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The CSR – Financial performance link: A test of the moderation effect of industry

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Master in Management

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Resumo

A ligação entre a RSO e o desempenho financeiro corporativo tem sido estudada assumindo a universalidade dos seus resultados. Contudo, tais resultados têm sido divergentes, o que motiva a adoção de uma abordagem contingencial. Considerando a natureza contrastante das organizações, nomeadamente nos sectores primário, secundário e terciário, esta investigação testa o efeito moderador do sector na relação entre a RSO e o desempenho financeiro corporativo.

Compreendendo 255 empresas cotadas em bolsa, da Europa Sudoeste (Portugal, Espanha, França), os resultados mostraram um efeito direto da RSO no ROA e ROE bem como um efeito de interação com o sector económico. Nomeadamente, quanto mais as organizações se aproximam do sector terciário, mais forte é a relação entre a RSO e o desempenho financeiro. Estes resultados replicaram-se na predição do indicador de solvência (baseado no ativo) mas não foram observados para o EBITDA. Globalmente, os resultados mostraram que, ao estudar a relação entre a RSO e o desempenho financeiro, é justificada a adoção de uma abordagem contingente com base no sector económico.

Palavras-chave: RSO, desempenho financeiro, rendibilidade, solvência, setor económico.

JEL Code: M14, G30

Abstract

The CSR-Corporate performance link has been studied under the assumption that findings are universally valid. However, such findings have been diverging, which raise motives to adopt a contingency approach. Taking into consideration the contrasting nature of organizations, namely in the primary, secondary, and tertiary industries this research tests the moderation effect of industry on the relationship between CSR and corporate financial performance.

Covering 255 listed companies in West-Southern Europe, i.e. Portugal, Spain and France, findings show a direct effect of CSR on ROA and ROE alongside with an interaction effect with industry. Namely, the closer the industry is to tertiary level, the stronger the relation between CSR and financial performance. These findings were mirrored when predicting solvency ratio (asset based) but were not observed for EBITDA. Overall, when studying CSR effects on financial performance, findings show an industry-based contingent approach is called for.

Key words: CSR, financial performance, profitability, solvency, industry

JEL Code: M14, G30

Executive summary

The concept of CSR is complex and its importance has been growing since the XX century, however there's no consensus yet on its definition and measurement. Because of its complexity, there is indication that economic sector, also named industry, is a key external contingency as the implications of the production itself are critical for several dimensions of CSR. Such gap in the literature deserves attention, and that is where this study focuses, analyzing how CSR behaves within specific industry sectors, in order to help filling that gap. To achieve this, we have considered economic sectors as a moderator variable as it is evident that not all sectors have the same orientation and challenges as regards social responsibility.

Accordingly, this study adopts a quantitative approach that includes as a moderating variable, the industry, which is a dimension that is recently gaining traction. The sample comprises 255 listed companies in EURONEXT Lisbon, Madrid and Paris that have both a rating and national ranking index from CSRHub as well as financial data available in BvD Amadeus database. This research also adopted a credited industry codification, called NAICS that has the advantage of being ordered from primary to tertiary level industries. To work on reliable and well-known economic and financial performance measures, the study collected data on ROA, ROE, EBITDA and solvency ratios (asset and liability based).

Our findings significantly contribute to understand how CSR behaves within primary to tertiary industry sectors. Specifically, the results suggest that CSR contributes to better financial performance to the exception of using EBITDA as a measure. In testing for these interaction effects with industry, our detailed findings showed that the types of industry were significant. These results are consistent with our expectation that the sector does matter in terms of CSR and fully supported the hypotheses to the exception of EBITDA. Specifically, for ROA and ROE, results imply that sector moderates the relationship between CSR and financial returns in such a way that the closer the sector is to tertiary level, the stronger the relation. When using the solvency ratios, CSR rating is negatively associated to SRAB but without significant interaction effect with the economic sector, which goes in line with the direction

established. Thus, the lower the value, the better the company situation in meeting its obligations. As regards SRLB, there is no significant association between variables.

Acknowledging the limitations of the study, namely covering only three countries within the EU, future research may benefit from exploring the lack of relationship found for EBITDA which may imply the incorporation of more moderators. It may also benefit from departing from the idea that sectors are internally homogeneous, to explore in detail interaction effects at the subsector level.

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Introduction

Over the last half century CSR has gained such importance that it became a matter of government in conceiving the role business plays in society. Such can be largely explained by the concomitant importance and growth of the consumer market. Consumers not only expect firms to behave responsibly but also reward or punish them via their purchase behavior (Golob, Podnar, Koklič & Zabkar, 2019). Although the sensibility of people towards CSR related concerns is growing, the complexity of CSR continues to be relatively overlooked in explanative models. Albeit its multidimensionality is well established (e.g. Pinnuck, Ranasinghe; Soderstrom & Zhou, 2017; Joo, Miller & Fink, 2019; Khojastehpour & Shams, 2019;) its theorizing with other variables (e.g. corporate outcomes) is rather unsophisticated.

Indeed, it is necessary to consider boundary conditions, since there are numerous factors that can influence the adoption of CSR initiatives, and how these may translate into performance (O'Higgins & Thevissen, 2017). Although the adoption of CSR can be motivated by a sheer sense of organizational citizenship, companies cannot be blind to its effects upon their performance, intended or unintended. Thus, companies should start identifying when CSR initiatives come up or not with corporate benefits. This reasoning acknowledges the complexity of the CSR–performance relationship and recognizes that the CSR–performance relationship is contingent on situational factors (Carroll & Shabana, 2010; O'Higgins & Thevissen, 2017). Also, literature on the CSR financial performance link has been showing divergent findings and is considered mostly inconclusive (Orlitzky, 2011; Schreck, Van Aaken & Donaldson, 2013), which is critical to understand - beyond the matter of ethical principle - if investing in social responsibility is indeed an asset or just a price to pay for a more sustainable society. Knowledge about such contingencies is not fully developed and there is indication that economic sector, also named industry, is a key external contingency as the implications of the production itself are critical for several dimensions of CSR. Such is a gap in literature that deserves further attention.

