSR dimensions

It is argued that CSR performance data, particularly based on assessments from external agencies, do provide incremental and credible insights that reduces information asymmetry (Cheng et al., 2014; Eccles et al., 2014; Benlemlih, 2017b), conveying insights about implicit contracts with (non-investing) stakeholders and/or whether managers are involved in overinvesting. In this scenario, one thus envisages a significant association between CSR performance and leverage (Attig et al., 2013; Harjoto, 2017). However, not all CSR dimensions seem to matter, as alluded to by Ng and Rezaee (2015) and Harjoto and Jo, (2015), who respectively found that environmental, governance and legal CSR dimensions, but not social or discretionary ones, contribute to lower the cost of equity. Contrastingly, Verwijmeren and Derwall (2010) report that employee wellbeing is associated to a higher reliance on equity (less debt), together with other employee metrics (e.g., health and safety, employee involvement). Bae et al. (2011) concurred that a higher reliance on debt may jeopardize a firm's relationship with its workforce and found a negative association between employee-orientation and leverage in the US context.

Elsewhere, Girerd-Potin et al. (2011) find that lower CSR-rated European firms tend to have a higher or increasing debt ratio. However, this did not apply to environmental and community involvement performance, suggesting that firms that are less socially performing could avoid the equity market 'penalty' by engaging with particular stakeholders. Pijourlet (2015) draws on a larger worldwide sample, and not only does he confirm that CSR (social but not environmental) performance is positively associated to a reliance on equity but also CSR performance enables firms to rely more frequently on such sources. Contrastingly, Limkriangkrai et al. (2017) note that high-rated socially responsible Australian firms (from a combined environmental, social and governance score) tend to have higher debt than other lower socially rated firms.

By extending this line of work, Benlemlih (2017b) finds that better CSR-performing US firms rely on a combination of short-term debt and equity to finance their investments, arguably as a means to benefit from the lower perceived risk profile. This is a notable point given that prior research has tended to focus on long-term debt (leverage) ratios. However, when considering the different CSR dimensions, Benlemlih (2017b) notes that only aspects relating to community and diversity are statistically significant and argued this may be explained respectively by (i) the tensions between managers and shareholders due to the former investing in philanthropic activities to enhance reputation and network, and (ii) the added monitoring role performed by a diversified board, thereby increasing a reliance on short term rather than long term debt. It was however not clear why the corporate governance performance variable was non-significant as well as the dimensions for environmental and product performance. A more recent study by Benlemlih and Cai (2020) in the same context focuses on environmental performance and report that this CSR dimension is negatively (positively) associated to a reliance on long-term debt (short-term debt); on the grounds of lowering risks of financial distress and enabling tax savings. The findings equally applied to environmentally sensitive and non-environmentally sensitive firms albeit that one would have expected a more pronounced relationship for the former in view of them facing higher strategic and operational risks.

The results so far suggest that CSR performance does have implications for financing decisions and in enabling a greater reliance on equity financing, but questions remain as to the empirical and theoretical significance (or non-significance) of different CSR dimensions (Harjoto, 2017; Benlemlih and Cai, 2020). For example, community support and philanthropy dimensions seem to reflect mixed attitudes about organizational motivations and market reactions. Performance on this dimension may be socially acceptable for some stakeholders but equally point to managerial self-interest and reputation-building, and over-spending at the expense of shareholder value (Godfrey, 2005; Benlemlih, 2017a). In a similar vein, CSR engagement and performance on human rights and diversity initiatives may be seen by some stakeholders as 'virtue-signaling' with no obvious substantive improvement on these aspects such as an issue of rhetoric vs reality (Wettstein, 2012), leading to very little positive impact on the cost of equity and by extension, on accessing more equity financing. Therefore, there is a motivation to tease out the influence of these different CSR dimensions on firm leverage.

2.2. The implications of internationalization

Somewhat unsurprisingly, CSR practices in the context of internationalization and multinational activity have been the subject of extensive research, particularly within the international business literature (Kolk and Tulder, 2010; Shirodkar et al., 2018; Kim et al., 2018; Mazboudi et al., 2020). As firms increase the extent of their internationalization in pursuit of markets, profits, and shareholder value, they become more exposed to the expectations of a wider and more diverse set of stakeholders. For instance, Shirodkar et al., (2018) observes that MNCs in India tend to be more involved in local 'political' CSR (e.g., providing public goods) based on their level of dependence on local resources, the extent of their ties to local managers and businesses and their interdependence with head office and other subsidiaries. In this scenario, the internationalized firm's focus is on countering the liabiility of foreignness (Mazboudi et al.,

2020) and related risks associated to its involvement in the host country, whilst being less concerned about the efficiency and global reach of its CSR practices. Finally, CSR practices can also be shaped by pressures from internal actors (e.g., employees and local managers), leading to attempts to combine CSR practices and performance designed to placate the expectations of home and host country stakeholders (Pilato and Pedrini, 2017). In effect, different strategies, and orientations internationally with regard to a firm's CSR policies may impact differently on the level of risk mitigation and the management of stakeholder expectations commitments, and hence on its financing decisions. However, there is a limited understanding as to whether and which CSR dimensions of internationalized firms do help address the liability of foreignness. It is in this light that we consider the impact of internationalization on the CSR performance-leverage relationship.

2.3. The case of environmentally sensitive industries

To some extent, the development and emergence of CSR frameworks, standards, and ratings in fact arose from an interest in providing greater visibility and understanding of performance on a wide range of different CSR dimensions and challenges, particularly for firms operating in 'exposed' activities or sectors. Sectoral/industrial differences have sometimes been associated to variations in the CSR performance-leverage relationship on the grounds that particular areas of activity are inherently riskier than others and thus require more explicit commitments and assurances to non-financial stakeholders (Harjoto, 2017). For instance, Garcia-Mecca and Martinez-Ferrero (2021) find that the reporting of sustainable development goals (SDGs) had little effect on firm performance in a large sample of European firms except for those firms operating in controversial and environmentally sensitive industries. In contrast, Benlemlih and Cai (2020) found that US firms having higher environmental performance would rely less on long-term debt but there was no difference in results for companies operating in environmentally sensitive industries. Given the limited and mixed evidence on the implications of operating in environmentally sensitive industries, there is a case to examine this further in the context of a broader set of CSR dimensions and capital structure.

3. Theoretical framework and hypothesis development

Although most researchers in the field (Bae et al., 2011; Pijourlet, 2015; Yang et al., 2018; Harjoto, 2017) remain anchored to mainstream perspectives underpinning capital structure decisions, there has been in parallel a growing recognition of the stakeholder theory of capital structure (Titman, 1984; Maksimovic and Titman, 1991; Du et al., 2014) to frame an understanding of the wider links between CSR performance/activities and financing decisions. In the main, the stakeholder theory of capital structure argues that firms will take into consideration the preferences, priorities and/or concerns of non-financial stakeholders to help fulfil implicit contracts and commitments when making capital structure decisions. Earlier empirical work highlighted the costs for customers should the (supplier) firm go into liquidation and such stakeholders may withhold from committing with the firm if its financial position is deemed risky or precarious. Further work has sought to investigate this theoretical notion to other stakeholders and notably employees (Verwijmeren and Derwall, 2010; Bae et al., 2011), primarily due to the reputational implications of looking after one's workforce and found empirical support for a negative association between employee-welfare related metrics and leverage.

More recently, Benlemlih and Cai (2020) argue that stakeholder concerns about the strategies and policies adopted by firms with regards to the environment can impact capital structure decisions. From the perspective of a wide group of non-financial stakeholders and financial ones (e.g., investors), evidence of environmental performance communicates commitment to prevailing social norms, changes in attitudes in the equity market and reputation-building, albeit that possible tensions may arise in terms of the costly nature of environmental investments and the long-term (and fickle) nature of any returns. Beyond this emphasis on the environment, contemporary issues (e.g., equality and diversity, corruption, human rights, sustainable supply chain, and modern slavery, corporate responses to the Covid-19 pandemic) have been gradually coming to the fore (Baboukardos et al., 2021). However, there is little evidence examining such implications from a financing perspective.

Arguably, one of the limits of the stakeholder theory of capital structure (in its current form) is that it does not explicitly provide a framework to model how firms are expected to address stakeholder considerations and which CSR dimension might be more (or less) prominent in the firm's assessment of its financing decisions. Mitchell et al.'s (1997) stakeholder salience concept helps address this challenge by highlighting that stakeholders need to be evaluated based on their legitimacy and power, and urgency of their demands. For example, issues about resolving workforce pay and working conditions originate from a legitimate stakeholder but a reaction from the firm and its impact on capital structure may be dependent on the relative power of the stakeholder in withdrawing labor/support (e.g., a strongly unionized workforce) and the urgency of the claims (e.g., credible threat of strike action/work stoppage). Contrastingly, community initiatives and philanthropy may be less important given the lower salience of related stakeholders. Performing well on this dimension may be in line with social norms but it is not necessarily crucial from a capital structure perspective, particularly given concerns about managers over-investing in a self-interested way in philanthropic activities (Benlemlih, 2017b). In effect, we argue that the importance associated to CSR performance dimensions in capital structure decisions will vary over time and contextually, considering the perceived salience attributed to specific stakeholders or to a given societal concern (e.g., human rights).

Overall, the theoretical arguments and empirical evidence on the relationship between CSR performance and leverage points to a channel where a firm's CSR performance enables the implicit contracts to be fulfilled, and incentivizes more equity investment relative to a reliance on debt finance (please also refer to Ryu et al., 2016; Sheikh, 2019). While evidence of a negative association seems relatively robust when considering CSR as an overall construct, we contend that results differ (negative, positive, or non-significant) when considering, or are limited to, specific CSR dimensions (notably environmental, employee, and community/philanthropy). Concerns about a firm's CSR performance in these dimensions do ebb and flow considering how managers, market players and social

actors perceive these issues to be risk-sensitive and thus respond to particular regulatory or stakeholder interventions. In this light, we adopt a non-directional hypothesis (H1b) to reflect the limited empirical evidence across different CSR dimensions while the first hypothesis (H1a) reiterates extant evidence on the impact of overall CSR performance:

H1a. : There is a significant negative relationship between CSR performance and firm leverage.

