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ORIGINAL PAPER

The fit between corporate social responsibility and corporate governance: the impact on a firm's financial performance

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Abstract

This study asserts that the relationship between corporate social responsibility (CSR) and a firm's financial performance needs to be examined with reference to the 'fit' between CSR and corporate governance (CG). Therefore, we develop a model to analyze the moderating effects of corporate governance characteristics (board size, ownership concentration, board gender diversity and board independence) on the CSR-firm's financial performance link (measured by Tobin's q). The model is tested on a sample of 17,500 observations over an 11-year period and mainly finds support for the moderated hypotheses. The findings indicate that while board size and gender diversity moderate the CSR-firm's financial performance link positively, CSR interacting with ownership concentration negatively impacts a firm's financial performance. In addition, we find no support that board independence moderates the CSR-firm's financial performance link. We advance CSR research by demonstrating the moderating effects of corporate governance characteristics on the CSR-firm's financial performance link.

Keywords Corporate social responsibility · Corporate governance · Moderating effect · Firm's financial performance

JEL Classification M14 · G34 · L25 · C23

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1 Introduction

Over the last three decades, many organizations have faced growing pressure from various stakeholder groups (e.g., customers, government, employees, and competitors) to address a wide array of social and environmental issues, ranging from product eco-design policies to initiatives to avoid child labor in a firm's second or third-tier suppliers. In order to keep their license to operate in society, firms have responded to this pressure from stakeholder groups by developing corporate social responsibility (CSR) strategies or initiatives (Porter and Kramer 2006). In this study, CSR is referred to environmental and social dimensions, similarly as Cheng et al. (2014) and Ioannou and Serafeim (2012).

However, such CSR programs or activities have often been separated from a firm's core business or are unrelated to its shareholder value, which probably reduces their contribution to the firm's short- and long-term performance. For example, Tang et al. (2012) argue that the pace, consistency, relatedness, and path of a CSR engagement are essential if firms are to benefit from their CSR strategy. Isaksson and Woodside (2016) argue that scholars should integrate internal and external factors, organizational, and managerial design (structural components) when analyzing CSR and a firm's financial performance. More and more firms have started to change their CSR strategy from fulfilling current legal requirements to more than compliance, and are attempting to integrate CSR into their core business activities (Rothenberg et al. 2015). Consequently, it is expected that the effectiveness of CSR is dependent on the way a firm is governed internally. Therefore, in this paper, we specify the pivotal moderating role of corporate governance characteristics to better explain the impact of CSR on a firm's financial performance.

While corporate governance (CG) is focusing on addressing the agency problem balancing between the managers' and shareholders' interests, corporate social responsibility is oriented towards stakeholders other than shareholders. Sacconi (2010) understands CSR "*as the quality of an institutional form of the firm based on a norm concerning its corporate governance and its objective function—as a consequence—also its strategic management*" (Sacconi 2010, pp. 161). Furthermore, Sacconi (2010) suggests that the choice of the best corporate governance structure could be considered a most suitable solution regarding the 'social contract' among all stakeholders. In addition, several scholars confirm that corporate governance has a considerable impact on CSR dimensions (Deakin et al. 2002; Kimber and Lipton 2005; Rossouw 2005; Ryan 2005). As a result, new empirical strands of research are attempting to relate firm's CSR strategies to financial performance according to its corporate governance (Peng and Yang 2014; Ntim and Soobaroyen 2013). Empirical research of corporate governance thus far has primarily focused on its impact on a firm's financial performance (e.g., Rechner and Dalton 1991; Dalton et al. 1998; Bhagat and Bolton 2008; Kumar and Zattoni 2015; Arora and Sharma 2016; Pucheta-Martínez and Gallego-Álvarez 2019), and more recently a growing number of researchers have provided evidence suggesting that various board characteristics can have significant influence on CSR

(e.g., Johnson and Greening 1999; Harjoto and Jo 2011; Jo and Harjoto 2012). Nowadays boards are increasingly seen as responsible for the implementation and monitoring of CSR activities and practices. The literature has emphasized the role of board of directors for corporate social responsibility actions beyond addressing the agency problem between the shareholders and the managers (e.g., Zahra et al. 1993; Hung 2011). More precisely, they are considered as 'agents' that represent the interests of broader groups such as corporations, consumers, environmentalists, civil society groups, and others (Eisenhardt 1989; Hung 2011).

A study by McKinsey indicates that CSR is becoming a more strategic and integral part of a firm's business strategy, and the board has the primary responsibility for achieving CSR-related objectives. For instance, 43% of the respondents say their firms seek to align sustainability with their overall business goals, mission or values, and 36% see sustainability as a top-three CEO priority (McKinsey 2014). In the traditional view, originally represented by Friedman (1970), corporate governance could be interpreted as a mechanism to protect the interest of the shareholders. This narrow definition of corporate governance focuses on the return on investment to the shareholders, with little consideration given to social or environmental considerations when making (strategic) decisions (Shleifer and Vishny 1997). Over the years, the perception of corporate governance has evolved to a broader (modern) view, which highlights that a board's responsibility is not limited to shareholders, but also to other stakeholders and the society in which the firm operates (Freeman 1984; Hill and Jones 1992; Kiel and Nicholson 2003). In an interview in the Financial Times in March 2009, former General Electric CEO Jack Welch said: '*Shareholder value is a result, not a strategy… Your main constituencies are your employees, your customers and your products*'. With this meaning of the stakeholder theory, corporate governance could be seen as a central aspect in balancing the interests of all stakeholders while ensuring that a firm survives in a competitive environment. Accordingly, Hung (2011) argues that one of the main contributions of the board of directors should be oriented to balancing organizational, societal and environmental well-being. Therefore, corporate governance could be a missing link between CSR and firm's financial performance by successfully incorporating CSR activities into key organizational processes through top-level management support. Such a relationship between corporate governance, CSR and a firm's financial performance will be discussed in detail in the following section.

We develop and test a model in which corporate governance characteristics play a moderating role in the relation between CSR and firm's financial performance. The study makes significant contributions since it shows how the relationship between CSR and a firm's financial performance depends on the 'fit' between CSR and CG. Therefore, it suggests that the impact of CSR on a firm's financial performance needs to be examined in the context of corporate governance. Consequently, it helps to identify the governance conditions under which CSR may improve a firm's financial performance. As proposed by Grewatsch and Kleindienst (2017), in order to examine the direction and strength of the relationship between CSR and financial performance, the moderator approach should be applied. We use two types of CG indicators as potential moderators: board characteristics (board size, independent directors, and gender board diversity) and ownership concentration. The rationale

for choosing those two types of CG indicators is based on the fact that both board characteristics and ownership influence firm strategic decisions (Dalton et al. 2007; Bebchuk and Weisbach 2010).

Moreover, as indicated by Gillan (2006), the board of directors is considered to be the most important mechanisms for corporate governance since the board performs internal control by monitoring business management. More precisely, as suggested by Ntim and Soobaroyen (2013) and Jizi et al. (2014), larger boards benefit from better expertise, experience and stakeholder representation, which could lead to the increased demand for CSR activities. The presence of diverse stakeholders on larger boards can lead to greater demand for different CSR activities, and therefore larger boards can be expected to engage in good CSR practices. Khan et al. (2013) argue that board independence presents a primary corporate governance mechanism since it can assure management supervision. Furthermore, Neville et al. (2018) consider board independence to be synonymous with good governance indicating that it could help firms to avoid corporate misconduct. Different legislative initiatives posit that the presence of women on boards positively influences firm governance (Carter et al. 2003, 2010; Adams and Ferreir 2009). Ntim and Soobaroyen (2013) suggest that boards of diverse gender also increase board independence, which improves managerial monitoring and performance but also boosts ideas and opinions in board discussions. In addition, a diverse board of directors helps boards to identify more easily the needs and interests of different stakeholders, as reflected in CSR activities (Harjoto et al. 2015). Finally, Aguilera and Crespi-Cladera (2016) consider ownership to be at the core of governance since '*no firm exists without owners and the property rights allocated to these owners*' (Aguilera and Crespi-Cladera 2016, p. 50). Crifo et al. (2015) suggest that ownership concentration is pivotal because owners' interests differ between small and large shareholders. Moreover, large shareholders are the most influential actors on firm decisions to invest in social activities (de Graaf and Herkstroter 2007; Crifo et al. 2015).