This research aims to answer the call for deepening the study of boundary conditions pertaining to the CSR-performance link (O'Higgins & Thevissen, 2017) and analyze how CSR adds economic and financial value across specific industry sectors, thus helping to fill the gap identified in the literature. To achieve this, we have considered

industry sectors as a moderator variable as it is evident that not all industries sectors have the same orientation and challenges as regards social responsibility. This can greatly vary according to whether it is in the primary, secondary or tertiary sector due to its own production characteristics.

Adding more sophistication to the literature is a theoretical step towards accounting for closer-to-reality dynamics involving CSR and corporate performance. The assumption of a universal effect upon corporate financial performance due to investing on CSR activities is well intended but it is a risk for corporations if indeed such returns do not apply due to their specific context. In such case, the companies with high investment on CSR might be earning awards or certifications, but if this consequences is made at the expense of its financial health, then the ultimate consequence would be its lowly CSR-concerned competition, having the upper hand in the market and, in the long run, being able to overrun and take them out of business. If CSR is not a competitive factor, then as a non-mandatory requirement it will distort competition and put pressure precisely on those that willingly comply. Likewise, the mimicking that often accompanies organizational change, also with the expert support of consultancy, can be counterproductive if industry is not taken into account. So, the contingent approach to CSR is not merely an academic exercise but rather an issue that crosses the economic interest of organizational and governance. The topic is of interest both due to contributes to theory as well as to management practice.

This study will start by reviewing extant literature pertaining to CSR identity and importance, its relationship to corporate performance to expound the contingency approach to CSR outcomes highlighting industry idiosyncrasies. Hypotheses are motivated based on the literature review to conceive a model that depicts a moderation effect due to industry type. Following, the study shows the methodological apparatus to comprehend a description of the data collection, data analysis strategy, and measures. Findings are then reported referring to each hypothesis which lead to discussing it at the light of the literature reviewed. The study ends by concluding and offering a reflection on the study limitations and future venues for research on the topic.

1. CSR: Identity and relevance

“the term CSR means something to everyone, but not the same thing to everyone”

(Birch & Moon, 2004, p. 3)

CSR is a relatively complex concept, which has no consensus yet on its definition and measurement. However, the interest in CSR is steadily growing in the corporate sector and has gained a status of institutional compliance. The motivations and actions of socially responsible consumers are usually seen as important for the success of corporate social responsibility (CSR).

Bowen (1953, p. 6) was the first to define the concept of CSR as the obligation to “pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society”. Some years later, Keith Davis (1960, p. 70) referred to business social responsibility as “decisions and actions taken for reasons at least partially beyond the firm’s direct economic or technical interest”. Because of its complexity, CSR is being used with a lot of terms like corporate social responsiveness (Wartick & Cochran, 1985), corporate citizenship (Maignan, 2001) and corporate sustainability, and ethics (Vaaland *et al.*, 2008).

It is not surprising that CSR has been approached from several perspectives as its complexity reflects also the complexity of business environment itself. CSR is inserted in an environment of great complexity, plays an important role in running a business all over the world, and, therefore, is subject to several dimensions. In 1991, Archie B. Carroll integrated the economic, legal, ethical and philanthropic responsibilities of companies in the publication, the Pyramid of Corporate Social Responsibility. As Carroll’s CSR pyramid theory states, there are four levels in CSR including economic, legal, ethical and philanthropic. The first level is economic, which is located at the bottom of the pyramid, which means that companies have the obligation to gain profit. Profit taking is the most fundamental priority point that companies usually focus on. Secondly, the legal responsibility requires business to achieve profit under obeying the legal provisions. The ethical function is the third level of CSR theory expecting companies to perform more ethical. It is not codified by law and only be expected by society. The philanthropic

element, the fourth one, is the discretionary in nature ranked at the top of pyramid. To apply this element, companies should take their responsibility of building the quality and better life for the society. Above all, corporate social responsibility requirements are beyond the companies' financial benefits, which are related to the community. Although the multidimensional nature of CSR is globally accepted, there is a variation concerning the legal dimension. While GRI (2020) comprises the environmental, social and economic outcomes of business activity, Runhaar and Lafferty (2008) subsume the social and environmental into a discretionary element they name "philanthropic".

In 2001, The European Commission defined CSR as a "concept whereby companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis" (Commission of the European Communities, 2001, p. 6).

El Akremi et al. (2018; p. 623) recently defined CSR as an organization's context-specific actions and policies that aim to enhance the welfare of stakeholders by accounting for the triple bottom line of economic, social and environmental performance. CSR is therefore associated with ethical behavior in the firm that is not only expressed in responsible social, economic, and environmental actions, but must permeate all of the firm's business decisions and behaviors. CSR is often known as an international entrepreneurial environment that focuses on multiple stakeholders from different countries, in which the credibility of CSR policies plays a pivotal role in the efficient implementation of CSR initiatives (Chuang & Huang, 2018; Werther & Chandler, 2006). And so, CSR implementation requires understanding existing relationships between the company and its stakeholders, as well as understanding issues and defining actions to cover identified gaps.