H1b. : There is a significant relationship between dimensions of CSR performance and firm leverage.

At the outset, Lindner et al. (2018) argues that the internationalization-capital structure evidence is conflicted. On one hand, internationalized firms would tend to have a lower reliance on debt due to the costs associated with the risks of operating internationally (e.g., political risks, exchange rate risks), higher levels of information asymmetry and higher costs of monitoring. On the other hand, and consistent with the ownership advantage perspective, such firms are effectively diversifying their sources of revenues and risks, and such diversification translates into a capacity to access debt more cheaply (Mittoo and Zhang, 2008; Aggarwal and Kyaw, 2010). Lindner et al. (2018) highlight four key institutional level factors of interest, namely the origin of sampled firms (U.S. and non-U.S. firms), home-country size, home-country institutional quality, and home-country corporate tax rate. At the firm level, the authors refer to industry, profitability, dividend policies and governance but there is virtually no reference to CSR performance and practices as a potential variable of interest.

From the perspective of the stakeholder theory of capital structure, an internationalized firm needs to consider a larger set of implicit contracts, commitments, and obligations as it seeks to manage its access to resources and stakeholders in one or more host nations. Such firms are subject to an increasingly more complex and uncertain range of stakeholder pressures such as addressing the different requirements of foreign customers and suppliers, complying with numerous regulatory standards and employment laws, responding to political interference, and engaging with civil society and local community activism/expectations. Due to the liability of foreignness (LOF) argument, it is relatively more difficult for such a firm to appreciate the detailed implications, given that not all national settings value these CSR dimensions in the same way. For example, Campbell et al. (2012) examine whether foreign entities from more distant home national settings engage in CSR compared to those in closer home countries. To reduce the LOF, firms operating further from the home country would benefit more from engaging in CSR. However, the authors found the opposite result (i.e., such firms engaged less with CSR). Campbell et al. (2012) conjectures that this finding points to an issue of willingness and ability of multinational firms to engage in host CSR, due to the potential uncertainties in delivering CSR outcomes in different settings. This points to the possibility that CSR practices and performance by internationalized firms are not, in themselves, intrinsically beneficial in addressing LOF and related uncertainties. Furthermore, some CSR dimensions may be more welcomed than others in view of the different social, political, and cultural appreciation of such interventions. For instance, particular concerns (e.g., environment; community, products) tend to be more encompassing and generate similar stakeholder pressures worldwide, relative to other aspects (e.g., diversity, human rights). Up to now, the literature (Yang et al., 2018) seems to suggest that the extent of internationalization raises several risks, challenges, and uncertainties for the firm which CSR performance can help mitigate, while not considering the view that some CSR dimensions can also be detrimental. Considering the current debate, we formulate the following non-directional hypotheses.

Hypothesis 2a. **:** Internationalization moderates the association between CSR performance and leverage.

Hypothesis 2b. **:** CSR dimensions will significantly but differently interact with internationalization in underpinning the association between CSR performance and leverage.

Lastly, of significant importance is the inherently 'problematic' nature of the business activities/operations that some companies are involved in (Cai et al., 2012; Jo and Na, 2012; Hmaittane et al., 2019). Given the contemporary concerns with regards to climate change, environmentally sensitive companies tend to be subject to higher levels of regulatory, civil society, eco-activism and/or public scrutiny (Reverte, 2009; Benlemlih and Cai, 2020; Garcia-Mecca and Martinez-Ferrero, 2021), where even minor transgressions can lead to high penalties from a market, investor, and stakeholder perspective. A perceived lack of trust and cynicism also exists between societal actors and such firms since many environmentally-sensitive companies are known to engage in greenwashing and other impression management tactics (Tashman et al., 2019; Garcia-Mecca and Martinez-Ferrero, 2021) to minimize transparency on the harmful impact of their activities on the environment. It follows therefore that the costs of operating their activities and penalties for breaching implicit contracts would be higher in such sectors, irrespective of their attempts to improve their legitimacy through higher CSR performance. In other words, it is not entirely clear whether a firm can reap reputational benefits of better CSR performance (for different dimensions) as a counterweight to the inherent sensitivity of its operations. Relative to companies operating in non-environmentally sensitive industries, CSR performance may be less influential for capital structure decisions. Based on the limited and mixed evidence (Benlemlih and Cai, 2020), we formulate the non-directional hypotheses:

H3a. Industry nature (i.e., environmentally sensitive vs. non-environmentally sensitive) moderates the association between CSR performance, internationalization, and leverage.

H3b. Industry nature (i.e., environmentally sensitive vs. non-environmentally sensitive) moderates the association between dimensions of CSR performance, internationalization, and leverage.

4. Data and methodology

4.1. Sample construction

We rely primarily on the following databases a) DataStream, which provides financial data, b) MSCI ESG, which provides data on the various CSR dimensions and c) Worldscope which provides data on the extent of internationalization of US firms. We merge the data from these sources and drop firm-year observations with missing data. We restrict our sample to firms having a book value of assets more than $100 million since internationalized firms are typically large in terms of their scale of operations (Kwok and Reeb, 2000). We also exclude the tailed distribution of each financial variable by 1% to control for the potential impact of outliers (Bose et al., 2020). This leads to a useable unbalanced panel sample of 16,291 firm-year observations of US firms over the period 1995–2016.[2]

4.2. Measurement of main variables

Following Attig et al. (2016) and Bardos et al. (2020), we draw on the MSCI ESG database for our measures of CSR performance. This database is owned by MSCI Inc.[3] which is the largest provider of environmental, social, and governance indices, formerly known as KLD. KLD rates companies based on information extracted from surveys, financial reports, mainstream media, and other authoritative sources (e.g., government records and law journals). This database is widely used and validated in prior CSR research (Boubaker et al., 2019; Boubaker et al., 2020a; Cheung, 2016; Lin et al., 2021; Park et al., 2022; Vaupel et al., 2022).

MSCI ESG measures CSR performance on a combined scale and alongside seven dimensions: community, diversity, employee relations, environment, human rights, product, and corporate governance (Harjoto, 2017; Do et al., 2018; Sheikh, 2019). Given the focus on social responsibility, we exclude the corporate governance dimension and calculate CSR performance score in relation to the remaining six dimensions (please refer to Appendix A for more details). Indeed, scholars (Cheung, 2016; Do et al., 2018) argue that excluding this dimension ensures that the hypothesized relationships are not directly influenced by the quality of the firm's corporate governance mechanisms (Cheung, 2016; Saeed et al., 2022). Each MSCI dimension highlights strengths and concerns. A score is calculated for each dimension based on the difference between total strengths and total concerns.

In line with prior studies (Magnanelli and Izzo, 2017; Park et al., 2013; Villarón-Peramato et al., 2018), firm leverage is measured as the ratio of total debt to total assets.

Internationalization refers to a firm's presence outside of its home setting and extant literature (Mittoo and Zhang, 2008; Park et al., 2013; Attig et al., 2013) categorise firms based on their foreign assets to total assets ratio or foreign sales to total sales ratio. Park et al. (2013) considers a firm to be operating on a multinational basis if the ratio of foreign sales to total sales is at least 20%. Likewise, we operationalise our measure of firms' internationalization (*MNE*) as a dummy variable coded 1 if the ratio of foreign sales to total sales is 20% or higher and 0 otherwise.

4.3. Empirical models

To test our hypotheses, we estimate Eqs. (1) and (2). We first examine the impact of CSR performance and of its sub-dimensions on firm leverage (H1a and H1b) by using Eq. (1). We then examine the moderating effect of firms' international exposure on the relationship between the overall CSR performance as well as its sub-dimensions and firm leverage (H2a & H2b) by estimating Eq. (2). Finally, we re-estimate Eqs. (1) and (2) using the subsample of environmentally sensitive and environmentally non-sensitive industries to examine whether industry nature moderate the relationship between overall CSR performance, its sub-dimensions, the interaction term between CSR and internationalization, and firm leverage (H3a & H3b).

$$LEV_{(i,t)} = \beta_0 + \beta_1 CSR_{(i,t)} + \Sigma\beta_j Controls_{(i,t)} + \beta_3 Fixed\ Effects + \varepsilon_{(i,t)} \quad (1)$$

$$LEV_{(i,t)} = \beta_0 + \beta_1 CSR_{(i,t)} + \beta_2 MNE_{(i,t)} + \beta_3 CSR \times MNE_{(i,t)} + \Sigma\beta_j Controls_{(i,t)} + \beta_3 Fixed\ Effects + \varepsilon_{(i,t)} \quad (2)$$

where *LEV* represents the firms leverage, *CSR* refers to the overall CSR performance score or the score of each sub-dimension, *MNE* is our proxy of firms' international exposure and *CSR X MNE* is the interaction term between CSR performance score and international exposure of sample firms. To validate H1a and H1b, we focus on the coefficient β1 of Eq. (1). If CSR performance is associated with firm leverage, then the coefficient on *CSR* (β1) should be statistically significant. To test our hypotheses based on the moderation effect of MNEs (H2a & H2b), we focus on the coefficient β3 of Eq. (2). If the firms' level of internationalization moderates the association between CSR performance and firm leverage, then the coefficient on the interaction term between CSR performance and internationalization (*CSR X MNE*) (β3) should be statistically significant. To validate H3a and H3b, we focus on the coefficient β1 of Eq. (1) and β3 of Eq. (2). If the nature of the industry moderates the association between CSR performance, its sub-dimensions, the interaction term between CSR and internationalization, and firm leverage, then the coefficient on *CSR* (β1) and interaction term between CSR and

[2] In 2017, MSCI ESG started MSCI ESG Universal Indexes and MSCI Factor ESG target Indexes. This new addition in the MSCI ESG indexes brings numerus changes in the ESG calculations criteria. Consequently, we restricted the sample to 2016. This choice is in line with several recent studies (Lin et al., 2021; Park et al., 2022; Vaupel et al., 2022) on CSR using MSCI ESG data.