In addition, the ASSET4 data used in this analysis is considered a leader in providing structured and standardized environmental, social, and governance firm information (Collison et al. 2008; Filbeck et al. 2009; Cheng et al. 2014; Sidhoum and Serra 2018). The financial-related information in ASSET4 comes from firms' financial statements. Moreover, the data comprise firms from around 50 countries and three continents, which aids in further enhancing the generalizability of the findings. Therefore, analyzing the moderating effects of corporate governance characteristics on the CSR-firm's financial performance link in various institutional and cultural settings increase the external validity of the conclusion.

The rest of the paper is organized as follows: the next section provides a brief literature review on the link between CSR, corporate governance and a firm's financial performance, and Sect. 3 develops the hypotheses. We outline the data and the method that we employ in this analysis in Sects. 4 and 5, respectively. Section 6 presents the obtained results. Section 7 includes the discussion of the results and the conclusion. We conclude the paper with the discussion of some limitations of our study and present some thoughts for future research.

2 Literature review

Contradictions have emerged regarding the CSR-firm's financial performance link. Some studies conclude that CSR improves a firm's financial performance (e.g., Cochran and Wood 1984; Waddock and Graves 1997; Orlitzky et al. 2003; Margolis et al. 2009; Crifo et al. 2016). Other scholars state that costs related to CSR investment greatly outweigh any benefit of social contributions and so it does not enhance a firm's financial performance (Friedman 1970; Brummer 1991; McWilliams and Siegel 1997; Mahoney and Roberts 2007). Accordingly, Wood (2010) suggests that the contradictions in results could be due to measurement, methodological and theoretical issues. Furthermore, even though a great deal of research has been devoted to the link between CSR and a firm's financial performance, most of it analyzes the direct link between these two elements. Recently, several scholars have expanded further on this direct relationship, suggesting that the impact of CSR on a firm's financial performance may be contingent on intermediate factors that can improve our understanding of the CSR-firm's financial performance relationship (Surroca et al. 2010; Servaes and Tamayo 2013; Tang et al. 2012; Delmas and Pekovic 2013; Rothenberg et al. 2015). Servaes and Tamayo (2013) and Crifo et al. (2015) indicate corporate governance as a potential moderator of the relationship between CSR and a firm's financial performance. De Graaf and Stoelhorst (2009) consider governance structures and systems to be a natural focal point for CSR research effect.

Previously, scholars argued that the role of boards of directors should be based on two distinct theories: the agency and resource dependence theories (Hillman and Dalziel 2003; Huse 2005) since their involvement is associated with corporate control (monitoring) and service (advising) tasks (Forbes and Milliken 1999). According to the agency theory, boards monitor and control actions of managers in order to protect the interest of owners (Berle and Means 1932; Jensen and Meckling 1976; Fama and Jensen 1983). Following the resource dependence theory, Pfeffer and Salancik (1978) consider the board to be a provider of resources such as advice and counsel, legitimacy, channels for communicating information between external organizations and the firm, and preferential access to commitments or support from critical elements outside the firm. In other words, based on this theory, the role of boards is to provide advice to top managers in acquiring valuable external resources that are usually controlled by the stakeholders (Pfeffer 1972; Hillman et al. 2009). It is noteworthy that, as suggested by Hillman and Dalziel (2003), integrating both theories when analyzing the role of the board of directors '*allows for a more fully specified model but also a richer understanding of how board capital is related to both monitoring and the provision of resources and how incentives moderate these relationships* '(Hillman and Dalziel 2003, p. 391).

Corporate governance is related to the firm's strategic decisions and may contribute to a firm's social responsibility (Brammer and Millington 2005; Neubaum and Zahra 2006; Aguilera et al. 2007; Barnea and Rubin 2010; Filatotchev and Nakajima 2014). Findings by Filatotchev and Nakajima (2014) demonstrate that

the firm's choice related to the CSR approach is not random since it depends on particular corporate governance mechanisms employed inside the firm. More precisely, the authors find that when firms establish hierarchical monitoring and managerial incentive systems focused on financial performance, the firms' ability to deploy CSR strategies is limited while a combination of strategic controls with management's incentives linked to the triple bottom line creates a more proactive approach to CSR.

Given that, corporate governance becomes fundamental to the firm's social behavior, and consequently it shapes the link between CSR and firm's financial performance (Peng and Yang 2014; Ntim and Soobaroyen 2013). Additionally, Arora and Dharwadkar (2011) indicate that effective governance restrains negative CSR while determining the levels of positive CSR based on a cost–benefit analysis, which could produce positive effects on a firm's financial performance. Therefore, it is expected that in order to improve a firm's financial performance, CSR activities should be matched with the corporate governance context. In other words, the positive link between CSR and corporate governance will generate improvement in the firm's financial performance.

This study attempts to extend and refine the relationship between CSR and a firm's financial performance by investigating the possible moderating effects of corporate governance. We argue that corporate governance defines a firm's social behavior, and the level of fit between corporate governance and social behavior will, in turn, relate to a firm's financial performance.

Previous literature has paid particular attention to governance characteristics that may influence the quality of board monitoring, such as board size, ownership concentration, board gender diversity, and board independence. Therefore, based on the previous reasoning, we focus on those four types of corporate governance as potential moderators. In addition, prior research shows that these variables are significant predictors of both CSR investment (e.g., Barnea and Rubin 2010; Harjoto and Jo 2011, 2012; Ntim and Soobaroyen 2013; Dam and Scholtens 2013; Jizi et al. 2014; Crifo et al. 2015) and a firm's financial performance (e.g., Cubbin and Leech 1983; Leech and Leahy 1991; Carter et al. 2003; Krivogorsky 2006; Campbell and Mínguez-Vera 2008; Lefort and Urzua 2008; Guest 2009).

Overall, the previous discussion suggests that corporate governance can constitute a way of deciphering the puzzle of the CSR-firm's financial performance relationship. In the following sections, we propose arguments regarding *why* and *how* board size, ownership concentration, board gender diversity, and board independence influence CSR and, eventually, the firm's financial performance.

3 Hypotheses development

3.1 Board size

Previous literature recognizes that larger boards are associated with greater diversity in expertise and experience, in turn positively influencing corporate reputation and image (Mackenzie 2007; Ntim and Soobaroyen 2013; Jizi et al. 2014). In addition,

firms with larger boards have better quality monitoring, which is expected to enhance the firms' social performance (Ntim and Soobaroyen 2013; Jizi et al. 2014). Furthermore, larger boards expand and span organizational boundaries by providing access to external resources and information and establishing critical strategic relationships with less obvious stakeholders (Pfeffer and Salancik 2003; Hillman and Dalziel 2003). Accordingly, a review of the literature provides several empirical findings that sustain the positive relationship between board size and CSR. Using a sample of listed corporations from 2002 to 2009, Ntim and Soobaroyen (2013) support the view, based on the obtained results, that having larger boards drives firms to invest more in CSR activities. In the same sense, working on the sample of large US commercial banks for the period 2009–2011, Jizi et al. (2014) find that board size is positively related to CSR disclosure. Jo and Harjoto (2011) offer evidence indicating that CSR engagement is adopted by firms with larger boards.