There are numerous authors determining the dimensions of CSR authenticity. Taking the example of Joo, Miller and Fink (2019) scale, one can identify seven dimensions: community link, reliability, commitment, congruence, benevolence, transparency, and broad impact. In addition, their findings support the efficacy of CSR authenticity for predicting positive consumer attitudes and intentions toward the firm. International credited sources such as CSRHub reflect the multidimensionality and complexity of this construct in a clearer way. In defining the categories and subcategories of CSR indicators, CSRHub (2020) proposed a classification into four large domains of

focus (community, employees, environment, and governance) that comprises a comprehensive set of subcategories. According to this source, “community domain” pertains to the company’s citizenship, charitable giving, and volunteerism. This category includes three subcategories, the Community Development & Philanthropy, the Product, and the Human Rights & Supply Chain. Likewise, the same source states that “employees domain” comprehends disclosure of policies, programs, and performance in diversity, labor relations and labor rights, compensation, benefits, and employee training, health and safety. This category includes Compensation & Benefits, Diversity & Labor Rights, and Training, Safety & Health. Environment domain covers a company’s interactions with the environment at large, including use of natural resources, and a company’s impact on the Earth’s ecosystems. It evaluates corporate environmental performance in many levels. This category includes Energy & Climate Change, Environmental Policy & Reporting, and Resource Management. Finally, the same source states that “governance domain” pertains to the disclosure of policies and procedures, board independence and diversity, executive compensation, attention to stakeholder concerns, and evaluation of a company’s culture of ethical leadership and compliance. It focuses on how management is committed to sustainability and corporate responsibility at all levels. This category includes subsectors, which are Board, Leadership Ethics, and Transparency & Reporting.

Independently of the number of dimensions proposed for CSR, nowadays, CSR is broadly understood as the role a company plays in society, taking into account all the moral obligations that maximize the positive impact and minimize the negative impact it has on its surroundings (Moliner, Monferrer Tirado & Estrada-Guillén, 2019).

Alongside with the positive consequences for society one should consider those that return to the responsible corporations themselves. So, CSR initiatives have both an altruistic and a commercial intent (Zasuwa, 2016). CSR helps protect the economic, social, and environmental benefits for all stakeholders by contributing to sustainable development. Van Marrewijk (2003) considered that CSR can solve many conflicting problems globally (e.g., poverty gap, social discrimination, and environmental pollution). In a modern market, CSR not only encompasses ethical or ideological responsibility, but also is a core strategy for corporates (Smith, 2001). Stakeholders and corporates both believe that CSR investment can make the corporations operate under a more sustainable manner (Jones & Jonas, 2011), which is one of the positive benefits for responsible corporations. The majority of companies are dedicated to executing CSR into their

business strategy, because it is regarded as a standard of judgment for deciding to protect a cleaner environment and a better society (Li & Wang, 2019, p.74). This might explain why CSR is an important indicator to evaluate the companies' competitive strength, survival and economic performance (Runhaar & Lafferty, 2008) and why there is a growing number of corporations integrating a series of CSR activities into their core operating strategy (Jo & Harjoto, 2011).

This reflects not only a moral judgment about their own legitimacy to operate in society but also a strategic answer to a growing sensible market to CSR related issues. By promoting CSR through, for example, communications and branding actions, companies might intensify consumers' concern for social responsibility, the welfare of others by telling them about the consequences of such behavior and increasing their knowledge of personal responsibility for such consequences (Golob, Podnar, Koklič & Zabkar, 2019). In fact, this proposition has already strong evidence of its effectiveness as the European Communication Monitor report (Zerfass et al., 2011) ranked CSR communication as one of the top 3 tasks in communication management with 93% of the 250 world's largest organizations reporting on their CSR by 2016 (KPMG, 2017). And so, we can see that CSR has become an integral part of business practice.

In this setting the accomplishment of CSR can lead to the satisfaction of the community needs, and, in consequence, to benefits and good corporate reputation. A recent example can relate to Covid-19 pandemic, which closely relates to the third Sustainable Development Goal 2030. Many companies have proactively adhered to voluntary measures also recommended by authorities such as social distancing and self-isolation protocol. Likewise, research suggests that the relationships between a firm and its workers, suppliers, customers, and local community can shape corporate performance and resilience to adverse shocks, including the COVID-19 crisis (Ding, Levine, Lin & Xie, 2020).

Thus, firms can strengthen their connections with the employees through CSR activities, such as creating healthy, safe workplaces, engaging in ethical practices, providing reliable services to customers, and investing in the local environment more generally. Such CSR activities indicates a firm's commitment in protecting and satisfying workers, which in turn enhances investors' willingness to support a firm's operations, especially in difficult times, such as Covid-19 pandemic that we're living right now.

According to Ding, Levine, Lin and Xie (2020) firms that invested more in CSR activities prior to the pandemic enjoyed much better stock price performance in response to the pandemic. These results are consistent with the view that investments in CSR build trust with stakeholders, so that workers, suppliers, customers, and other constituents are more willing to make adjustments to support the business in response to adverse shocks. These authors consider two otherwise similar firms in the same industry and economy. One has a pre-2020 CSR score at the 25th percentile and the other is at the 75th percentile. Their estimates suggest that the average stock returns of the high-CSR score firm would decline by 2 percentage points less than the low-CSR score firm in response to the average growth of COVID19 cases two months after the outbreak of the pandemic.

Overall, CSR has been evolving as a multidimensional concept that holds environmental, social and economic consequences of business activity, and its return to responsible corporations can be measured in terms of both financial (performance) and nonfinancial outcomes (e.g. reputation). The CSR – performance link is therefore, critical to understand if investment in social responsibility is indeed an asset or a liability for companies themselves.

2. The CSR – Performance link

The interest in social responsibility associated with the economic activity of companies has emerged in the last 60 years. Even though some concerns regarding these issues began to spread in the 1930s and 1940s, the analysis of company approaches to social responsibility tends to consider more developed and recent versions of the concept, starting from the 1950s to 1960s (Carroll, 1999). As mentioned, it has gained momentum in the last decades, as consumers are becoming more aware and concerned about the environmental and social impacts of economic activities (Lerro, Vecchio, Caracciolo, Pascucci, & Cembalo, 2018).

Burhan and Rahmanti (2012) criticized previous researches used CSR reporting for focusing only on environmental and social disclosure while the concept of sustainability reporting involves not only environmental and social performance but also the economic performance. Over the past years, both theoretical and empirical literature were concentrated on studying the effect of CSR disclosure on corporate financial performance, which is sometimes referred to as the “virtuous circle”, to determine if “doing good” socially leads to “doing well” financially, and whether firms exhibiting superior financial performance devote more resources to social activities (Nelling & Webb, 2009). Furthermore, ethical consumption is a rapidly growing market niche within which an increasing number of brands promote themselves through values connected to social responsibility, sustainability and ‘doing good’ (Littler, 2008; Mukherjee & Banet-Weiser, 2012).