[3] KLD was formally acquired by MSCI in 2010 (Attig et al., 2013)

internationalization (*CSR X MNE*) (β3) should be different across subsample of environmentally sensitive and environmentally non-sensitive industries.

We also control for variables that may impact the level of leverage as previously highlighted in the literature (An et al., 2016; Cruz and Pedrozo, 2009; Chauhan and Kumar, 2019; Du et al., 2017; Frank and Goyal, 2009; Friend and Lang, 1988; Huang and Shang, 2019; Im et al., 2020; Matthiesen and Salzmann, 2017). *Controls* is a vector of control variables which include firm size (*SIZE*), profitability (*ROA*), tangibility (*FA/TA*), market to book value (*MTB*), volatility (*VOL*), and firm age (*AGE*). We also employ industry fixed effect using Fama and French's (1997) 48 industry classification, firm fixed effect, year fixed effect as well as cluster standard errors at the firm level to control for the variation across time, firms, and industries. All variables are defined in Appendix B.

5. Results

5.1. Univariate analysis

Table 1 reports the sample distribution by year and industry using Fama and French's (1997) industry classification. Panel A of Table 1 shows a steady increase in the number of observations throughout the sample period as the coverage of MSCI ESG database increases. The average firm leverage (*LEV*) is 0.22 with a minimum and maximum value of 0.17 (year 2015) and 0.26 (year 1999), respectively. The average CSR performance score (*CSR*) is -0.18 ranging from -1.06 (year 1998) to 1.13 (year 1996). On average, 45% of the sampled firms are involved in international activities (beyond 20% of the revenue), although Panel A also shows a decreasing trend in the percentage of firms meeting the internationalization threshold over the sample period. Additionally, Panel B shows that firms belonging to the real estate and defense sector have the highest (0.47) and lowest (0.07) level of leverage, respectively. For CSR performance, we find that firms operating in the printing and publishing sector and coal sector demonstrate best (1.51) and worst (-2.55) CSR performance, respectively. Finally, the most and least internationalized industrial sector is measuring and co (94% of firms on average) and defense with 7% on average, respectively. These statistics are comparable to prior studies (e.g., Attig et al., 2016).

Table 2 shows the descriptive statistics of all variables. On average, the level of leverage (*LEV*), CSR performance score (*CSR*) and internationalization (*MNE*) of sample firms is 0.219, -0.175 and 0.452, respectively. The mean value for community (*COM*), diversity (*DIV*), employee relations (*EMP*), environment (*ENV*), human rights (*HUM*) and product dimension (*PRO*) is 0.082, 0.019, -0.102, 0.005, -0.041 and -0.130, respectively. With regards to control variables, we find that the average firm size (*SIZE*) is 14.330, average level of profitability (*ROA*) is 0.032, average ratio of fixed assets to total assets (*FA/TA*) is 0.270, average market to book value (*MTB*) is 2.798, average level of volatility in stock returns (*VOL*) is 0.030 and the average age (*AGE*) of sample firms is 23.613 years.

Table 3 presents the Pearson correlation matrix results and variance inflation factors (*VIFs*) for all variables. The correlation between all variables is less than the threshold value of 0.5 except between the overall CSR performance score (*CSR)* and the score of its sub-dimensions. We therefore refrain from using the overall CSR performance score and the score of its sub-dimensions in the same regression and estimate the VIFs for all variables, the highest VIF value being 2.9 for volatility (*VOL*) which is far below the threshold value of 10. Collectively, these results imply that multi-collinearity is unlikely to bias our results.

5.2. Hypotheses testing

Table 4 reports the regression results for various specifications of Eqs. (1) and (2) to empirically test H1a and H2a. In Model 1 and 2, we regress firm leverage (*LEV*) on the key independent variables, i.e., the overall CSR performance score (*CSR*) and the interaction term between the overall CSR performance score and internationalization (*CSR X MNE*) excluding industry and year effects. In Model 3 and 4, we re-estimate the Eqs. (1) and (2) when including industry and year effects. In Model 5 and 6, we re-estimate the Eqs. (1) and (2) by including industry and year effects as well as clustering standard errors at the firm level. Finally, Models 7 and 8 present the results to test H1a and H2a using firm fixed effect regressions to address the issue of omitted variable bias.[4] For H1a, the results for the estimated coefficient on *CSR* in all specifications (Model 1, 3, 5 & 7) continue to be negative and statistically significant at 1% level, implying that firms with higher CSR performance are less likely to rely on debt financing. Everything else being equal, a one standard deviation increase in CSR performance induces a 0.015 [-0.007 * 2.121 (i.e., the standard deviation on *CSR* from Table 2) = -0.015] decrease in *LEV*, representing a -6.8% [-0.015/0.219 = -0.068] decrease over the sample average of *LEV* for all US firms.[5] Hence, this addresses our first research question by showing that CSR performance seems to be mainly driven towards reducing agency costs and information asymmetry (Benlemlih, 2017a; Harjoto, 2017). In this respect, these results support the expected H1a and chime with some of the prior works (Ryu et al., 2016; Sheikh, 2019), documenting that higher CSR performance effectively contributes to more equity financing (Cruz and Pedrozo, 2009; Pijourlet, 2015).

Our results also show that the estimated coefficient on the firms' international exposure (*MNE*) is negative and statistically significant in all specifications, suggesting that internationalized firms tend to rely less on debt. This result corroborates with earlier findings by Mittoo and Zhang (2008), who conclude that US multinational enterprises have a lower leverage than their domestic counterparts due to the higher agency costs of debt; albeit that non-US multinational firms (e.g., from Canada) may find it more

[4] We also ensure the robustness of our main findings using seemingly unrelated regressions and adding corporate governance as an additional variable in the model. The unreported results also confirm our main findings. These results are not reported for the sake of brevity but available from the corresponding author upon request.

[5] The calculations of economic significance are based on results reported in Column 6 of Table 4.

Table 1
Year and industry-wise summary.

Year	*Obs.*	*LEV*	*CSR*	*MNE*	*Industry*	*Obs.*	*LEV*	*CSR*	*MNE*
Panel A: Year wise					*Medical Equipment*	460	0.17	-0.07	0.78
1995	91	0.22	1.00	0.62	*Pharmaceutical*	508	0.16	0.01	0.43
1996	97	0.22	1.13	0.61	*Chemicals*	441	0.27	-0.95	0.80
1997	108	0.23	1.12	0.64	*Rubber and Plastic*	86	0.25	-0.28	0.71
1998	123	0.25	-1.06	0.60	*Textiles*	16	0.28	-0.50	0.31
1999	137	0.26	-1.01	0.60	*Construction Mat.*	378	0.25	-0.61	0.56
2000	152	0.25	0.90	0.58	*Construction*	242	0.31	-1.07	0.14
2001	270	0.25	0.38	0.51	*Steel Works Etc.*	225	0.19	-0.48	0.48
2002	304	0.25	0.33	0.50	*Fabricated Products*	9	0.21	-1.44	0.67
2003	742	0.22	-0.14	0.44	*Machinery*	558	0.20	-0.56	0.83
2004	774	0.21	-0.34	0.44	*Electrical Equip*	185	0.21	-1.01	0.70
2005	827	0.21	-0.33	0.45	*Automobiles*	284	0.20	-0.71	0.75
2006	888	0.21	-0.37	0.46	*Aircraft*	100	0.27	-0.71	0.46
2007	956	0.23	-0.36	0.49	*Shipbuilding*	44	0.27	-1.73	0.25
2008	1073	0.24	-0.33	0.47	*Defense*	29	0.07	-0.17	0.07
2009	1113	0.22	-0.36	0.45	*Precious Metals*	47	0.11	-2.32	0.70
2010	1145	0.20	-0.58	0.40	*Non-Metallic*	115	0.26	-0.94	0.62
2011	1183	0.21	-0.38	0.41	*Coal*	31	0.38	-2.55	0.58
2012	1179	0.22	0.25	0.41	*Petroleum*	655	0.24	-1.37	0.40
2013	1225	0.24	-0.39	0.45	*Utilities*	717	0.37	-0.55	0.14
2014	1253	0.18	-0.15	0.48	*Communication*	295	0.43	-0.10	0.23
2015	1302	0.17	-0.26	0.46	*Personal Service*	196	0.22	-0.59	0.27
2016	1347	0.20	-0.34	0.43	*Business Service*	1819	0.17	0.08	0.55
Total	**16291**	**0.22**	**-0.18**	**0.45**	*Computers*	374	0.12	0.93	0.81
					Electronic Equip	1128	0.09	0.10	0.83
Industry	**Obs.**	**LEV**	**CSR**	**MNE**	*Measuring and Co*	286	0.16	0.30	0.94
Panel B: Industry-wise					*Business Supplies*	172	0.31	1.09	0.60
Agriculture	68	0.25	-1.41	0.41	*Shipping Contain*	87	0.40	-0.32	0.66
Food Products	217	0.26	0.70	0.49	*Transportation*	438	0.27	-0.63	0.33
Candy & Soda	100	0.23	0.99	0.53	*Wholesale*	423	0.17	-0.21	0.30
Beer & Liquor	32	0.22	0.50	0.56	*Retail*	951	0.18	-0.16	0.23
Tobacco Products	48	0.37	-1.38	0.54	*Restaurants, Hot*	343	0.35	-0.05	0.38
Recreation	119	0.13	0.81	0.84	*Banking*	1530	0.18	0.10	0.10
Entertainment	176	0.38	-0.88	0.38	*Insurance*	448	0.09	0.46	0.29
Printing and Pub	168	0.22	1.51	0.32	*Real Estate*	655	0.47	-0.53	0.08
Consumer Goods	264	0.24	1.12	0.67	*Trading*	347	0.17	-0.05	0.36
Apparel	152	0.16	0.36	0.57	*Almost Nothing*	58	0.24	-0.86	0.59
Healthcare	267	0.27	-0.40	0.12	***Total***	**16291**	**0.22**	**-0.18**	**0.45**

The table presents industry-wide (based on Fama and French's, 1997 48 industry classifications) and year-wise (1995–2016) distribution of 16,291 firm-year observations. It also presents the mean of main variables across sample years and industries.