While larger board size may facilitate board functions, larger boards suffer from coordination and communication problems and hence face more difficulties in solving the agency problem among the members, which may decrease their firms' financial performance (e.g., Lipton and Lorsch 1992; Jensen 1993). These suggestions also find support in empirical research which confirms a negative relationship between board size and a firm's financial performance (e.g., Lipton and Lorsch 1992; Jensen 1993; Yermack 1996; Eisenberg et al. 1998; Carter et al. 2003; Erhardt et al. 2003; Guest 2009; Campbell and Mínguez-Vera 2008; Fernandez-Gago et al. 2016).

In contrast, although board size negatively affects a firm's financial performance, the negative impact is expected to disappear since larger sized boards with better monitoring fulfill more social responsibility issues inside their firms, leading to better financial performance. In other words, larger boards ensure compliance with corporate regulations and norms, including CSR practices, which improves firm's financial performance (Ntim and Soobaroyen 2013).

Considering that the previous discussion proposes arguments that support both positive and negative moderating roles of board size, we propose the following competing hypotheses:

Hypothesis 1a: Board size moderates positively the relationship between CSR and firm's financial performance.

Hypothesis 1b: Board size moderates negatively the relationship between CSR and firm's financial performance.

3.2 Ownership concentration

Previous literature has recognized that ownership concentration amplifies information asymmetry between different parties (e.g. Heflin and Shaw 2000; Claessens et al. 2002; O'Neill and Swisher 2003; Belghitar et al. 2011; Elbadry et al. 2015). Two concepts of opportunistic behavior can arise from information asymmetry: adverse selection (i.e. hidden information) and moral hazard (i.e. hidden actions) (e.g. Stiglitz 1985; Nayyar 1990; Sanders and Boivie 2004). Sanders and Boivie (2004) explain that adverse selection is associated to the qualitative differences in

initial conditions while moral hazard refers to the asymmetry about unobserved actions.

Information asymmetry can provoke conflicts between majority and minority shareholders as majority shareholders can exploit minority shareholders (Shleifer and Vishny 1997; La Porta et al. 1999; Martinez-Ferrero et al. 2018). This occurs since those in control have superior information (Martinez-Ferrero et al. 2018) what generates an increase in adverse selection problems (Heflin and Shaw 2000). Moreover, majority shareholders can minimize and delay the disclosure of information in order to prevent other shareholders to interfere in their actions (Fan and Wong 2002; Chau and Gray 2002; Attig et al. 2006). Large shareholders have greater incentive to block managers from investing in non-shareholder value-maximizing activities (Desender and Epure 2013) while pursuing self-interest actions at the expense of society and other stakeholders (Jensen and Meckling 1976; Anderson and Reeb 2003; Peng and Yang 2014; Elbadry et al. 2015), which may provoke additional agency conflicts (Hill and Jones 1992) and worsen the firm's financial performance. Similarly, Claessens et al. (2002) show that deviation of control from ownership leads to agency costs that decrease firm value. In addition, as suggested by Barnea and Rubin (2010), in order to enhance reputational status, large shareholders may decide to invest excessive amounts in CSR, which could be reflected negatively on the firm's value. In this context, as majority shareholders can act in their own self-interest which minority shareholders may not be privy to, this poses moral hazard issue.

It is notable that managers' decision to invest in CSR is likely also to reflect high information asymmetry (Deckop et al. 2006; Peng and Yang 2014). Accordingly, in the context of high information asymmetry, managers are in the position to hide their true motives regarding CSR investment (McWilliams et al. 2006) what induces adverse selection. What more, it is considered that their decision to invest in CSR are more related to preserving their position, maintain their power, and increase their compensation, which leads to a degradation of financial performance (Brammer and Millington 2008; Jo and Harjoto 2012; Akben-Selcuk 2019). In this context, moral hazard occurs since managers' behavior is not appropriate (Ciliberti et al. 2011) and could not be constrained by shareholders.

Several empirical papers mainly support the negative role of ownership concentration when examining the link between CSR and a firm's financial performance. For instance, employing a sample that includes non-financial public firms listed on the Borsa Istanbul (BIST)-100 index and covering the period between 2014 and 2018, Akben-Selcuk (2019) empirically confirmed that the relationship between CSR and financial performance is negatively moderated by ownership concentration even when endogeneity is controlled. Furthermore, working on a sample of CSR-awarded firms in Taiwan during 2007–2016, Ting and Yin (2018) found that the shareholders' excess control right strengthens the agency problem between controlling shareholders and minority shareholders and negatively influences the link between CSR and a firm's financial performance. Similarly, findings from Peng and Yang (2014) reveal that the divergence between control rights and the cash flow rights of controlling owners negatively moderates the relation between social and short- and long-run financial performance.

Based on the previous discussion and from the perspective of a moderating approach, we provide following hypothesis on the moderating effect of ownership concentration.

Hypothesis 2: Ownership concentration moderates negatively the relationship between CSR and a firm's financial performance.

3.3 Board gender diversity

Board diversity is the corporate governance mode that refers to various characteristics of the board members (e.g., gender, race, age) that are found to shape decision-making processes (Van der Walt and Ingley 2003). Among various board diversity characteristics, gender is one of the most significant and controversial issues in the literature, political debates, and society in general. Campbell and Mınguez-Vera (2008) state that gender is '*the most debated diversity issue, not only in terms of board diversity, but also in terms of female participation in economic activity and in society in general*' (Campbell and Mınguez-Vera 2008, pp. 437). Several EU countries have started adopting either legislative or voluntary initiatives to promote female representation on corporate boards (e.g., Campbell and Minguez-Vera 2008; Bøhren and Strøm 2010; Arguden 2012; Nekhili and Gatfaoui 2013), as well as developing countries such as India, China, and the Middle East (Singh et al. 2008). In addition, as suggested by Galbreathr (2018), fulfilling stakeholders' requests through their influence on firm CSR orientation, women on boards also significantly impact financial performance.

Due to the importance of female board members, in this study, we will focus on board gender diversity as a potential moderator between CSR and firm's financial performance.

Using the upper echelons theory (UET), which argues that directors' cognitive frames, determined by their prior knowledge, experiences, and values, directs the firm corporate strategy, Byron and Post (2016) suggest that boards' orientation towards corporate social responsibility varies according to their gender composition. The authors indicate that female directors' values are more in line with corporate social responsibility. Additional reasoning that supports that women are more focused on socially responsible activities could be traced in ethics of care literature. The literature states that women's' reasoning is more based on care in comparison to that of men (Gilligan 1982; Held 2006), which could be related to the improved CSR orientation.

Furthermore, Hillman et al. (2002) confirm that women are more oriented to philanthropic and community actions, meaning that their decision would be more based on non-business perspectives. In the same vein, traditionally, women are more socially and environmentally oriented than men are (Bord and O'Connor 1997; Zelezny et al. 2000; Torgler and Garcia-Valinas 2007; Lanfranchi and Pekovic 2014; Fernandez-Gago et al. 2016). Accordingly, having more female members may sensitize boards to invest in CSR initiatives.

This view is empirically corroborated by Ntim and Soobaroyen's (2013) findings, which indicate that boards of diverse gender and ethnic backgrounds can help a firm

to improve its social responsibility. In the same vein, working on a meta-analysis of 87 independent samples representing a range of over 20 countries, Byron and Post (2016) show that firms with more female board directors engage in more corporate social responsibility and enjoy more favorable social reputations. Similarly, Bear et al. (2010) find that more women on the board has a positive impact on ratings for CSR.

Scholars posit that gender diversity in the boardroom improves a firm's financial performance (Carter et al. 2003; Erhardt et al. 2003; Campbell and Mínguez-Vera 2008). Carter et al. (2003) suggest several reasons that can explain how gender diversity drives firm's financial performance improvement: (1) better understanding of the marketplace by matching the diversity of a firm to the diversity of the firm's potential customers and suppliers, thus increasing the ability to penetrate markets; (2) increasing creativity and innovation; (3) producing more effective problem-solving by proposing alternative solutions and by carefully exploring the consequences of these solutions; (4) enhancing the effectiveness of corporate leadership; (5) promoting more effective global relationships.