In order to support this CSR-performance link, previous studies show that CSR can influence consumer product responses (Brown & Dacin, 1997), Consumer-Company identification (Sen & Bhattacharya, 2001), company evaluation (Marin *et al.*, 2009), and customer loyalty (Fatma *et al.*, 2016). In line with this Jones (1999) proposed that corporations with better CSR can positively engage stakeholders (e.g., supplier and customers) and enhance their willingness to participate in the production process with better efficiency. Additionally, firms with better innovation capabilities can pursue proactive social and environmental strategies (Buysse & Verbeke, 2003). CSR-related stakeholder engagement can facilitate the development of productive innovations, and thus it is an important source of competitive advantage because it is difficult for rivals to copy and imitate (Barney, 1991; Surroca *et al.*, 2010). Additionally, Hasan *et al.* (2018) found that CSR fosters better financial performance via increased intangible productivity.

Despite the official attitudes towards responsible corporations and the rising concern with sustainability as evidenced with the 2030 SDGs, one cannot ignore conflicting results that co-exist in relevant CSR literature. Although many empirical studies did find the alleged positive relation (e.g. Waddock & Graves 1997; Margolis & Walsh, 2003; Orlitzky et al. 2003; Deng et al., 2013; Ferrell et al., 2016; Lins et al., 2017), other studies supported a negative relationship between Corporate Social Responsibility (CSR) and Financial Performance (FP). The research of both Mahoney and Roberts (2007), and Nelling and Webb (2009) reported no relationship between CSR and FP. The first study conducted an empirical research with the intent of investigating potential relationships between CSP, traditional accounting measures of financial performance (FP), and measures of institutional ownership for a large sample of publicly held Canadian firms and found no significant relationship. The second study found that the relation between CSR and FP is much weaker than previously thought. In their opinion, CSR is driven more by unobservable firm characteristics than by Financial Performance and so CSR activities do not affect FP. Also, they examine this link between CSR and FP using Granger causality models, and the results demonstrate the weakened evidence of a relationship between them. Additionally, other studies suggested a mixed relationship (e.g. Margolis et al., 2007; Dixon-Fowler et al., 2013; Suto & Takehara, 2016; Zhao & Murrell, 2016).

Throwing light to these conflicting findings, Brammer and Millington (2008) emphasized that most of the research is searching for a relation between a broad definition of Corporate Social Performance and Corporate Financial Performance. This situation can probably explain the lack of consensus in the literature about the CSP-CFP relationship. Indeed, when studies adopt a clear set of dependent financial variables commonly used such as ROE, ROA, or EBITDA findings seem to converge in stressing a positive relationship with CSR. Burhan and Rahmanti (2012) analyze the relationship between the disclosure of sustainability performance and the impact towards company's performance using sustainability reporting framework developed by Global Reporting Initiative. They found that only social performance disclosure has an association with company's performance, which confirms the statement that many existing research results are inconclusive, reporting positive or sometimes negative results. This converges with Dumitrescu and Simionescu (2015) who developed a stakeholder-based measurement scale for CSR activities comprehending the influence on employees in

relation to the company performance. The findings of this study reinforce previous investigations, showing a positive and significant relationship between CSR activities and employees reflected in the company performance, by using ROA and ROE as a CSP measure. By regressing several financial indicators on an overall social performance rating, Vaia, Bisogno, and Tommasetti (2017) found EBITDA to be one of the significant predictors. We therefore hypothesize that:

H1: CSR is positively associated to higher financial performance.

In approaching financial performance comprehensively in relation to CSR, Jackson and Parsa (2009) highlight a set of financial indicators that do not focus on profitability. Namely, they highlight solvency, i.e. the ability a given firm has to meet its debt obligations and that is of critical interest for prospective business lenders. Indeed, solvency ratio was found to be one of the few financial indicators that significantly predict corporate social performance (Vaia, Bisogno & Tommasetti, 2017). It has been used as a control variable but with findings that suggest it is related to social performance (e.g. Wagner, 2005). We therefore hypothesize:

H2: CSR is positively associated to higher solvency.

Another explanation for the diverging findings may rely more on boundary conditions, usually named as contingencies, rather than the choice of operational measures for each construct.

Findings reported by Wagner (2005) regarding the relationship between environmental and economic performance and whether a firm's choice of a specific strategy towards sustainability and the environment has a significant effect on it showed some complexity should be added to the model to account for real relationships. This study shows controversial results, since in environmentally intensive industries such as paper manufacturing, it may be difficult to bring a positive relationship. Besides, corporate strategies regarding sustainability and the environment have an important moderating U-shaped effect on the relationship between environmental and economic performance, which carries considerable weight for the practical significance of the results of this research. Likewise, Lech (2013) and Nakamura (2011) found a null relationship, because it only exists in a short-lived time frame which cannot be considered valuable according to Nakamura.

In line with this view, Jo and Harjoto (2011) contend the CSR choice is positively associated with the internal and external corporate governance and monitoring mechanisms. Thus, to the extent that institutional investors and security analysts provide effective external monitoring regarding the information transparency of CSR engagement, the CSR activities will have positive effects on firm value. Thus, a contingency approach to CSR outcomes is called for.

3. Contingency approach to CSR outcomes

“The contingency concept is, broadly speaking, an organizational theory, which states that there is no one best way of organizing to best effect. It depends on the kind of task or environment with which one is dealing”.

O'Higgins and Thevissen (2017, p.330)

To make CSR supportive of the business outcomes, people and firms must wish to engage in CSR because they want to do what they believe to be right. This may be gauged against the contingencies in the corporate environment. The contingency principle applied to this topic states that CSR creates more value under certain circumstances.