Table 2
Descriptive statistics.

Variables	*Mean*	*SD*	*1st percentile*	*25th percentile*	*Median*	*75th percentile*	*99th percentile*
LEV	0.219	0.200	0.000	0.042	0.185	0.337	0.898
CSR	-0.175	2.121	-5.000	-1.000	0.000	1.000	8.000
COM	0.082	0.522	-2.000	0.000	0.000	0.000	4.000
DIV	0.019	1.366	-3.000	-1.000	0.000	1.000	7.000
EMP	-0.102	0.816	-4.000	0.000	0.000	0.000	5.000
ENV	0.005	0.775	-5.000	0.000	0.000	0.000	4.000
HUM	-0.041	0.258	-3.000	0.000	0.000	0.000	2.000
PRO	-0.130	0.595	-4.000	0.000	0.000	0.000	2.000
MNE	0.452	0.498	0.000	0.000	0.000	1.000	1.000
SIZE	14.330	1.698	10.777	13.100	14.252	15.415	18.920
ROA	0.032	0.118	-0.592	0.009	0.041	0.084	0.292
FA/TA	0.270	0.263	0.002	0.057	0.174	0.417	0.929
MTB	2.798	3.326	-7.680	1.310	2.000	3.240	21.120
VOL	0.030	0.072	0.000	0.000	0.005	0.019	0.402
AGE	23.613	12.141	1.000	14.000	21.000	40.000	68.000

This table presents descriptive statistics of regression variables for the sample of 16,291 firm-year observations over the period 1995–2016. The table shows mean, standard deviation (SD), and 1st, 25th, Median, 75th and 99th percentile values for each regression variable. Definition of all variables and data sources are provided in Appendix B.

Table 3
Correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	VIF
(1) LEV	1.000															-
(2) CSR	-0.042*	1.000														2.8
(3) MNE	-0.116*	0.123*	1.000													1.5
(4) COM	-0.003	0.521*	0.094*	1.000												1.2
(5) DIV	0.037*	0.703*	0.127*	0.322*	1.000											1.4
(6) EMP	-0.057*	0.505*	0.033*	0.125*	0.107*	1.000										1.1
(7) ENV	-0.055*	0.544*	0.086*	0.250*	0.131*	0.079*	1.000									1.2
(8) HUM	-0.016	0.144*	-0.085*	-0.032*	-0.132*	0.057*	0.183*	1.000								1.1
(9) PRO	-0.083*	0.224*	-0.028*	-0.055*	-0.195*	0.085*	0.130*	0.174*	1.000							1.2
(10) SIZE	0.267*	0.255*	0.047*	0.217*	0.444*	0.088*	-0.017	-0.184*	-0.286*	1.000						1.7
(11) ROA	-0.108*	0.095*	0.083*	0.056*	0.099*	0.068*	0.026*	-0.046*	-0.029*	0.163*	1.000					1.2
(12) FA/TA	0.385*	-0.108*	-0.156*	-0.074*	-0.033*	-0.037*	-0.133*	-0.035*	-0.029*	0.109*	0.038*	1.000				1.1
(13) MTB	-0.049*	0.110*	0.082*	0.057*	0.105*	0.060*	0.034*	-0.022*	-0.002	-0.077*	0.061*	-0.062*	1.000			1.0
(14) VOL	-0.001	0.044*	0.024*	0.024*	0.045*	0.022*	0.016	-0.018	-0.003	0.053*	0.020	-0.002	-0.010	1.000		2.9
(15) AGE	0.055*	0.159*	0.089*	0.104*	0.275*	0.053*	-0.027*	-0.117*	-0.118*	0.388*	0.143*	0.116*	-0.031*	0.125*	1.000	1.5

Table 3 reports the Pearson correlation coefficients for all variables. * refer to statistical significance at 1% respectively. Definition of all variables and data sources are provided in Appendix B.

Table 4
CSR, leverage and MNEs.

VARIABLES	OLS				Cluster OLS		Firm Fixed	
	LEV							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CSR	-0.005***	-0.006***	-0.005***	-0.007***	-0.005***	-0.007***	-0.001***	-0.001**
	(-6.79)	(-5.99)	(-7.82)	(-6.91)	(-3.31)	(-3.01)	(-2.89)	(-2.35)
MNE	-0.021***	-0.020***	-0.019***	-0.018***	-0.019***	-0.018**	-0.002**	-0.002**
	(-7.29)	(-7.07)	(-6.08)	(-5.78)	(-2.67)	(-2.50)	(-2.27)	(-1.98)
CSR X MNE		0.003**		0.003**		0.003**		0.002***
		(2.01)		(2.21)		(1.99)		(4.02)
SIZE	0.035***	0.035***	0.038***	0.038***	0.038***	0.038***	0.035***	0.035***
	(38.14)	(38.03)	(38.84)	(38.52)	(14.27)	(14.11)	(15.65)	(15.60)
ROA	-0.256***	-0.257***	-0.276***	-0.277***	-0.276***	-0.277***	-0.228***	-0.229***
	(-21.65)	(-21.70)	(-23.43)	(-23.50)	(-9.17)	(-9.19)	(-24.88)	(-24.92)
FA/TA	0.268***	0.268***	0.160***	0.160***	0.160***	0.160***	0.057***	0.058***
	(49.83)	(49.78)	(19.14)	(19.14)	(6.18)	(6.17)	(4.06)	(4.15)
MTB	0.001*	0.001	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(1.67)	(1.60)	(-0.39)	(-0.45)	(-0.13)	(-0.15)	(1.50)	(1.54)
VOL	-0.004	-0.005	-0.004	-0.004	-0.004	-0.004	-0.002	-0.002
	(-0.23)	(-0.24)	(-0.22)	(-0.24)	(-0.14)	(-0.15)	(-0.16)	(-0.19)
AGE	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.013***	-0.014***
	(-8.67)	(-8.60)	(-8.90)	(-8.87)	(-3.52)	(-3.51)	(-2.73)	(-2.81)
Constant	-0.310***	-0.309***	-0.305***	-0.302***	-0.305***	-0.302***	0.161	0.170
	(-24.65)	(-24.61)	(-10.65)	(-10.55)	(-5.47)	(-5.45)	(1.36)	(1.44)
Observations	16,291	16,291	16,291	16,291	16,291	16,291	16,291	16,291
Year & Industry Fix	No	No	Yes	Yes	Yes	Yes	Year	Year
Cluster Effect	No	No	No	No	Yes	Yes	No	No
Firm Fix	No	No	No	No	No	No	Yes	Yes
Adj. R2	0.234	0.235	0.323	0.323	0.323	0.323	0.318	0.319
F-stat	624.6	555.8	108.8	107.4	27.22	27.04	36.23	36.26

This table presents regression results for the relationship between overall CSR performance, the CSR performance of MNEs and firm leverage. Model 1–4 report the results from OLS regression without and with year and industry fixed effects. Model 5–6 present the OLS results with robust standard errors clustered at firm level. Model 7–8 present the results using firm fixed effects. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

beneficial to secure debt from international debt markets. It is also consistent with the argument made by Park et al. (2013) that the ownership advantage of US multinationals leads to a lesser need for debt finance due to their earnings and growth potential.

However, of interest is that our results for H2a show that the estimated coefficient on the interaction term between CSR performance and firms' international exposure (*CSR X MNE*) is positively significant for all specifications (Model 2, 4, 6 & 8), suggesting that US multinational enterprises with higher CSR performance are likely to have a higher level of leverage. Hence, while the literature has typically conceived the internationalization-debt finance relationship to be a negative one (Lindner et al., 2018), our results indicate that CSR performance in the case of internationalized firms does translate into a lower (higher) reliance on equity (debt). Taken together, these results validate H2a by showing that US multinational enterprises use CSR performance strategically to manage their implicit commitments to stakeholders.[6] Everything else being equal, a one standard deviation increase in CSR performance of MNEs induces a 0.005 [0.003 × 1.622 (i.e., the standard deviation on *CSR X MNE* from Table 2) = 0.005] point increase in *LEV*, representing a 2.28% [0.005/0.219 (i.e., the average *LEV* from Table 2) = 0.0228] increase in the sample average *LEV*.

Table 4 also report the results for control variables. *SIZE, FA/TA,* and *MB* have a significantly positive relationship with leverage (*LEV*). In contrast, *ROA* and *AGE* have a significantly negative relationship with leverage (*LEV*). These results are largely consistent with extant literature on firm leverage (Anwar and Sun, 2015; Akhtar and Oliver, 2009; Cruz and Pedrozo, 2009; Im et al., 2020; Sheikh, 2019)

Table 5 contains the results on the association between sub-dimensions of CSR (i.e., community, diversity, employee relations, environment, human rights, and product), firms' foreign exposure (*MNE*), the interaction terms between sub-dimensions of CSR and firms' foreign exposure and firm leverage to empirically test H1b and H2b. These results show that diversity (*DIV*), employee relations (*EMP*) and environment (*ENV*) related dimensions of CSR are negatively associated with firm leverage (*LEV*). In contrast, human rights (*HUM*) dimension of CSR is positively associated with firm leverage. The rest of the dimensions such as community (*COM*) and product (*PRO*) do not have any significant association with leverage. These results partially support H1b and imply that a negative association between CSR performance and leverage is mainly driven by diversity (*DIV*), employee relations (*EMP*) and environment (*ENV*) related dimensions of CSR. The contextual nature and changing impact of CSR activities is noticeable given the results reported in other

[6] We also repeat these analyses using short-term and long-term debt as dependent variable. The results for H1a and H2a only hold significant when long-term debt was used as dependent variable, implying that CSR initiatives are more beneficial in the long-run. These results are not reported for the sake of brevity but available from corresponding author upon request.