In summary, good corporate governance in the form of board gender diversity has a positive effect on CSR and, consequently, on a firm's financial performance (Ntim and Soobaroyen 2013). Therefore, the positive effect between CSR and a firm's financial performance is expected in firms with board gender diversity, suggesting a positive moderating effect:

Hypothesis 3: Board gender diversity moderates positively the relationship between CSR and a firm's financial performance.

3.4 Board independence

Extant literature on corporate governance suggests that board independence positively affects a firm's socially responsible behavior. For instance, Jizi et al. (2014) find a positive and significant relationship between board independence and CSR disclosures. The authors explain their findings within the agency theory. More precisely, they argue that independent outside directors on the board will reinforce the board monitoring and control function to ensure that the social interests of shareholders are protected. Additionally, they suggest that independent directors are less likely to focus on short-term financial objectives than on long-term ones that could be generated by CSR investment. In the same vein, Deegan (2002) indicates that having independent directors on the board resolves the legitimacy gap by balancing between different interested groups. Consequently, boards with more independent board members can perform CSR-related activities more effectively, since they are not bound by short-term financial goals that might be negatively affected by such activities. Moreover, Fernandez-Gago et al. (2016) demonstrate, using panel data on Spanish firms, that board independence positively influences the adoption of social activities and having resources available in the firm will expand this relation. Similarly, Khan et al. (2013) examine the relationship between the proportion of independent directors and the level of CSR disclosures in 135 manufacturing firms listed in Bangladesh and find a positive effect of independent directors on the level of CSR

disclosures. Ntim and Soobaroyen (2013) affirm that independent directors constitute a way of enhancing legitimacy by serving as a sign of congruence between corporate practices and societal expectations. In the same sense, Harjoto and Jo (2011, 2012) also find that board independence is positively related to CSR disclosure. Neville et al. (2018) conclude, based on findings from a meta-analysis of 135 studies spanning more than 20 countries, that firms with more-independent boards are less likely to engage in corporate misconduct.

Although it could be that independent board directors are ineffective because they usually have less knowledge about a firm, which would negatively influence firm's financial performance, several researchers empirically investigating this question have found that board independence leads to better financial performance (Dalton et al. 1998; Black et al. 2006; Krivogorsky 2006; Lefort and Urzua 2008). The rationale that supports these results suggests that independent board members have incentives to monitor management, which makes them more favored by the market (Fama 1980; Fama and Jensen 1983). In other words, board independence facilitates board attentiveness and rationality, which improves executive director supervision and the firm's financial performance.

Johnson and Greening (1999) note that outside board members representing many different constituents have a broader range of experience and an enhanced awareness of critical social or environmental contingencies that may lead to fines, penalties or adverse media exposure, which might negatively affect a firm's future financial performance. Ntim and Soobaroyen (2013) argue that independent board members improve managerial monitoring, motivating managers to engage in sustainable CSR practices with potentially favorable implications for their firms' financial performance. Coincidentally, board independence is expected to play a moderating role, which transmits the positive effect of CSR to the firm's financial performance. Therefore, we hypothesize that:

Hypothesis 4: Board independence moderates positively the relationship between CSR and a firm's financial performance.

4 Empirical analysis

4.1 Data and sample

Our primary data source is ASSET4 from Thomson Reuters Environmental Social and Governance (ESG) Research Data, which is one of the major ESG rating agencies. Thomson Reuters ASSET4 is a leading provider of objective, comparable, and systematic ESG information covering more than 4000 firms worldwide. Accordingly, the data offers professional investors and researchers a comprehensive platform for firm, industry or nation-specific benchmarks. Thomson Reuters ASSET4 covers the leading indices worldwide including MSCI WORLD, MSCI Europe, STOXX 600, NASDAQ 100, RUSSELL 1000, S&P 500, FTSE 100, ASX 300, and MSCI Emerging Market. The number of firms annually covered increased from 750 in 2002 to more than 4300 in 2012. The sample covers over 50 countries, and most firms are from North America (approximately 38%), Europe (approximately 35%)

and Northeast Asia (approximately 17%) (for further details please see "Appendix 1"). Notably, ASSET 4 does not collect comprehensive ESG data in the years before 2008 (descriptive statistics by year are presented in "Appendix 2"). The ESG rating is based on primary data that stems from objective and publicly available sources including CSR and annual reports, NGO websites, and stock exchange filings. Specially trained research staff collects more than 750 data points aggregated into an equally weighted framework of 250 key performance indicators that they further group into 18 categories within four pillars: social performance, environmental performance, corporate governance performance, and economic performance (Thomson Reuters 2013).[1] At each level, indicators, categories, pillars, and the overall CSR are calculated by equally weighting and z-scoring all underlying data points and comparing them with the rest of the firms in the ASSET4 universe to ensure objectivity. The ASSET4 database is our preferred choice for the analysis of CSR for the following reasons. First, ASSET4 covers firms from all over the world, which brings additional insights to the CSR research in comparison to the quasi-standard database in CSR research from KLD, which focuses solely on US firms. Second, since all firms of the different stock indices are listed, there is less risk of being confronted with a sample selection bias on firms actively marketing their social or environmental initiatives. This selection bias might appear in databases that focus on firms demonstrating strong environmental and social practices like the Dow Jones Sustainability Index or FTSE4good Index. Third, ASSET4 data are collected using a prescribed catalog of criteria that is identical for all firms inside the database. This strict criteria catalog provides a balanced view to compare firms all over the word concerning their efforts in CSR.

We draw our firm-specific financial data from Worldscope database, which contains accounting, financial, and market data from publicly traded firms worldwide. Subsequently, we have a data set from ASSET4 for the period of 2002–2012 and a second data set from Worldscope for the period of 2001–2013. After merging the ASSET4 data with Worldscope, our final sample is an unbalanced panel dataset that includes 3371 firms with 17,500 firm-year observations covering a period from 2003–2013.

4.2 Dependent variable

We measure firm's financial performance by Tobin's q, which is the market value of the firm, divided by the replacement costs of its assets. This market-to-book ratio is a modified version of Tobin's q as commonly used in the empirical literature (Richard et al. 2007; Wagner 2010; Li and Zhang 2010; Arora and Dharwadkar 2011). Tobin's q has been widely used as an indicator of firm's financial performance in economics research (e.g., Lindenberg and Ross 1981) and in international business literature (see Morck and Yeung 1991; Kor and Mahoney 2005). Compared to accounting-based measures, such as return on assets (ROA), return on equity (ROE)

[1] Further description of the Thomson Reuters ASSET4 dataset is available online at: https://extranet.datastream.com/data/ASSET4%20ESG/Index.htm.

or return on sales (ROS), which represent short-term financial performance and profitability, Tobin's q is a forward-looking performance measure because it is based on the market value of the firm and is more robust against accounting manipulations. The widespread use of Tobin's q in the CSR literature (see, for example, Dowell et al. 2000; Konar and Cohen 2001; King and Lennox 2002; Wagner 2010; Jo and Harjoto 2011; Isaksson and Woodside 2016) stems from the fact that the effects of CSR are likely to happen in the medium/long term, and hence the use of a measure of firms' expected long term growth opportunities is necessary. Furthermore, Servaes and Tamayo (2013) argue that it is certainly possible for a firm to engage in more CSR activities that are important to the long-term interests of a firm by deliberately sacrificing some current profitability. Therefore, current year Tobin's q is an appropriate financial performance measure in the context of this study as CSR is more likely to impact future profitability and the intangible value that investors assign to a firm (Jayachandran et al. 2013). Nevertheless, to avoid the influence of outliers, we winsorized Tobin's q at the 1st and 99th percentiles to limit extreme and mostly unstable values.