In line with this idea Barnett (2007), Berman et al. (1999), and Goll and Rasheed (2004) proposed that the financial merit of CSR investment is uncertain because CSR activities accumulate a variety of intangibles in different contexts, which necessitates a contingency perspective. However, much research, already mentioned in the previous section, do not consider contingencies, such as strategic imperatives relating to salient stakeholders in particular industries, or external economic conditions.

Hospitality is a great example of an industry that is especially sensible to CSR issues, and can assume many forms like green practices, community involvement and employee relations (Holcomb *et al.*, 2007). This concept has been receiving considerable attention, especially in tourism and hospitality literature, thus many authors have studied its benefits (Bohdanowicz & Zientara, 2008; McGehee et al., 2009). Another business case that provides a great example of adherence to CSR principles is the sharing economy. According to Belk (2004), sharing economy fundamental business principle lies in acquiring and distributing an underutilized resource for a fee or other form of monetary compensation. They develop platforms to connect service providers and end users, based upon demand. Due to the improvement of information technology, the sharing economy gained a large share of the market where Uber stands out as a proven successful fast-growing business model. By sharing resources with others, the sharing economy

businesses have exerted similar principles to those of firms' social responsibility and sustainability through high reliance on technology with a focus on sharing, reusing, and recycling (Cooper, 2016). However, sharing economy has also raised concerns as regards precisely social responsibility, namely, its social consequences (Fleming, 2017) which means its departing CSR principle is not without boundary conditions.

3.1. Industry as a context variable

As a first step necessary to move to the main objective, this paper is aimed to study and analyze how CSR behave with specific industry sectors, thus helping to fill the gap identified in the literature.

Literature suggests some authors adopt a universal prescription of CSR (i.e. that all organizations equally benefit from performing a specific set of CSR practices). This seems naive because it fails to consider the specific context where corporations operate. The question here is: does external industry context have influence on the development of corporate sustainable responsibility?

Firms in the service sector that proactively engage in CSR reinforce positive attitudes, customer trust, and behavioral loyalty and encourage exchange of knowledge and information internally and externally (Sinthupundaja, Chiadamrong & Kohda, 2019). In the food sector, an increasing number of food companies have introduced voluntary certifications to communicate the efforts of their businesses towards the social and environmental aspects of production (Del Giudice et al., 2018).

The services that are provided by the utilities sector (energy, waste and water management) are often associated with environmental problems, such as emissions, pollution, consumption of resources, and land utilization; companies are expected to take on responsibility for the consequences that these issues can have on the well-being and the comfort of the local communities where they operate (Arena, Azzone & Mapelli, 2019). In recent years, the utilities sector has been under scrutiny for its social and environmental impacts, and so, researchers suggested that social and environmentally responsible practices in the service industry have a more positive impact on financial performance than in manufacturing (Casado-Díaz, Nicolau-Gonzálbez, Ruiz-Moreno, & Sellers-Rubio, 2014). This is because consumers' perception of social and environmentally responsible behavior has been shown to influence their valuation of a

service and the perceived quality prior to receiving the service (Poolthong & Mandhachitara, 2009).

Giving the example of the hospitality industry, several CSR practices have become commonplace, such as green building, waste and pollution reduction, and employee development, as well as building community relations by providing help especially in times of need. The wide range of CSR initiatives undertaken by hospitality companies has generated considerable research interest among scholars, and specifically whether there is a business case, that is, any bottom-line or profit potential for firms pursuing CSR activities (Ryan, 2015). In addition, inequities of low labor wages juxtaposed with luxury amenities of high-end hotels often lead to public criticism that may affect brand image (Kotler et al., 2006).

Also, there are certain controversial subsectors, which are typically characterized by social taboos, moral debates, and political pressures, include sinful industries, such as tobacco, gambling, alcohol, and adult entertainment as well as industries involved with emerging environmental, social, or ethical issues, i.e., weapons, nuclear. Giving the example of casinos that provide gambling opportunities, and fast food restaurants that offer food that causes obesity, highlighting the need for involvement in CSR activities to mitigate reputational costs. In sum, for a service industry that relies on consumer discretionary spending and low switching costs due to high substitutability of products and services (Singal, 2015), CSR activities that may enhance brand recognition and loyalty is particularly important.

3.2. Types of industry

According to Jones (1999), an industry's orientation to social responsibility can be expected to vary according to whether it is in the primary, secondary or tertiary sector. Primary sector industries are involved in raw materials extraction, agriculture, and related activities. The most prominent stakeholder (besides owners and creditors) is commonly the environmentally concerned entities; this leads to industries in this sector often having high profiles resulting from environmental accident. Secondary sector industries transform raw materials into finished or intermediate products. Industries in this sector (e.g., automobiles, electronics) are among the largest and most capital intensive in the economy. According to this scholar, the bulk of empirically oriented social responsibility

research focuses on industries in this sector. The tertiary sector incorporates service industries ranging from banking to hospitality to private security. This sector is where most job creation occurs and is the home of mass franchising, and it is also the most labor intensive.

As regards to industry comparison on CSR, Arminen et al. (2018) found evidence of a weak effect of industry on corporate social performance, meaning, there is no specific pattern of differential CSR per industry. This goes against Jones (1999) statement that there is evidence that consumer goods industries are more sensitized to issues such as product safety and environmental externalities, as these can directly affect consumer perceptions and purchase decisions. New industries and/or those involved in the production of consumer goods can be expected to have a more progressive attitude with respect to social responsibility and social performance. However, Arminen et al. (2018) study classified industries based on FTSE4Good indexes which grouped industries according to their ESG (environmental, social, governance) impact which does not match Jones (1999) aggregation as primary, secondary and tertiary industries.