Table 5
CSR dimensions, leverage and MNEs.

VARIABLES	*LEV*					
	(1)	(2)	(3)	(4)	(5)	(6)
COM	-0.002					
	(-0.43)					
DIV		-0.016***				
		(-9.63)				
EMP			-0.008***			
			(-3.29)			
ENV				-0.003**		
				(-1.99)		
HUM					0.030***	
					(2.99)	
PRO						0.001
						(0.28)
MNE	-0.020***	-0.019***	-0.021***	-0.020***	-0.021***	-0.019***
	(-6.18)	(-5.97)	(-6.45)	(-6.42)	(-6.49)	(-6.01)
COM X MNE	-0.009*					
	(-1.79)					
DIV X MNE		0.005**				
		(2.55)				
EMP X MNE			0.001*			
			(1.76)			
ENV X MNE				0.003***		
				(2.84)		
HUM X MNE					-0.013	
					(-1.16)	
PRO X MNE						0.007
						(1.60)
Constant	-0.282***	-0.350***	-0.276***	-0.272***	-0.277***	-0.281***
	(-9.87)	(-11.95)	(-9.72)	(-9.56)	(-9.77)	(-9.78)
Observations	16,291	16,291	16,291	16,291	16,291	16,291
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year & Industry Fix	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.321	0.325	0.321	0.320	0.321	0.320
F-stat	106.3	108.6	106.4	106.1	106.4	106.2

This table presents regression results for the relationship between CSR performance at dimension level, the CSR performance of MNEs at dimension level and firm leverage. The CSR dimensions are community (COM), diversity (DIV), environment (ENV), employee relations (EMP), human rights (HUM), and product (PRO). T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

studies. For instance, the negative association between employee-related disclosures and leverage is noted in Verwijmeren and Derwall (2010) and Bae et al. (2011), while environmental performance is diversely (positively and negatively) associated to leverage (Pijourlet, 2015; Limkriangkrai et al., 2017). This potentially reveals the primacy of some CSR dimensions (and concerns thereof by stakeholders) in each country and how these might either add (or mitigate) the risk profile of a firm. Taken together, the results validate H1b and H2b by showing that relevance of each CSR dimension vary for fulfilling the implicit contracts and firms financing decisions based on the salience attributed to a particular stakeholder or more generally to a given societal concern.

For H2b, we find that the coefficient of interaction term for community related sub-dimension of CSR (*COM X MNE*) is negative and statistically significant while the coefficient of interaction terms for diversity (DIVX MNE), employee relations (*EMP X MNE*) and environment (*ENV X MNE*) related sub-dimensions of CSR is positive and statistically significant. The coefficient on the interactions term for rest of the dimensions i.e., human rights (*HUM X MNE*) and product (*PRO X MNE*) is statistically insignificant.[7] These results partially support H2b and imply that a positive association between the interaction term on CSR performance and firms' international exposure (*CSR X MNE*) and firm leverage is mainly driven by the diversity (*DIV*), employee relations (*EMP*) and environment (*ENV*) related dimensions of CSR. Hence, in addition to operating costs, credit risk and market competition (Harjoto, 2017; Bae et al., 2011; Sheikh, 2019), we find evidence that internationalization is a contingent factor of interest in the relationship between CSR performance and firm leverage. At the same time, it appears that only specific concerns (diversity, employee relations and environment) are seen to be relevant, potentially due to the relative potency of these concerns worldwide.

Table 6 reports the regression results to empirically test H3a. In Model 1–2 (3−4), we regress firm leverage (*LEV*) on the key independent variables, i.e., the overall CSR performance score (*CSR*) and the interaction term between the overall CSR performance

[7] We also ensure the robustness of these findings (H1b and H2b) by adding all dimensions in the same model. The unreported results remain largely consistent with those reported in Table 5. These results are not reported for the sake of brevity but available from corresponding author upon request.

Table 6
CSR, leverage and MNEs: Environmentally sensitive vs. environmentally non-sensitive industries.

VARIABLES	Environmentally Sensitive		Environmentally Non-sensitive	
	LEV			
	(1)	(2)	(3)	(4)
CSR	-0.001	0.003*	-0.007***	-0.011***
	(-0.45)	(1.76)	(-8.40)	(-8.91)
MNE	0.003	-0.001	-0.025***	-0.024***
	(0.48)	(-0.18)	(-6.40)	(-6.15)
CSR X MNE		-0.006***		0.007***
		(-2.60)		(4.23)
SIZE	0.026***	0.027***	0.042***	0.041***
	(15.69)	(15.89)	(34.80)	(34.42)
ROA	-0.220***	-0.218***	-0.299***	-0.301***
	(-12.93)	(-12.84)	(-19.04)	(-19.18)
FA/TA	0.135***	0.137***	0.167***	0.169***
	(9.08)	(9.20)	(16.44)	(16.60)
MTB	-0.002**	-0.001**	0.001	0.000
	(-2.22)	(-2.11)	(1.06)	(0.97)
VOL	0.056**	0.056**	-0.025	-0.026
	(2.00)	(2.01)	(-1.10)	(-1.13)
AGE	-0.001***	-0.001***	-0.001***	-0.001***
	(-6.13)	(-6.14)	(-7.38)	(-7.34)
Constant	-0.242***	-0.245***	-0.346***	-0.340***
	(-6.45)	(-6.52)	(-10.34)	(-10.16)
Observations	4,627	4,627	11,664	11,664
Year & Industry Fix	Yes	Yes	Yes	Yes
Cluster Effect	0.359	0.360	0.321	0.322
	58.62	57.57	89.86	88.84

This table presents regression results for the relationship between overall CSR performance, the CSR performance of MNEs and firm leverage using the subsample of environmentally sensitive and environmentally non-sensitive industries. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

score and internationalization (*CSR X MNE*) using the subsample of environmentally sensitive (environmentally non-sensitive) industries.[8] For environmentally sensitive industries, the result for the estimated coefficient on *CSR* in Model 1 is statistically insignificant and the estimated coefficient on the interaction term (*CSR X MNE*) in Model 2 is negatively significant at 1% level, implying that CSR performance has no effect on leverage of firms operation in environmentally sensitive industries while socially responsible MNEs operating in environmentally sensitive industries are less likely to rely on debt financing. In contrast, the results for environmentally non-sensitive industries sample reported in Models 3 and 4 show that coefficient on *CSR* and the interaction term (*CSR X MNE*) is negatively and positively significant at 1% level, respectively. Collectively, these results support H3a and confirms that industry nature is a significant determinant of the relationship between CSR performance, internationalization, and firm leverage.

Tables 7 and 8 contains the results on the association between sub-dimensions of CSR (i.e., community, diversity, employee relations, environment, human rights, and product), firms' foreign exposure (*MNE*), the interaction terms between sub-dimensions of CSR and firms' foreign exposure and firm leverage to empirically test H3b, using the subsample of environmentally sensitive and environmentally non-sensitive industries. For environmentally sensitive industries sample, the results reported in Table 7 shows that human rights (*HUM*) and product (*PRO*) dimension of CSR are positively and significantly associated with leverage (*LEV*). The rest of the dimensions do not have any significant association with leverage. Concerning the interaction terms, results show that the coefficient of interaction term for diversity (DIVX MNE) and product (*PRO X MNE*) related sub-dimension of CSR is negatively significant. However, the coefficient of interaction terms for rest of the CSR dimensions is statistically non-significant. In contrast, the results for environmentally non-sensitive industries sample reported in Table 8 shows that coefficient of interaction term for diversity (DIVX MNE), employee (*EMP X MNE*) and product (*PRO X MNE*) related sub-dimension of CSR is positively significant. Hence, this confirms that the nature of the industry drives the association between CSR, internationalization, and leverage at the sub-dimension level too.

5.3. Alternate sample and proxies of main variables

We re-investigate the association between CSR performance, firms' international exposure, the interaction term between CSR performance and firms' international exposure and firm leverage using alternate sample and measures of CSR performance and firms' international exposure to ensure the robustness of our main findings. First, we re-perform our baseline analysis by restricting our sample to firms with total assets (*SIZE*) greater than $250 million (Model 1–2). This will help us ensure that our findings are not driven

[8] Following prior studies (Cho et al., 2010; Cho and Patten, 2007), the chemical, metals, mining oil exploration, paper, petroleum, and electric industries are considered as environmentally sensitive and the rest of the industries as environmentally non-sensitive.

Table 7
CSR dimensions, leverage and MNEs: Environmentally sensitive industries.