4.3 Independent variable

Our independent variable, CSR, includes ASSET4′s social and environmental performance scores, similarly as in the work of Ioannou and Serafeim (2012) and Cheng et al. (2014) using the same data. Therefore, the CSR measures a company's capacity to generate trust and loyalty with its workforce, customers and society. It also measures a firm's ability to reduce environmental risk and generate environmental opportunities in order to minimize the environmental impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems (Thomson Reuters 2013). The social performance score contains a variety of questions regarding employment quality, training and development, health and safety, diversity, human rights, community relations and product responsibilities, whereas the environmental performance score includes questions concerning emissions and resource reduction in the production and operational processes, as well as the research and development of eco-efficient products or services. Because there is no theoretical discussion about how to weight each category in constructing an aggregated CSR in ASSET4, we follow the common approach used by several scholars (Waddock and Graves 1997; McWilliams and Siegel 2000; Hull and Rothenberg 2008; Barnett and Salomon 2012) of determining the CSR by calculating the sum of all categories.[2] The resulting z-score is a continuous variable from 0 to 1; the higher the score, the more socially responsible the firm is in comparison to all companies in the ASSET4 data set. Therefore, unlike the well-known KLD measures, ASSET4 provides a relative measure of the level of CSR instead of an absolute one.

[2] We note that these articles use the KLD database instead, but we think the concept of equal weights can be used interchangeably. However, we have to admit that there is a need for further research to develop a more fine-grained weighting scheme. A possible approach, which is also often used with KLD data, might be to address the same weight to activities of each stakeholder group.

4.4 Board characteristics

We draw our board characteristics from the ASSET4 database, which provides information on the following variables annually. *Board size* is measured as the total number of board members at the end of the fiscal year. *Ownership concentration* is calculated as the percentage of ownership of the single biggest owner by voting power. *Board gender diversity* represents the percentage of women on the board of directors. *Board member independence* is measured by the ratio of non-executive to executive board members reported by the firm (in percentage terms).

We interact our independent variable CSR with all four components of board characteristics to determine whether they moderate the CSR-firm's financial performance link. In order to avoid multicollinearity between the interaction terms and their components, we follow the approach suggested by Aiken and West (1991). More precisely, we mean-center the direct terms by subtracting the mean of each variable from the values of each observation.

4.5 Controls

To overcome mode misspecifications, we control for firm-specific characteristics that explain firm-level financial performance by including additional control variables. Firm size (*Size*) controls for economies of scale (McWilliams and Siegel 2000) and the fact that larger firms normally have better access to resources (Udayasankar 2008). To normalize distribution, it is measured by the natural logarithm of the total number of employees. We use ROE to control for firm profitability, which is expected to have a positive effect on Tobin's q (Cheung et al. 2010). *ROE* is calculated as: *(Net Income before Preferred Dividends—Preferred Dividend Requirement)/Average of Last Year's and Current Year's Common Equity* × *100*. Furthermore, we control for firm risk by using *Leverage,* which is calculated by total debt divided by total assets (Jo and Harjoto 2011). Since a high level of leverage restricts the scope of actions of a firm, it can limit opportunities to explore new businesses and, thereby negatively impact firm's financial performance. To control for the level of productivity, we insert asset turnover, which measures the ability to produce sales given the firm's asset base. *Asset turnover* is calculated as the ratio of net sales and revenues to total assets. Since Tobin's q might be affected by the growth of a firm, we include the variable asset change. Asset change is calculated as the sum of total assets minus total assets of the previous year divided by total assets of the last year. Finally, empirical literature has shown that a firm's level of technological capabilities can positively affect a firm's financial performance (Montgomery and Wernerfelt 1988). Additionally, several researchers have emphasized that R&D intensity is a potentially confounding variable when addressing the relationship between CSR and a firm's financial performance (McWilliams and Siegel 2000; Hull and Rothenberg 2008; Padgett and Galan 2010). Therefore, we include *R&D-intensity* calculated by

the ratio of R&D expenditures to total sales (Barnett and Salomon 2012).[3] Concerning year-specific effects, we include a dummy variable for each year.

In Table 1, we present descriptive statistics and pairwise correlations for our sample. As can be observed from the table, CSR ranges from 0 to 0.97 with mean of 0.52, which is similar to the work of Ioannou and Serafeim (2012), which also uses ASSET4 data. Our dependent variable Tobin's q has mean of 1.07. Turning to moderating variables, the findings indicate that board size variable ranges from 1 to 45 with a mean of 10.63, the single biggest owners range from 0 to 100 with a mean of 21.46, board gender diversity ranges from 0 to 62.5 with a mean of 10.20, and finally board independence ranges from 0 to 100 with a mean of 74.95. Concerning control variables, we may observe that variables representing firm size have a mean of 9.16, ROE has mean of 13.85, leverage has mean of 0.58, asset turnover has mean of 0.79, asset change has mean of 0.14, and R&D has mean of 0.06.

Regarding the correlation matrix, all correlations are comfortably between 0.5 and − 0.5, an interval within which collinearity is unlikely to be a serious problem. Multicollinearity has been tested by a generalized variance inflation factor (VIF). VIFs measure the impact of multicollinearity on the variance of the regression coefficient of an explanatory variable. According to Neter et al. (1990), a maximum VIF value in excess of 10 is often considered to be a problematic threshold. The highest VIF statistic for our data is well below the recommended maximum value of 10 for individual variables, and no model surpasses the conventional threshold of 30 (Belsley et al. 1980). Therefore, it can be concluded that multicollinearity is not an issue for our further analysis.

5 Method

We use panel data for our empirical analysis. Unlike cross-sectional analysis, panel data analysis allows us to control for some types of omitted variable bias, by observing changes in the dependent variable over time, since panel estimation methods are largely able to capture unobserved heterogeneity effects. Since the Hausman statistic is large and significant ($chi^2 = 2983.73$, $Prob > chi^2 = 0.00$), we decided to use fixed-effects models. Using a fixed-effects regression model allows us to estimate the effects of the independent variables on the dependent variable while controlling for unobservable time-invariant aspects (e.g., industry or nation-specific characteristics and corporate culture). Tests for heteroskedasticity and autocorrelation indicate their presence. Therefore, we will only report fixed effects models with firm year level clustered standard errors in order to address heteroskedastic disturbance and the correlation among residuals over time. Furthermore, we address potential endogeneity issues, caused by reverse causality, using lagged explanatory variables (CSR, CG indicators and control variables). Based on this and taking into account the controls

[3] Due to limited data availability of R&D expenditure, we set missing values equal to zero. Similarly, to Walls et al. (2012), we conduct a robustness check by including a binary variable for imputed variables to ensure that these do not affect our results. Further results are available upon request.