In line with Jones (1999), Kakabadse, Rozuel and Lee-Davies (2005) conceive CSR as intertwined with the concept of stakeholder, meaning it can be taken as a firm's obligation toward multiple constituencies, which are, employees, customers, suppliers, and communities. Jones (1999) contended that CSR is a process rather than an outcome. He set the stage to structure the analysis of CSR (by the incidence of stakeholder management) by types of industry. Although this paper was amply cited, there is a knowledge gap concerning the hypotheses advanced in it, namely those that pertain industry features (e.g. H3 “The incidence of stakeholder management will be more evident in secondary sector industries”; H4 “The incidence of stakeholder management will be more evident in consumer goods industries”, H5 “The incidence of stakeholder management will be more evident in high profile industries”, H6 “The incidence of stakeholder management will be more evident in industries with higher degrees of competitive rivalry”, H7 “The incidence of stakeholder management will be more evident in younger industries”) (Jones, 1999, p. 168). This was just a theoretical proposition and although it has been partially tested (e.g. Hamann et al., 2009 for H3) it is yet to be fully tested. As an example, one cannot locate an available publication about hypothesis H7 published in a peer-reviewed outlet.

To fill this knowledge gap, we have considered industry sectors as a moderator variable. So, hypotheses should set the stage to structure the analysis of CSR by types of industry. Evidently, not all industries sectors have the same orientation as regards social responsibility as it can varies according to whether it is in the primary, secondary or tertiary sector. This difference can be due to the intrinsic pollution, regulation, supervision of environmental risks, and community, employees, environment, & governance practices. Accordingly, we hypothesize that:

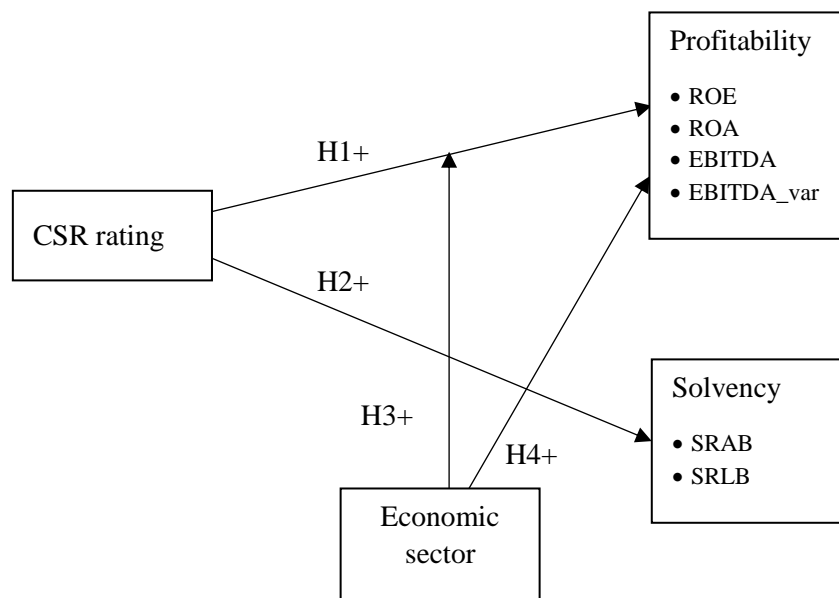
H3: The sector moderates the relationship between CSR and financial performance in such a way that the closer the sector is to tertiary level the stronger the relation.

H4: The sector moderates the relationship between CSR and solvency in such a way that the closer the sector is to tertiary level the stronger the relation.

3.3. Conceptual Model

The conceptual model that integrates all hypotheses offers an integrative view of the constructs and their expected relations.

Figure 1 - Conceptual model



3.4. Hypotheses

As depicted in the conceptual model, financial performance is organized into profitability and solvency ratios, which imply the respective hypotheses must unfold into sub-hypotheses to accommodate all dependent variables. The full set of hypotheses and sub-hypotheses is listed below for clarity sake.

H1: CSR is positively associated to higher financial performance.

H1a: ROE

H1b: ROA

H1c: EBITDA

H2: CSR is positively associated to solvency

H2a: CSR is positively associated to Solvency Ratio (asset based)

H2b: CSR is positively associated to Solvency Ratio (liability based)

H3: The sector moderates the relationship between CSR and financial performance in such a way that the closer the sector is to tertiary level the stronger the relation.

H3a: The sector moderates the relationship between CSR and ROE in such a way that the closer the sector is to tertiary level the stronger the relation.

H3b: The sector moderates the relationship between CSR and ROA in such a way that the closer the sector is to tertiary level the stronger the relation.

H3c: The sector moderates the relationship between CSR and EBITDA in such a way that the closer the sector is to tertiary level the stronger the relation.

H4: The sector moderates the relationship between CSR and solvency in such a way that the closer the sector is to tertiary level the stronger the relation.

H4a: The sector moderates the relationship between CSR and solvency (asset based) in such a way that the closer the sector is to tertiary level the stronger the relation.

H4b: The sector moderates the relationship between CSR and solvency (liability based) in such a way that the closer the sector is to tertiary level the stronger the relation.

4. Method

4.1. Research design

A quantitative approach is suitable to address the research problem and questions. The design is therefore based upon quantitative variables as secondary data. Because databases contain information for distinct years, causal nexus may be supported by using as independent variables, data from year n-1 (e.g. 2018) and as dependent variables, data from year n (e.g. 2019). Industry as a moderator is not year-dependent as it should be always stable across years.

4.2. Sample

The sample comprises publicly traded companies in EURONEXT Lisbon, Madrid and Paris that have both a rating and national ranking index from CSRHub as well as financial data available in BvD Amadeus database. The target year of reporting is 2019 for financial ratios as CSRHub data is from 2018.