VARIABLES	*LEV*					
	(1)	(2)	(3)	(4)	(5)	(6)
COM	0.007					
	(1.01)					
DIV		-0.005				
		(-1.42)				
EMP			-0.004			
			(-0.92)			
ENV				0.004		
				(1.05)		
HUM					0.044***	
					(3.43)	
PRO						0.037***
						(5.32)
MNE	0.003	0.001	0.001	0.003	0.003	0.001
	(0.53)	(0.25)	(0.12)	(0.54)	(0.27)	(0.13)
COM X MNE	-0.015					
	(-1.61)					
DIV X MNE		-0.008**				
		(-2.35)				
EMP X MNE			-0.007			
			(-1.37)			
ENV X MNE				0.005		
				(1.28)		
HUM X MNE					-0.015	
					(-0.87)	
PRO X MNE						-0.024***
						(-3.07)
Constant	-0.249***	-0.304***	-0.242***	-0.241***	-0.259***	-0.273***
	(-6.60)	(-7.71)	(-6.47)	(-6.45)	(-3.77)	(-7.14)
Observations	4,627	4,627	4,627	4,627	4,627	4,627
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year & Industry Fix	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.359	0.363	0.361	0.361	0.362	0.364
F-stat	57.44	58.31	57.71	57.70	33.84	58.49

This table presents regression results for the relationship between CSR performance at dimension level, the CSR performance of MNEs at dimension level and firm leverage using the subsample of environmentally sensitive industries. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

by the inclusion of small firms in our sample because MNEs are generally larger in size. Second, to check whether our findings are sensitive to the use of alternate measure of foreign exposure, we re-perform our baseline analysis using *FS>50%* (a dummy variable coded 1 if the foreign sales are greater than 50% of total sales and 0 otherwise) and *GSA* (the number of regions based on the geographical dispersion of sales) under Models 3–6. We operationalize this measure (i.e., *GSA*) of foreign exposure using the sales segment data available at Worldscope[9] which divide the outreach of firms into 10 key geographic segments.[10] It is because MNEs are perceived to disperse their operations in geographically diversified markets which also changes their operational needs and makes a difference to the way they function (Fernandes and Gonenc, 2016). Finally, following prior studies (Boubaker et al., 2020a; Mănescu, 2011), we use the average CSR performance score (*CSR_A*)[11] as an alternative measure of CSR performance and re-estimate our baseline analysis to check whether our results hold (Model 7–8). The results of these analyses reported in Table 9 are aligned with our main findings, the coefficient on CSR performance (*CSR*) and firms' international exposure (*MNE*) remain negative and statistically significant while the coefficient on the interaction term between CSR performance and firms' international exposure (*CSR X MNE*) remain positive and statistically significant. Hence, our results remain robust across all specifications.[12]

[9] WC19601 to WC19691: Sourced from Worldscope

[10] In World scope one geographic segment can represent one country, a group of countries or several geographic segments. According to the database, geographic regions relate to 8 key continents as: Africa, Asia, Eastern Europe, Latin America, North America, Oceana, Western Europe, and Others (for unclassified regions).

[11] *CSR_A* is the average of all CSR dimensions score.

[12] Following Sheikh (2019), we re-estimate our main Eqs. (1) and (2) after replacing our main dependent variable with market leverage (Model 1–2 of Appendix C), financial leverage (Model 3–4 of Appendix C), and by adding corporate governance (Model 5–6 of Appendix C) and free cash flows (Model 7–8 of Appendix C) as additional control variables. The results remain qualitatively similar to those reported under Table 4.

Table 8
CSR dimensions, leverage and MNEs: Environmentally non-sensitive industries.

VARIABLES	*LEV*					
	(1)	(2)	(3)	(4)	(5)	(6)
COM	-0.007					
	(-1.58)					
DIV		-0.019***				
		(-9.97)				
EMP			-0.008***			
			(-2.69)			
ENV				-0.017***		
				(-3.70)		
HUM					0.022	
					(1.61)	
PRO						-0.006
						(-1.56)
MNE	-0.026***	-0.026***	-0.026***	-0.027***	-0.028***	-0.025***
	(-6.71)	(-6.64)	(-6.63)	(-6.79)	(-7.03)	(-6.39)
COM X MNE	-0.005					
	(-0.79)					
DIV X MNE		0.011***				
		(4.71)				
EMP X MNE			0.007*			
			(1.75)			
ENV X MNE				0.008		
				(1.40)		
HUM X MNE					-0.016	
					(-1.03)	
PRO X MNE						0.011**
						(2.04)
Constant	-0.312***	-0.373***	-0.301***	-0.316***	-0.303***	-0.298***
	(-9.36)	(-10.93)	(-9.09)	(-9.49)	(-9.13)	(-8.89)
Observations	11,664	11,664	11,664	11,664	11,664	11,664
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year & Industry Fix	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.317	0.323	0.317	0.318	0.317	0.317
F-stat	87	89.24	86.94	87.25	86.84	86.87

This table presents regression results for the relationship between CSR performance at dimension level, the CSR performance of MNEs at dimension level and firm leverage using the subsample of environmentally non-sensitive industries. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

5.4. Tackling endogeneity

We acknowledge that our main analysis based on OLS estimations might be subject to potential endogeneity issues because of reverse causality or dynamic panel endogeneity. Our results imply that CSR performance impacts on the firms' leverage. However, firms with higher (lower) leverage may also have an active (passive) approach towards CSR practices due to the abundance (lack) of financial resources required to implement CSR initiatives, suggesting that not only CSR performance affect leverage, but leverage may also affect CSR performance. We therefore first employ dynamic panel estimations (i.e., system GMM) that controls for reverse causality, unobservable heterogeneity, and dynamic endogeneity (Gull et al., 2018; Nekhili et al., 2020; Roodman, 2009; Wintoki et al., 2012). The stability of the dynamic system GMM mainly depends on the serial independence of the residuals. The first-difference residuals should be serially correlated (AR1) by the means of their structure while second-difference residuals should not be serially correlated (AR2) to validate the use of system GMM. Model 1–2 of Table 10 report the results of the system GMM estimates which are qualitatively similar to those reported under Table 4. The diagnostic tests also demonstrate that the model is statistically well-fitted because the test for first-order autocorrelation (AR1) is significant but the test for second-order autocorrelation (AR2) is not significant. The Hansen (*p-value*) is also insignificant, suggesting that hypothesis of over-identification is rejected. Hence, the system GMM estimations also support our main results after controlling for potential endogeneity concerns.[13]

In addition to the system GMM, we also employ the two-stage least square (2SLS) technique by using peer CSR performance as an instrument to tackle the issue of endogeneity. Prior studies on CSR argue that firms CSR initiatives are mostly impacted by their peers' CSR policies (Attig et al., 2013; Boubaker et al., 2020a; among others). Following this argument, CSR studies (e.g., Boubaker et al., 2020a) use the peers' CSR performance as a valid instrument that drives the firms' CSR policies, and these policies impact the firms'

[13] We also perform instrumental variable-based system GMM (IV-GMM) regressions using the peer CSR average in the current year as an instrumental variable. The unreported results also confirm our main findings. These results are not reported in the manuscript for the sake of brevity but available from corresponding author upon request.

Table 9
Alternate sample and proxies for main variables.

VARIABLES	Size>250 M		FS>50%		GSA		CSR_A	
				LEV				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CSR	-0.005***	-0.008***	-0.005***	-0.006***	-0.006***	-0.008***	-0.080***	-0.132***
	(-7.00)	(-7.39)	(-8.04)	(-7.45)	(-8.22)	(-6.77)	(-5.39)	(-5.96)
MNE	-0.026***	-0.025***	-0.019***	-0.019***	-0.004***	-0.004***	-0.020***	-0.017***
	(-7.47)	(-7.17)	(-5.77)	(-5.72)	(-4.94)	(-4.56)	(-6.27)	(-5.41)
CSR X MNE		0.005***		0.001*		0.001**		0.089***
		(3.62)		(1.93)		(2.23)		(3.17)
SIZE	0.029***	0.028***	0.037***	0.037***	0.038***	0.038***	0.037***	0.037***
	(25.53)	(25.16)	(38.68)	(38.62)	(38.61)	(38.56)	(38.38)	(38.06)
ROA	-0.466***	-0.468***	-0.280***	-0.280***	-0.276***	-0.276***	-0.278***	-0.279***
	(-27.22)	(-27.36)	(-23.75)	(-23.76)	(-23.33)	(-23.39)	(-23.55)	(-23.63)
FAA	0.138***	0.138***	0.165***	0.165***	0.162***	0.162***	0.160***	0.160***
	(15.64)	(15.61)	(19.82)	(19.80)	(19.45)	(19.36)	(19.14)	(19.15)
MTB	0.002***	0.001***	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(3.21)	(3.15)	(-0.41)	(-0.41)	(-0.42)	(-0.49)	(-0.76)	(-0.82)
VOL	-0.009	-0.009	-0.001	-0.001	-0.002	-0.002	-0.006	-0.006
	(-0.46)	(-0.50)	(-0.06)	(-0.08)	(-0.13)	(-0.11)	(-0.31)	(-0.32)
AGE	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-8.15)	(-8.05)	(-9.01)	(-9.01)	(-8.72)	(-8.74)	(-9.03)	(-8.99)
Constant	-0.157***	-0.152***	-0.297***	-0.296***	-0.304***	-0.302***	-0.291***	-0.288***
	(-5.25)	(-5.08)	(-10.38)	(-10.35)	(-10.60)	(-10.53)	(-10.19)	(-10.09)
Observations	14,134	14,134	16,291	16,291	16,291	16,291	16,291	16,291
Year & Industry Fix	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Adj. R^2	0.320	0.321	0.323	0.323	0.322	0.322	0.321	0.322
F-stat	93.43	92.41	108.7	107.2	108.5	107.1	108.1	106.8

This table presents regression results for the relationship between CSR performance, the CSR performance of MNEs and firm leverage using alternate sample and proxies for main variables. Model 1–2 present results using subsample of larger firms (i.e., those with total assets more than $250 million). Model 3–4 and 5–6 present results using alternate measures of MNEs namely, FS>50% (i.e., percentage of foreign sales increased from 20% to 50%) and GSA (i.e., number of regions based on geographical dispersion of sales). Finally, Model 7–8 present results using CSR_A which is the average of all CSR dimensions score. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

outcomes. We also use the CSR industry peer average (based on Fama and French's 1997 48 industrial classification) and CSR geographic peer average (based on 3-digit ZIP code) as instruments in the first stage regressions. The unreported first stage results show that peer CSR performance is positively and significantly associated with the firms' CSR performance. Furthermore, second stage results reported under Model 3–4 of Table 10 show that our main findings are not subject to endogeneity.