Table 1 Descriptive statistics, correlation matrix and variance inflation factor

	Variable	Mean	S.D	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	VIF
1	Tobin's q	1.07	1.15	0.02	10.03	1.00												1.59
2	CSR	0.52	0.23	0.08	0.97	− 0.10*	1.00											1.31
3	Board size	10.63	3.60	1	45	− 0.21*	0.26*	1.00										1.25
4	Single biggest owner	21.46	19.47	0	100	0.01	− 0.04*	0.07*	1.00									1.03
5	Board Gender diversity	10.20	10.24	0	62.50	0.02*	0.15*	0.06*	− 0.07*	1.00								1.19
6	Non-executive board members	74.95	23.85	0	100	0.08*	0.06*	0.01*	0.02*	0.34*	1.00							1.17
7	Size	9.16	1.72	0.69	14.60	− 0.14*	0.46*	0.35*	0.02*	0.13*	0.04*	1.00						1.56
8	ROE	13.85	21.76	− 103.56	125.33	0.31*	0.07*	− 0.02*	0.05*	0.07*	0.07*	0.07*	1.00					1.24
9	Leverage	0.58	0.22	− 0.48	2.88	− 0.43*	0.15*	0.24*	− 0.04*	0.11*	0.10*	0.25*	0.005	1.00				1.39
10	Asset turnover	0.79	0.68	0	10.36	0.23*	0.08*	− 0.12*	− 0.05*	0.05*	− 0.02*	0.26*	0.20*	− 0.09*	1.00			1.24
11	Asset change	0.13	1.09	− 0.97	106.28	0.03*	− 0.04*	− 0.01*	0.02*	− 0.02*	− 0.00	− 0.04*	0.05*	− 0.01	− 0.04*	1.00		1.01
12	R&D	0.06	4.62	0	609.76	0.04*	− 0.001	− 0.001	− 0.001	− 0.0004	0.002	− 0.02*	− 0.04*	− 0.01	− 0.01	0.03*	1.00	1.02

*$p < 0.01$

Table 2 Results of fixed effects regression analyses

Variable	Model 1	Model 2	Model 3
CSR	0.01 (0.07)	− 0.02 (0.07)	− 0.03 (0.07)
CSR*Board size		0.04 (0.01)***	0.04 (0.01)***
CSR*Single biggest owner		− 0.01 (0.003)***	− 0.01 (0.003)***
CSR* Board gender diversity		0.01 (0.005)**	0.01 (0.005)**
CSR*Board independence		0.002 (0.002)	0.002 (0.002)
Board Size	− 0.01 (0.003)	− 0.01 (0.004)***	− 0.01 (0.004)***
Single biggest owner	0.004 (0.001)***	0.004 (0.001)***	0.004 (0.001)***
Board gender diversity	0.002 (0.001)	0.001 (0.001)	0.001 (0.002)
Non-executive board members	− 0.0004 (0.001)	− 0.0003 (0.001)	− 0.0003 (0.001)
Size	− 0.28 (0.04)***	− 0.27 (0.04)***	− 0.27 (0.04)***
ROE	0.002 (0.0004)***	0.002 (0.0004)***	0.002 (0.0004)***
Leverage	− 0.83 (0.13)***	− 0.82 (0.13)***	− 0.81 (0.13)***
Asset turnover	0.20 (0.07)***	0.20 (0.07)***	0.20 (0.07)***
Asset change	− 0.00004 (0.01)	− 0.0002 (0.01)	− 0.001 (0.01)
R&D intensity	–	–	0.01 (0.001)***
Constant	4.19 (0.42)***	4.15 (0.41)***	4.91 (0.40)***
Year fixed effects	YES	YES	YES
Adj. R^2 (within)	16.91%	17.26%	17.76%
Obs. per group (min/avg/max):	1/5/10	1/5/10	1/5/10
Number of observations	17,500	17,500	17,500

***p < 0.01; **p < 0.05; *p < 0.1

All significance tests are two-tailed. The values in parentheses are robust standard errors, clustered at the firm level

outlined earlier, fixed effects panel models are estimated according to the following equation:

$$\begin{aligned} Tobin'sq_{it} = {} & \alpha + CSR_{it-1} + CSR_{it-1} * Board\ size_{it-1} + CSR_{it-1} * Single\ biggest\ owner_{it-1} \\ & + CSR_{it-1} * Board\ gender\ diversity_{it-1} + CSR_{it-1} * Board\ independence_{it-1} \\ & + Board\ size_{it-1} + Single\ biggest\ owner_{it-1} + Board\ gender\ diversity_{it-1} \\ & + Board\ independence_{it-1} + \delta Z_{it-1} + \varepsilon_{it} \end{aligned}$$

where i denotes the firms and t the period. δ is a vector of the coefficients, and Z a vector of the control variables. Finally, ε is the error term. In the following section, the results of the analysis are presented and discussed.

The next section is dedicated to the obtained findings. More precisely, we present three models: Model 1 presents findings concerning the direct relationship between CSR and firm's financial performance; Model 2 presents findings concerning moderating role of corporate governance characteristics on the relationship between CSR and firm's financial performance; Model 3 serves as robustness test. In comparison to the control variables that we included in Model 2, in Model 3, we add an additional control variable regarding R&D intensity.

6 Results

Table 2 reports the estimation results of our regression models.

Model 1 presents the basic model with all direct effects. We can observe that CSR has no significant effect on Tobin's q. Regarding the board characteristics, only single biggest owners have a positive significant effect on Tobin's q (at the 1%-level) while the other three characteristics have no influence on a firm's financial performance. Moreover, Model 1 also reveals several significant relations when looking at control variables. The results indicate that profitability and asset turnover are positively associated with Tobin's q, while larger firms and firms with larger debt burdens decrease their Tobin's q.

Model 2 presents the results of moderating effects. Hypotheses 1a and 1b predict that board size positively/negatively moderates the relationship between CSR and a firm's financial performance. The findings indicate that H1a is confirmed by our findings ($p < 0.01$) while H1b is rejected. Therefore, we suggest that a positive fit exists between board size and CSR, which in turn generates improvement in a firm's financial performance.

Hypotheses 2 assert that ownership concentration negatively moderates the CSR-firm's financial performance link. The findings reveal support for Hypothesis H2 since the obtained coefficient is negative and significant ($p < 0.01$). Accordingly, the negative fit between ownership concentration and CSR drives Tobin's q decrease.

Support is found for Hypothesis 3, which proposes that board gender diversity positively moderates the relationship between CSR and a firm's financial performance ($p < 0.05$). We conclude that firms with a larger proportion of the women on their boards would implement better quality CSR practices and thus improve a firm's financial performance.

Finally, Hypothesis 4 suggests that board independence moderates positively the relation between CSR and a firm's financial performance. However, no support is found; therefore, we reject Hypothesis 4.

To explore the practical effects, we plotted the interactions from the model with significant effects using two standard deviations above and two-standard deviations below the mean on corporate governance variables (Aiken and West 1991; Dawson 2014).

As seen in Fig. 1, the nature of the interaction is consistent with H1a. The evidence suggests that when board size is larger, the effect of CSR on firm's financial performance is positive and significant ($b = 0.68$, $p < 0.01$) while when board size is smaller, the effect of CSR on firm's financial performance is non-significant ($b = 0.11$, n. s.). Therefore, a shift from two-standard deviations below the mean to two-standard deviations above the mean in board size, strength the positive effect of CSR on firm's financial performance by 57 percentage points. Figure 2 suggests that the impact of CSR on firm's financial performance becomes negative and significant when ownership is highly concentrated ($b = -0.63$, $p < 0.01$) whereas when ownership concentration is low, the effect of CSR is positive but slightly significant ($b = 0.13$, $p = 0.102$). Under highly concentrate ownership, the

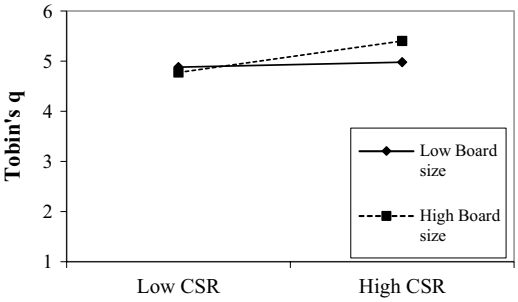

Fig. 1 Interaction plot of the moderation effect of board size on the relationship between CSR and firm's financial performance

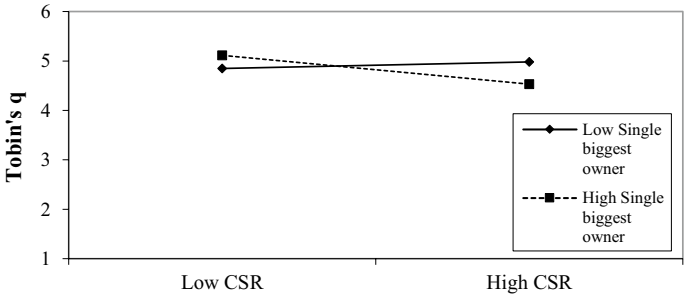

Fig. 2 Interaction plot of the moderation effect of ownership concentration on the relationship between CSR and firm's financial performance

effect of CSR results in 50 percentage points decrease in firm's financial performance. Finally, Fig. 3 shows that, when board gender diversity is high, the relationship between CSR and firm's financial performance is positive and marginally significant ($b = 0.28$, $p = 0.10$), whereas when board gender diversity is low the relationship is negative but not significant ($b = -0.13$, n.s.). Therefore, a shift from two-standard deviations below the mean to two-standard deviations above the mean in gender diversity strength the positive effect of CSR on firm's financial performance by 41 percentage points.