CSR Hub has data pertaining to 17 companies listed in EURONEXT Lisbon, 70 companies listed in EURONEXT Madrid, and 168 listed in EURONEXT Paris. Crossing data available from CSRHub with the financial information available from BvD Amadeus Database, the final sample comprises 9 companies listed in EURONEXT Lisbon, 51 companies listed in EURONEXT Madrid, and 124 listed in EURONEXT Paris. The overall working sample comprises 184 listed companies. From these companies 95.6% (N=176) had financial data available for 2019 while the remaining 8 companies only had 2018 as the last available year. The sample comprises companies from a large array of economic activities, which can be depicted following NAICS2017 categorization as follows (Table 1):

Table 1 – Sample per NAICS per country

		country			
		1-Portugal	2-Spain	3-France	Total
NAICS	11	0	0	1	1
	21	3	6	6	15
	22	0	6	7	13
	23	0	6	3	9
	31	0	2	8	10
	32	4	5	9	18
	33	0	6	24	30
	42	0	1	7	8
	44	2	3	8	13
	45	0	0	2	2
	48	0	3	9	12
	51	2	5	8	15
	52	6	14	16	36
	53	0	3	9	12
	54	0	5	27	32
	55	0	0	4	4
	56	0	1	7	8
	62	0	1	4	5
	71	0	0	2	2
	72	0	3	2	5
	81	0	0	3	3
	92	0	0	1	1
	99	0	0	1	1
Total		17	70	168	255

4.3. Data analysis strategy

Data analysis will start by computing and showing descriptive statistics and some bivariate statistics. Following Aguilera-Caracuel and Guerrero-Villegas (2018), the conceptual model previews a moderation effect where industry interacts with CSR to explain financial performance. This will be tested with Macro Process for the simultaneous test of both direct and interaction effects via bootstrapping with 5000 repetitions and an interval confidence of 95% as recommended by Hayes (2017).

4.4. Measures

Social responsibility was measured with two indicators available in CSRHub, namely the global rating and the national ranking.

Financial data comprises ROE (using P/L), ROA (using P/L), EBITDA1 (Current year), EBITDA0 (current year-1), Solvency ratio (Asset based), Solvency ratio (Liability based).

ROE is computed by dividing the company's net income by the average shareholders' funds (total assets minus liabilities) multiplied by 100. ROE is considered a measure of how effectively management is using a company's assets to create profits (Claire Boyte-White, 2019).

ROA is computed by dividing the company's net income by the average total assets. It is also a profitability ratio that provides how much profit a company is able to generate from its assets. In other words, return on assets (ROA) measures how efficient a company's management is in generating earnings from their economic resources or assets on their balance sheet. ROA is shown as a percentage, and the higher the return, the more productive and efficient management is in utilizing economic resources (Financial Modeling Courses & Training - Financial Analyst Certification, 2020).

Solvency ratio is computed as an average of Solvency ratio (Asset based) and Solvency ratio (Liability based). The solvency ratio (Liability based) is calculated by dividing shareholders' funds by total liabilities (current liabilities + current) multiplied by 100 while solvency ratio (asset based) is calculated by shareholders funds divided by total assets multiplied by 100. The solvency ratio is a key metric used to measure an enterprise's ability to meet its debt obligations and is used often by prospective business lenders. The lower a company's solvency ratio (liability based), the greater the probability that it will default on its debt obligations (Investopedia, 2020). The reverse applies to solvency ratio (asset based).

EBITDA is a measure of profitability and is computed as net income plus interest, taxes, depreciation and amortization. For international comparison purposes, it is a suitable measure of corporate performance since it is able to show earnings before the influence of accounting and financial deductions that vary across countries. EBITDA is also used to compute a yearly variation as $(EBITDA1-EBITDA0)/EBITDA1$.

Economic sector was coded using NAICS (1 and 2 digits level) and will be used as a moderator. NAICS was coded into Manufacture (1) and Services (2). NAICS is an industry classification system that groups establishments into industries based on the similarity of their production processes (Harris, 2014).

It is a comprehensive system covering all economic activities and it is used by U.S. statistical agencies to facilitate the collection, tabulation, presentation, and analysis of data relating to establishments; and to provide uniformity and comparability in the presentation of statistical data. The structure of NAICS is hierarchical. The first two digits of the structure designate the NAICS sectors that represent general categories of economic activities.

NAICS classifies all economic activities into 20 sectors. The NAICS sectors, their two-digit codes, that is arranged starting from primary industries (e.g. Agriculture, code 1, Mining, Code 2), to secondary industries (e.g. manufacture, code 3), to retail (code 4), to information / finance and banking / Real estate / Professional services (code 5), to education and health care services (code 6), to entertainment / accommodation / hospitality (code 7) ending with other services (8) and public administration (code 9).

Although NACE (*Nomenclature statistique des Activités économiques dans la Communauté Européenne*) is specifically generated for European used, we have adopted NAICS because it is readily available in Amadeus database and is suitable for characterization purposes.

For clarity sake, the conceptual model's variables summary can be found in Table 2.

For control purposes in ruling out alternative explanations, the stock exchange was used as a control variable dummy coded to EURONEXT Lisbon (1), EURONEXT MADRID (2), and EURONEXT Paris (3). Likewise, the year used for financial data was dummy coded where 1 stands for 2018 and 2 stands for 2019.

Table 2 – Variables summary

BvD Code	Ratios	Definition
	<i>Profitability ratios</i>	
RSHF	ROE using P/L before tax (%)	(Profit before tax / Shareholders funds) * 100
RTAS	ROA using P/L before tax (%)	(Profit before tax / Total assets) * 100
ROE	ROE using Net income (%)	(Net income / Shareholder funds) * 100
ROA	ROA using Net income (%)	(Net income / Total Assets) * 100
ETMA	EBITDA margin (%)	(EBITDA / Operating revenue) * 100
EBMA	EBIT margin (%)	(EBIT / Operating revenue) * 100
	<i>Structure ratios</i>	
SOLR	Solvency ratio (Asset based) (%)	(Shareholders' funds / Total assets) * 100
SOLL	Solvency ratio (Liability based) (%)	(Shareholders' funds / (Non-current liabilities + Current liabilities)) * 100

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5. Results

Descriptive and bivariate statistics

The companies comprised in the sample vary substantially as regards many features and indicators. Namely, they range in the overall CSRHub rating from values as low as 32 to as high as 71 averaging 57.7 ($SD=6.26$). At national level, their respective ranking also greatly varies ranging from the possible minimum to the possible maximum positions. Profitability indicators (ROE and ROA) and EBITDA range from negative to positive values with ROE averaging 12.56 ($SD=47.06$), ROA averaging 3.81 ($SD=9.40$) and EBITDA (expressed in million euros) averaging 1831 ($SD=3627$).