5.5. Quantile regression

In this section, we employ quantile regression (QR) since it is argued that QR provide more comprehensive results than OLS estimates (Saeed et al., 2022). The OLS perform estimations based on the conditional mean and median (central distribution) while QR makes it possible to estimate results at different levels of the dependent variable (i.e., firm leverage) in the conditional distribution. In short, QR allows us to analyze the whole distribution, and this is relatively more effective at reducing the impact of outliers (Feng and Huang, 2021; Hung et al., 2010). To present a more comprehensive set of results and to examine whether our results remain persistent across different levels of the firm leverage, we adopt Feng and Huang's (2021) quantile regressions approach to examine whether our results vary across different levels of the firm leverage. Table 11 reports the results of QR estimates. Model 1–5 presents the results of QR estimates at 10%, 25%, 50%, 75%, and 90% of the sample distribution of the firm leverage. Irrespective of the percentile, the coefficient on CSR performance (*CSR*) and firms' international exposure (*MNE*) remain negative and statistically significant in all specifications. The coefficient on the interaction term between CSR performance and firms' international exposure (*CSR X MNE*) is not significant under Model 1 (i.e., 0–10% sample distribution of the firm leverage). However, the coefficient on the interaction term between CSR performance and firms' international exposure (*CSR X MNE*) is positively significant and shows an increasing trend under Model 2–4. Based on these results, we infer that firms' internationalization moderates the relationship of CSR performance and leverage when the level of firm leverage is higher than 10% and the influence of foreign activities on this relationship increases as the level of firm leverage increases.

5.6. Additional analysis

In this section, we re-investigate the association between CSR performance, firms' international exposure, the interaction term between CSR performance and firms' international exposure and leverage using different subsamples. First, we run our baseline analysis by splitting our sample in firms belonging to sin industries and rest of the industries (i.e., Regular) because the level of CSR

Table 10
Endogeneity tests.

VARIABLES	System GMM		2SLS	
			LEV	
	(1)	(2)	(3)	(4)
CSR	-0.001**	-0.010**	-0.007**	-0.013**
	(-2.09)	(-2.36)	(-1.98)	(-1.96)
MNE	-0.006*	-0.005*	-0.018***	-0.015***
	(-1.73)	(-1.74)	(-4.64)	(-3.12)
CSR X MNE		0.021***		0.009*
		(2.76)		(1.81)
SIZE	0.029***	0.032***	0.037***	0.036***
	(3.73)	(4.25)	(28.08)	(31.24)
ROA	-1.153***	-1.192***	-0.313***	-0.316***
	(-8.71)	(-8.90)	(-21.09)	(-21.73)
FA/TA	0.316***	0.274***	0.147***	0.146***
	(4.03)	(3.58)	(14.43)	(14.26)
MTB	0.021***	0.017***	0.000	0.000
	(4.22)	(3.51)	(0.60)	(0.56)
VOL	0.041	-0.033	0.007	0.006
	(0.26)	(-0.31)	(0.32)	(0.28)
AGE	-0.002	-0.003*	-0.001***	-0.001***
	(-1.31)	(-1.91)	(-5.85)	(-5.60)
Lag(LEV)	0.194***	0.205***		
	(4.95)	(4.96)		
Constant	0.000	0.000	-0.278***	-0.272***
	(1.24)	(0.12)	(-7.73)	(-8.06)
Observations	13,928	13,928	14,638	14,638
Number of New-ID	1,854	1,854		
Year & Industry Fix	Yes	Yes	Yes	Yes
Adj. R2			0.327	0.325
Chi2 (*p-value*)	0.000	0.000		
AR1 (*p-value*)	0.000	0.000		
AR2 (*p-value*)	0.312	0.189		
F-test			77.78**	76.50**
Hansen (p-value)		0.234		

This table presents regression results for the relationship between CSR performance, the CSR performance of MNEs and firm leverage using the system GMM and 2SLS estimations to tackle the issue of endogeneity. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

orientation varies across industries based on the nature of their operations (Cai et al., 2012).[14] We report the results of this analysis under Model 1–2 of Table 12 which shows that negative association between CSR and leverage is more pronounced for the subsample of sin industries ($\beta = 0.008, p < 0.01$) than regular industries ($\beta = 0.005, p < 0.10$). Furthermore, the coefficient on the interaction term between CSR performance and firms' international exposure (*CSR X MNE*) is positive and statistically significant only for the subsample of sin industries. This finding suggests that the association between CSR performance, internationalization, and leverage is dependent on the industry type.

Finally, our baseline analysis is revisited from the perspective of strongly governed (i.e., Strong) and weakly governed firms (i.e., Weak) since a firm's level of corporate governance may also impact the level of leverage (Do et al., 2018; Villarón-Peramato et al., 2018). To perform this analysis, we form a sub-sample of weak and strong governance firms using the MSCI ESG corporate governance dimension score. Specifically, we consider firms as with strong (weak) governance if the corporate governance dimension score is higher (lower) than the industry-year average. These results reported under Model 3–4 of Table 12 show that the coefficient on CSR performance (*CSR*) and firms' international exposure (*MNE*) remain negative and statistically significant under both subsamples. However, the coefficient on the interaction term between CSR performance and firms' international exposure (*CSR X MNE*) is statistically (in) significant for the subsample of (weak) strong governance firms, suggesting that the moderating effect of firms' international exposure on the relationship of CSR performance and leverage is subject to the firm level corporate governance strength.

6. Conclusion

Informed by the debate on the implications of CSR on corporate financing decisions (Attig et al., 2013; Cheng et al., 2014; Harjoto, 2017; Benlemlih, 2017a; La Rosa et al., 2018), we first ask whether CSR performance in particular dimensions translate into a greater consideration of stakeholders' implicit contracts with the firm (particularly with regards to the salience of particular stakeholders), thereby mitigating the risks of a lack of stakeholder support and enabling more equity financing relative to total debt financing. Based

[14] The subsample of sin industries include firms that deal in gambling, tobacco, oil, war, biotechnology, and adult entertainment.

Table 11
Quantile Regression.

VARIABLES	10% (1)	25% (2)	50% (3)	75% (4)	90% (5)
CSR	-0.003***	-0.006***	-0.006***	-0.007***	-0.009***
	(-5.81)	(-7.44)	(-5.10)	(-5.42)	(-6.50)
MNE	-0.008***	-0.006***	-0.008**	-0.016***	-0.009*
	(-5.65)	(-2.99)	(-2.51)	(-3.40)	(-1.83)
CSR X MNE	-0.000	0.001*	0.001*	0.002**	0.008***
	(-0.04)	(1.77)	(1.82)	(2.41)	(3.89)
SIZE	0.017***	0.028***	0.037***	0.040***	0.031***
	(11.23)	(38.40)	(47.92)	(33.36)	(14.71)
ROA	-0.059***	-0.107***	-0.228***	-0.506***	-0.657***
	(-9.43)	(-16.41)	(-11.43)	(-15.07)	(-15.64)
FA/TA	0.068***	0.145***	0.176***	0.167***	0.146***
	(8.05)	(16.00)	(21.66)	(16.63)	(11.57)
MTB	-0.001	0.000	0.003***	0.004***	0.002
	(-1.45)	(0.27)	(3.30)	(2.71)	(1.44)
VOL	-0.000	-0.004	-0.008	0.004	0.042
	(-0.03)	(-0.29)	(-0.46)	(0.12)	(0.99)
AGE	0.000	0.000**	-0.000***	-0.002***	-0.003***
	(0.68)	(2.02)	(-3.32)	(-17.89)	(-12.02)
Constant	-0.165***	-0.328***	-0.365***	-0.228***	0.030
	(-5.29)	(-13.62)	(-9.85)	(-5.84)	(0.56)
Observations	16,291	16,291	16,291	16,291	16,291
Year & Industry Fix	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.118	0.241	0.254	0.227	0.217

This table presents regression results for the relationship between CSR performance, the CSR performance of MNEs and firm leverage using the quantile regressions. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

Table 12
Additional analysis.

VARIABLES		Industry Type		Corporate Governance
	Regular	Sin	Weak	Strong
		LEV		
	(1)	(2)	(3)	(4)
CSR	-0.005*	-0.008***	-0.004***	-0.009***
	(-1.86)	(-6.28)	(-2.86)	(-6.80)
MNE	-0.009	-0.019***	-0.016***	-0.022***
	(-1.40)	(-4.76)	(-3.20)	(-5.34)
CSR X MNE	-0.003	0.003**	0.000	0.005***
	(-0.84)	(2.13)	(0.04)	(3.04)
SIZE	0.048***	0.036***	0.033***	0.042***
	(21.82)	(31.82)	(20.86)	(30.36)
ROA	-0.218***	-0.298***	-0.281***	-0.269***
	(-9.89)	(-21.41)	(-15.32)	(-17.46)
FA/TA	0.116***	0.175***	0.179***	0.147***
	(7.05)	(17.96)	(13.56)	(13.52)
MTB	0.001	-0.001	-0.000	-0.000
	(1.56)	(-1.51)	(-0.25)	(-0.00)
VOL	-0.033	0.011	-0.003	-0.006
	(-1.05)	(0.50)	(-0.11)	(-0.26)
AGE	-0.001***	-0.001***	-0.001***	-0.001***
	(-2.68)	(-8.48)	(-4.72)	(-7.53)
Constant	-0.446***	-0.282***	-0.282***	-0.333***
	(-6.68)	(-8.60)	(-5.78)	(-9.12)
Observations	4,915	11,376	7,055	9,236
Year & Industry Fix	Yes	Yes	Yes	Yes
Adj. R^2	0.346	0.321	0.305	0.340
F-stat	37.62	74.80	43.99	66.15

This table presents regression results for the relationship between CSR performance, the CSR performance of MNEs and firm leverage using the subsample of regular vs. sin industries and weak vs. strong governance firms. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all variables and data sources are provided in Appendix B.

on a sample of US firms, we find evidence of a negative association between the CSR dimensions of diversity, environment, and employment relations and firm leverage. Human rights performance is positively associated with firm leverage while product and community dimensions are not significant factors. We contend that human rights performance could be symptomatic of additional risks faced by the company while the non-significant result for the community and product dimensions may point to concerns about managerial over-investment and discretion.