Furthermore, to assess the effect size for the moderating variables, we follow Dawson (2014), who suggests that is more suitable to examine f2, which presents the ratio of variance explained by the interaction term alone to the unexplained variance in the final model than incremental change in R2 due to the inevitability of shared variance between the X (independent variable), M (moderator variable), and interaction terms XM (created by multiplying X and M together). Our f2 equals to 0.001. Even it seems low; Aguinis et al. (2005) found that the values of f2 obtained in published research in leading management journals were very low around 0.002. In the same vein, Evans (1985) argued that moderator effects are so difficult to detect that even those with low values of the variance should be considered to be significant.

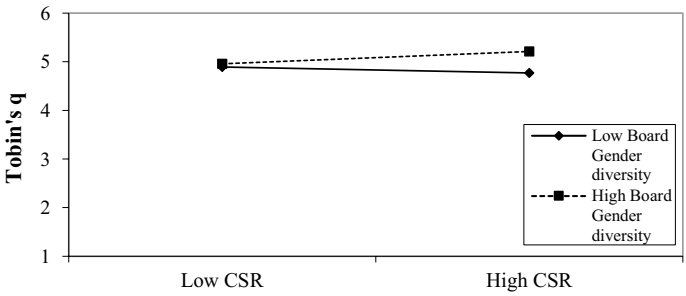

Fig. 3 Interaction plot of the moderation effect of gender board diversity on the relationship between CSR and firm's financial performance

An additional test of the moderation is proposed with the Wald chi-squared test or a likelihood ratio (LR) test comparing models with and without the interaction term. Therefore, we perform a LR test to check for the improvement in the goodness of fit; our results indicate that the interaction term also significantly improves the goodness of fit of our estimation from Model 1 to Model 2, which supports the introduction of the moderating effect. The results are also confirmed using Wald test.

For a robustness check, in Model 3, we insert R&D intensity as a control variable. The results remain mainly the same as in Model 2.

In summary, the empirical analysis provides evidence that CSR does not exert a direct effect on a firm's financial performance, measured by Tobin's q. Rather, its effect is contingent upon its fit with the corporate governance context. In other words, the evidence reveals that CSR's influence on a firm's financial performance depends on corporate governance types that are applied inside the firm.

6.1 Additional robustness analysis

To address concerns regarding potential endogeneity bias, we have performed, as a robustness test, two-stage least squares for panel-data model with instrumental variables. Our two instrumental variables are measured as the average CSR for each country-sector pair and country-year pair, as suggested by Cheng et al. (2014), also using ASSET4 data. More precisely, the authors argue that firm's CSR orientation is determined by the CSR orientation of other firms within the same industry-country as well as the CSR orientation of other firms in the same country over time.

The results obtained are going in the same direction as previous one, indicating that board size and gender diversity moderate the CSR-firm's financial performance link positively, that CSR interacting with ownership concentration negatively impacts a firm's financial performance, and that board independence does not have a role of moderator in the relationship between CSR and a firm's financial performance.[4] It should be noted that Hansen's J test is not significant, indicating that instruments are exogenous. Accordingly, we may argue, as suggested by Hartzell

[4] The findings are available upon request.

and Starks (2003), that using lagged independent and explanatory variables could attenuate the endogeneity problem.

7 Discussion and conclusion

Previous studies have failed to find consistent empirical evidence of the direct effects of CSR on a firm's financial performance (Cochran and Wood 1984; Brummer 1991; Waddock and Graves 1997; McWilliams and Siegel 1997; Orlitzky et al. 2003; Mahoney and Roberts 2007; Margolis et al. 2009; Crifo et al. 2016). To provide further understanding, some researchers study more complex effects using the mediating effect (Surroca et al. 2010; Delmas and Pekovic 2013) or the moderating effect (Servaes and Tamayo 2013). Moreover, the above-mentioned scholars use mainly human capital or customer as mediating/moderating factor. However, Servaes and Tamayo (2013) call for further analysis including other stakeholders. More precisely, the authors argue that future research should investigate the role of corporate governance when examining the link between CSR and a firm's financial performance. Accordingly, this paper uses a moderating approach to examine CSR and a firm's financial performance in order to reconcile opposite views regarding the CSR-firm's financial performance link. Therefore, our study contributes new insights regarding the moderating role of corporate governance on the relationship between CSR and a firm's financial performance. We show that the effectiveness of CSR in terms of the improvement of a firm's financial performance is dependent upon its 'fit' with corporate governance. In this sense, we argue that corporate governance is an essential internal mechanism that impacts the quality of CSR investment. In other words, corporate governance is one of the mechanisms that contribute to a more in-depth insight into the processes through which CSR may generate benefits for a firm's financial performance.

Our results regarding the direct effect of CSR on a firm's financial performance lend support to previous studies that demonstrate no relationship between them (e.g., McWilliams and Siegel 2000; Mahoney and Roberts 2007). Regarding board size, our findings show that larger boards positively moderate the relationship between CSR and a firm's financial performance. This provides support for the rationale that effectively designed boards [with better expertise, experience and monitoring quality, such as found on larger boards (Jizi et al. 2014)] can contribute to the better utilization of the CSR associated with a firm's improved financial performance (Ntim and Soobaroyen 2013). However, policymakers should be cautious with this conclusion since the obtained results may not be applicable to smaller firms or firms operating in different institutional contexts.

In addition, we find that ownership concentration negatively moderates the relationship between CSR and a firm's financial performance. This finding implies that since ownership concentration tends to increase information asymmetry, managers' but also majority shareholders' decisions to invest in CSR are driven by opportunistic behavior, undertaken only for their benefit (Andersen and Reeb 2003; Brammer and Millington 2008; Jo and Harjoto 2012; Martinez-Ferrero et al. 2018), which is negatively reflected on the firm's financial performance (Akben-Selcuk 2019; Ting

and Yin 2018; Peng and Yang 2014). Therefore, policymakers should be aware that a specific structure of ownership concentration is required to enhance CSR activities, which would be reflected in the improvement of a firm's financial performance (Crifo et al. 2015).

The hypothesis pertaining to the positive moderating effect between board gender diversity and a firm's financial performance is supported by our findings. The result supports the idea that female members generally supports CSR initiatives (Bord and O'Connor 1997; Zelezny et al. 2000; Torgler and Garcia-Valinas 2007). In such an environment, it is more likely that CSR provides a greater opportunity to facilitate improvement in a firm's financial performance (Ntim and Soobaroyen 2013). Accordingly, as emphasized by Harjoto et al. (2015), directors should be aware of the importance of board gender diversity when selecting individuals for board positions. In this vein, the representation of women on the board should be assured. Additionally, the obtained findings should also motivate policymakers to define board representation quotas (Byron and Post 2016).