Yet, when considering the case of internationalized firms (Lindner et al., 2018; Attig et al., 2016), a different dynamic seems to be coming into play whereby the interaction between internationalization and CSR performance dimensions (diversity, employee relations and environment) is associated to a higher level of firm leverage. As we highlight earlier, firms engaged in multinational operations face several political, social, and business risks compared to their domestic-only counterparts due to the liability of foreignness, and difficulties in appreciating and deploying the appropriate stakeholder management response (Tashman et al., 2019; Garcia-Mecca and Martinez-Ferrero, 2021). Stakeholder pressures are thus more complex and uncertain, such that CSR performance and dimensions do not necessarily address or limit these uncertainties. In other words, some CSR dimensions may not be a panacea to manage liability of foreignness. Hence, as a contribution to the existing debate about the role of CSR performance and firm leverage in different settings (Girerd-Potin et al., 2011; Pijourlet, 2015) and specifically in the context of multinational firms (Benlemlih, 2017a), we note that some CSR dimensions may not sufficiently satisfy the stakeholders' expectations. In fact, our findings suggest that many of the discrete CSR performance dimensions add to the risks of operating on a multinational basis, and do not enable easier access to equity financing (Park et al., 2013; Attig et al., 2016); except for community performance. In so doing, we highlight the varied relevance of internationalization as a variable of interest alongside operating costs, credit risk and market competition. Finally, our analysis also reveals that firms operating in environmentally-sensitive industries do appear to benefit from better CSR performance from a firm leverage perspective. In nutshell, our study highlights the relevance of selected initiatives (e.g., diversity, employee relations and environment) rather than adopting blanket approaches or a traditional reliance on community/philanthropy.

The findings of this research have practical implications from the perspective of domestic and internationalized firms in appreciating the varying relevance of CSR dimensions rather than merely seeing CSR, in its entirety, as a public relations exercise or as stakeholder/risk management exercise. Admittedly, the sample focuses on US firms, and it would be useful to extend the analysis to a large set of countries including the European Union, to understand how/why CSR contributes to financing decisions to a different (if not significant) extent. Finally, further measures of internationalization can help identify the scale of the multinational reach of firms, while an understanding of the extent to which such firms invest in CSR in home vs. specific host countries and their consequences on financing decisions would be of additional relevance.

CRediT authorship contribution statement

Mah Noor: Writing – original draft. **Asif Saeed:** Conceptualization, Formal analysis, Supervision. **Ammar Ali Gull:** Funding acquisition, Supervision, Writing – original draft, Writing – review & editing. **Teerooven Soobaroyen:** Writing – original draft, Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no conflict of interest.

Data Availability

The authors do not have permission to share data.

Appendix A. : CSR dimensions

Dimension	*Strength*	*Concern*
Community	Charitable Giving	Investment Controversies
	Innovative Giving	Indigenous People Relations
	Support for Housing	Negative Economic Impact
	Support for Education	Tax Disputes
	Non-US Charitable Giving	Other Concern
	Indigenous People Relations	
	Volunteer Programs	
	Other Strength	
Diversity	CEO	Controversies
	Promotion	Non-Representation
	Board of Directors	Other Concern
	Work/Life Benefits	
	Women & Minority Contracting	
	Employment of the Disabled	

(*continued on next page*)

(*continued*)

Dimension	*Strength*	*Concern*
	Gay & Lesbian Policies	
	Other Strength	
Employee Relations	Union Relations	Union Relations
	No-Layoff Policy	Health and Safety Concern
	Cash Profit Sharing	Workforce Reductions
	Employee Involvement	Retirement Benefits Concern
	Retirement Benefits Strength	Other Concern
	Health and Safety Strength	
	Other Strength	
Environment	Beneficial Products and Services	Hazardous Waste
	Pollution Prevention	Regulatory Problems
	Recycling	Ozone Depleting Chemicals
	Clean Energy	Substantial Emissions
	Communications	Agricultural Chemicals
	Property, Plant, and Equipment	Climate Change
	Other Strength	Other Concern
Human rights	Positive Record in South Africa Labor Rights	South Africa
	Indigenous Peoples Relations Strength	Northern Ireland
	Labour Rights Strength	Mexico
	Other Strength	Burma Concern
		Labor Rights Concern
		Indigenous Peoples Relations concern
		Other Concern
Product	Quality	Product Safety
	R&D/Innovation	Marketing/Contracting Concern
	Benefits to Economically Disadvantaged	Antitrust
	Other Strength	Other Concern

Appendix B. : Variable definitions and sources

Variable	Symbol	Definition	Sources
Leverage	*LEV*	Total debt divided by total assets.	Worldscope
CSR performance	*CSR*	Total strengths minus total concerns of six CSR dimensions.	MSCI ESG
Internationalization	*MNE*	The dummy variable coded 1 if foreign sales are greater than 20% of total sales and 0 otherwise.	Worldscope
CSR and MNE interaction	*CSR X MNE*	An interaction term between CSR and MNE dummy.	Worldscope & MSCI ESG
Community	*COM*	Total community strengths minus total community concerns.	MSCI ESG
Diversity	*DIV*	Total diversity strengths minus total diversity concerns.	MSCI ESG
Employee relations	*EMP*	Total employee strengths minus total employee concerns.	MSCI ESG
Environment	*ENV*	Total environment strengths minus total environment concerns.	MSCI ESG
Human rights	*HUM*	Total human rights strengths minus total human right concerns.	MSCI ESG
Product	*PRO*	Total product strengths minus total product concerns.	MSCI ESG
Firm Size	*SIZE*	Natural log of total assets.	Worldscope
Profitability	*ROA*	Profit before tax, depreciation, and amortization to total assets of a firm.	Worldscope
Tangibility	*FA/TA*	Ratio of fixed assets to total assets.	Worldscope
Market to Book	*MTB*	Sum of book value of debt and market value of equity scaled by the book value of total assets.	Datastream & Worldscope
Volatility	*VOL*	Standard deviation of weekly stock returns (minimum 26 weeks)	CRSP
Firm Age	*AGE*	Natural log of years since firm is incorporated.	Worldscope
Other Variables			
Firm Size>250 million	*Size>250 M*	Firms with total assets greater than $ 250 million.	Worldscope
Internationalization	*FS>50%*	Dummy variable coded 1 if foreign sale (FS) is greater than 50% of total sales and 0 otherwise.	Worldscope
Geographic segments by sales	*GSA*	Number of regions based on geographical dispersion of sales.	Worldscope
CSR	*CSR_A*	The average of all CSR dimensions score.	MSCI ESG

All continuous variables are winsorized at bottom 1% and top 99% levels.

Appendix C. : Robustness checks

VARIABLES	*Market Leverage*		*Financial Leverage*		*Leverage*		*Leverage*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CSR	-0.005***	-0.005***	-0.005***	-0.006***	-0.005***	-0.007***	-0.004***	-0.006***
	(-9.40)	(-6.84)	(-6.32)	(-5.03)	(-7.33)	(-6.62)	(-5.52)	(-6.42)
MNE	-0.011***	-0.010***	-0.014***	-0.013***	-0.019***	-0.018***	-0.018***	-0.016***
	(-4.35)	(-4.24)	(-3.88)	(-3.72)	(-6.13)	(-5.82)	(-5.71)	(-5.23)
CSR X MNE		0.001*		0.002*		0.003**		0.005***
		(1.88)		(1.89)		(2.24)		(3.63)
SIZE	0.022***	0.022***	0.031***	0.031***	0.037***	0.037***	0.046***	0.046***
	(29.21)	(29.05)	(27.76)	(27.63)	(36.27)	(35.96)	(41.78)	(41.60)
ROA	-0.125***	-0.125***	-0.219***	-0.220***	-0.275***	-0.276***	-0.263***	-0.264***
	(-13.68)	(-13.70)	(-14.46)	(-14.49)	(-23.35)	(-23.41)	(-22.45)	(-22.56)
FA/TA	0.128***	0.128***	0.148***	0.148***	0.161***	0.161***	0.150***	0.150***
	(19.76)	(19.76)	(15.22)	(15.24)	(19.24)	(19.24)	(18.00)	(17.99)
MTB	-0.006***	-0.006***	-0.000	-0.000	-0.000	-0.000	0.000	0.000
	(-17.91)	(-17.92)	(-0.72)	(-0.76)	(-0.49)	(-0.54)	(1.05)	(0.98)
VOL	-0.001	-0.001	0.003	0.003	-0.004	-0.005	-0.006	-0.007
	(-0.04)	(-0.05)	(0.14)	(0.14)	(-0.25)	(-0.26)	(-0.35)	(-0.37)
AGE	-0.001***	-0.001***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***	-0.001***
	(-7.62)	(-7.61)	(-11.33)	(-11.31)	(-8.84)	(-8.80)	(-8.45)	(-8.39)
GOVERNANCE					0.005**	0.005**		
					(2.53)	(2.56)		
FCF							-0.000***	-0.000***
							(-15.91)	(-16.13)
Constant	-0.157***	-0.156***	-0.222***	-0.221***	-0.295***	-0.292***	-0.422***	-0.419***
	(-7.08)	(-7.04)	(-8.19)	(-8.15)	(-10.19)	(-10.09)	(-14.36)	(-14.28)
Observations	16,291	16,291	16,154	16,154	16,291	16,291	16,275	16,275
Year & Industry Fix	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.278	0.278	0.339	0.339	0.323	0.323	0.333	0.334
F-stat	88.07	86.87	88.93***	87.60***	107.4	106.1	112.5	111.2

This table presents regression results for the relationship between CSR performance, the CSR performance of MNEs and firm leverage using alternate measure of leverage and additional control variables. Model 1–2 report the results using Market Leverage as dependent variable. Market Leverage is calculated as total debt scaled by the sum of total debt and market value of equity. Model 3–4 report the results using Financial Leverage as dependent variable. Financial Leverage is calculated as long-term debt scaled by total assets. Model 5–6 present the results using Governance as an additional control variable. Governance is calculated as the difference of total corporate governance strengths minus total governance concerns. Model 7–8 present the results using free cash flows (FCF) as an additional control variable. FCF is calculated as net income minus accrual scaled by total assets. T statistics are given in parenthesis. *, ** and *** refer to statistical significance at 10%, 5%, and 1%, respectively. Definition of all other variables and data sources are provided in Appendix B.

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