With respect to the moderating effect of independent board members, our analysis does not provide support for the expected positive moderating effect of board independence between CSR and a firm's financial performance. The results could be explained by the fact that there should be a balance between independent and internal board members. In other words, in order to create a positive effect on a firm's financial performance, the ratio of independent directors should not be more than 60% (Byrd and Hickman 1992). As we can see from Table 1, the proportion of independent board members in our sample is 75%. Therefore, it could be argued that having more than 60% independent board members results in poor interactions between board members, which reduces the quality of CSR and does not improve a firm's financial performance. However, this conclusion should be taken with caution since, as suggested by Fernandez-Gago et al. (2016), directors should consider political and educational background when selecting independent board members because those characteristics are also essential for the good governance. In addition, Sarkar and Sarkar (2004) also underlined that fundamental question should also be considered '*who should be an independent director, and whether nominees of financial institutions on corporate boards should qualify as independent director*' (Sarkar and Sarkar 2004, pp. 5074). In this sense, the optimal number of independent board members depends on various factors that should be taken into consideration. Therefore, the lack of the significant effect does not necessarily mean that board independence is not important moderator of the relation between CSR and a firm's financial performance, but it could be that some additional factors are not defined to allow the firm to achieve firm financial improvement through board independence.

7.1 Policy implications

Given that, as seen in the introduction, managers and top executives around the world are giving increasing attention to the adoption and implementation of CSR activities, there are several managerial implications.

First, as indicated by Fernandez-Gago et al. (2016), directors should be aware that the design of corporate governance policies not only affects the dividends received by shareholders but also the interests of other stakeholders. Therefore, when designing board of directors, it should be taken into account various characteristics of board members.

Second, firms should extend their board size if they want to implement CSR activities successfully in terms of future financial performance. Notwithstanding, directors should define the size of the board that is proportional to the firm size and appropriate to the business context.

Third, as the findings indicate that concentrated ownership plays negative role in the relationship between CSR and financial performance, in order to attenuate the negative effect, it might be a reasonable solution to have a person that is responsible for CSR activities on the board.

Fourth, firms should restructure for a more balanced board in terms of gender diversity. It should be noted that adding new female board members would also increase the board size.

Finally, firms that have highly concentrated ownership may be facing more stringent monitoring from their shareholders. This might be based on an agency problem, meaning that shareholders fear CSR activities as they think that those activities may decrease their benefits. Therefore, in order to avoid such agency problems, executives should communicate more strongly the underlying goals of their CSR activities or attempt to connect these activities more into their core business.

7.2 Limitations and future research

This study suffers from some limitations that suggest areas for future research. First, it is based on a sample of firms in different countries. Research from multiple countries provides more general results, but corporate governance is specific to a country's framework of legal, institutional, and cultural factors (Weimer and Pape 1999). Additionally, in developed countries, firms' activities related to CSR and CG are constantly monitored by civil society groups; however, this is not the case in less developed countries (Rahim and Alam 2013). Therefore, future research could focus on particular countries, especially with weaker economies, in order to understand if our conclusion applies to a particular institutional context.

Second, this paper analyzes particular characteristics of corporate governance that are well established in the literature as the moderating mechanism between CSR and a firm's financial performance. However, future contingency studies should use other corporate governance characteristics (e.g., board compensation, board seniority, CEO compensation) as well as other organizational characteristics as moderators in order to gain further insights into the CSR-firm's financial performance link. For example, several researchers emphasize the importance of CEO compensation and incentives on CSR engagement (Gabel and Sinclair-Desagné 1993; Mahony and Thorne 2007; Deckop et al. 2006). We encourage future research to investigate whether and how such (long-term) compensation structures and incentives affect the CSR-CFP link. Furthermore, scholars also

argue that the relationship between owners and social investment is dependent on the type of major investor (Coffey and Fryxell 1991; Graves and Waddock 1992; Zahra et al. 1993; Johnson and Greening 1999). More precisely, while a certain type of investor is predominantly oriented to short-term profit ensuring return on investment for shareholders, others act as long-term investors, implying that they are more socially oriented since a higher degree of social investment may improve financial performance over the long run. Therefore, future analysis should distinguish between short- and long-term-oriented investors.

Third, we use market-based performance measures as opposed to financial performance measures. This is a conscious decision. However, we propose that future research should use other firm performance measures, such as ROA, ROS or ROE.

Fourth, summing together CSR dimensions that are not compatible with each other may generate trade-off issue, future research should analyze similar question using separate dimensions.

Finally, there might be a selection bias within the sample since the Thomson Reuters ASSET4 database only focuses on large publicly-traded firms. Therefore, our empirical findings and conclusions cannot be generalized to privately owned or smaller firms.

This study makes two major contributions to research on corporate social responsibility. First, it answers calls for research on the moderating effects of corporate governance on the CSR-firm's financial performance link (Serves and Tamayo 2013; Crifo et al. 2015). Whereas the previous literature mostly investigates the direct link between CSR and a firm's financial performance, our analysis identifies internal mechanisms such as corporate governance that moderates this relationship. Therefore, it contributes to further understanding the inconclusive relationship between CSR and a firm's financial performance, implying that corporate governance may shape this relationship.

Second, by investigating four different forms of corporate governance, this study takes a significant step towards understanding what form of corporate governance 'fits' best to CSR in order to improve a firm's financial performance. In this sense, we identify the best 'fit' between CSR and corporate governance that generate the firm's results. As a result, we underline the importance of 'fit' between CSR strategy and firm internal structure.

Appendix 1

See Table 3.

Table 3 Sample distribution across countries

Nation	Frequency	Percent	Nation	Frequency	Percent
AUSTRALIA	652	3.73	KUWAIT	1	0.01
AUSTRIA	84	0.48	LUXEMBOURG	19	0.11
BELGIUM	160	0.91	MACAU	8	0.05
BERMUDA	150	0.86	MALAYSIA	58	0.34
BRAZIL	172	0.98	MEXICO	44	0.25
CANADA	615	3.51	MOROCCO	7	0.04
CAYMAN ISLANDS	10	0.06			
CHILE	44	0.25	NETHERLANDS	190	1.09
CHINA	465	2.65	NEW ZEALAND	33	0.19
CYPRUS	7	0.04	NORWAY	120	0.69
CZECH REPUBLIC	16	0.09	OMAN	4	0.02
DENMARK	152	0.87	PANAMA	4	0.02
EGYPT	9	0.05	PAPUA NEW GUINEA	8	0.05
FINLAND	192	1.10	PERU	3	0.02
FRANCE	622	3.55	PHILIPPINES	45	0.26
GERMANY	450	2.57	POLAND	88	0.50
GIBRALTAR	6	0.03	PORTUGAL	73	0.42
GREECE	84	0.48	PUERTO RICO	5	0.03
GUERNSEY	4	0.02	RUSSIAN FEDERATION	59	0.34
HONG KONG	502	2.87	SINGAPORE	156	0.89
HUNGARY	17	0.10	SOUTH AFRICA	236	1.35
INDIA	208	1.19	SPAIN	280	1.60
INDONESIA	95	0.54	SWEDEN	316	1.81
IRELAND	190	1.09	SWITZERLAND	480	2.74
ISLE OF MAN	2	0.01	TAIWAN	163	0.93
ISRAEL	51	0.29	THAILAND	16	0.09
ITALY	251	1.43	TURKEY	92	0.53
JAPAN	1.768	10.10	UNITED ARAB EMIRATES	12	0.07
JERSEY	25	0.14	UNITED KINGDOM	1.844	10.54
KOREA (SOUTH)	205	1.17	UNITED STATES	5.928	33.87

Appendix 2

See Table 4.

Table 4 Sample distribution by year

Nation	Frequency	Percent
2004	382	2.18
2005	635	3.63
2006	961	5.49
2007	1022	5.84
2008	1425	8.14
2009	1911	10.92
2010	2367	13.53
2011	2815	16.09
2012	2994	17.11
2013	2988	17.07

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