Although negative values in ROE have been advised to be interpreted with great caution due to inherent ambiguity (the many causes that can generate negative ROE values and that do not have to be interpreted as negative situation, e.g. cases with a large investment with secure future returns but based on equivalent large debt) we opted to include these values because it is used comparatively to CSR indicators and not for investment purposes. Likewise, ROE and ROA tend to be limited by economic sector features (namely due to the nature itself of the economic activities and e.g. how much investment they have to do in assets to operate) and are not advisable for industry comparison. As our data analysis does not involve comparing indicators across industries directly but rather the comparison of the matched financial and CSR indicators within each industry, we opted to include these financial indicators in the analyses. Liquidity was measured, as mentioned, by means of two solvency ratios (asset and liability based), which average both positively ($SRAB=38.32$, $SD=19.33$; $SRLB=49.31$, $SD=24.45$).

Correlations found are very informative on the possible existence of bias due to country or year with significant correlations indicating a possible effect. Indeed, two of such correlations were found between year and solvency ratios and additionally another significant correlation was found between country and solvency ratio (liability based). This means, such variables must always be controlled for in future regression analyses.

Overall bivariate analyses showed many cases of correlations between focal variables in the conceptual model. Financial indicators follow expectable correlational patterns as ROE and ROA (using PL before tax) are strongly and positively correlated among each other ($r=.741$, $p<.01$), solvency ratios are inherently positively correlated and ROA is

positively correlated with both asset based and liability based solvency ratios. Overall rating and national ranking are, quite naturally, positively correlated among each other ($r=.943$, $p<.01$) which suggests its redundancy in future analyses. Due to the fact that the current database integrates data from three countries, we deemed as more suitable to consider overall CSR ratings instead of national rankings. CSR overall rating was found to positively correlate with both ROE ($r=.179$, $p<.05$) and ROA ($r=.181$, $p<.05$) but negatively correlate with solvency ratio (asset based) ($r=-.183$, $p<.05$). This may indicate different logics as regards advantages / disadvantages of CSR.

Although not hypothesized, the correlations between economic sector and any of the focal variables in the conceptual model is informative. Bivariate analyses did show two significant correlations between NAICS1 and some variables. Namely, CSR rating that has a significant correlation coefficient of $-.121$ ($p<.05$) meaning companies in upper NAICS1 categories show significantly lower CSR ratings. Likewise, EBITDA tends to be higher close to primary economic sector.

Table 3 – Descriptive and bivariate statistics

	Min-max	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Overall_Rating	32-71	57.69	6.26	1										
2. National_Ranking	0-100	81.76	21.56	.943**	1									
3. Last_year	2018-2019	-	-	.046	.023	1								
4. country	1-3	-	-	-.020	-.002	.277**	1							
5. ROE__using_PL_before_tax%	-232.66 – 556.15	12.56	47.06	.179*	.181*	-.013	-.066	1						
6. ROA_using_PL_before_tax%	-63.38 – 42.02	3.81	9.40	.156*	.228**	.045	-.041	.741**	1					
7. EBITDA_ano_€ (10 ⁶)	-.145 – 28.88	1831.54	3627.84	.094	.142	.081	.126	.032	.096	1				
8. V_EBITDA	-2.04 – 18.51	0.22	1.61	.014	.013	.004	-.099	-.011	-.067	-.038	1			
9. Solvency_ratio_asset_based%	-26.18 - 100	38.32	19.33	-.183*	-.186*	-.260**	-.026	.023	.181*	-.062	-.223**	1		
10. Solvency_ratio_liability_based%	0 – 99.81	49.31	24.45	-.024	-.033	.250**	.179*	.073	.226**	.026	-.213**	.799**	1	
11. NAICS1	1-9	-	-	-.131*	-.117	-.064	.104	.033	-.053	-.256**	.047	.068	.005	1

* $p < .05$; ** $p < .01$

Hypothesis testing

Hypotheses pertain to the direct relationship between CSR indicator and both profitability and liquidity financial indicators. Additionally, it evolves into testing interaction effects with economic sector. The full set of hypotheses comprehend four statements where CSR is firstly positively associated to higher financial returns (H1) subdivided into three cases (ROE, ROA, EBITDA), and then positively associated to higher liquidity (H2) subdivided into two cases (asset-based, and liability-based solvency ratios). The first interaction hypothesis predicted stronger relations between CSR and financial returns in closer-to-tertiary sector companies. The second, and last, interaction hypothesis predicted a similar situation for the strength in the association between CSR and solvency.

For clarity sake, results will be shown per financial ratio where both the direct hypothesized relationship and the interaction effects can be simultaneously seen in the respective table. The first column indicates to which financial indicator the analysis concern, as DV (dependent variable). Therefore, Table 4 to Table 9 will show separate results for ROE (Table 4), ROA (Table 6), EBITDA and EBITDA variation (Table 8), Solvency ratios SRAB and SRLB (Table 9).

Table 4 – ROE regressed on CSR

DV=ROE	Coeff	se	t	p	LLCI	ULCI
Constant	11305	20466	3.07	.581	-29096	51707
RatingG	.98	.31	3.07	.002	0.35	1.60
NAICS1	.37	1.41	0.26	.792	-2.42	3.17
Rating*NAICS1	.49	.22	2.22	.027	0.05	0.93
Year	-5.59	10.13	-0.55	.581	-25.61	13.41
Country	1.47	3.49	0.42	.674	-5.43	8.38

Results taking ROE as the dependent variable showed a positive coefficient for CSR rating (B=.98, se=.31; CI95 [0.35; 1.60]) thus supporting H1a. Likewise, there is a significant interaction effect of .49 (se=.22) CI95 [0.05; 0.93] where the association between CSR rating and ROE is significant only when NAICS1 closes 3.36 (which due

to the nature of the variable should be rounded up to 4) as depicted in the Johnson-Neyman table below.

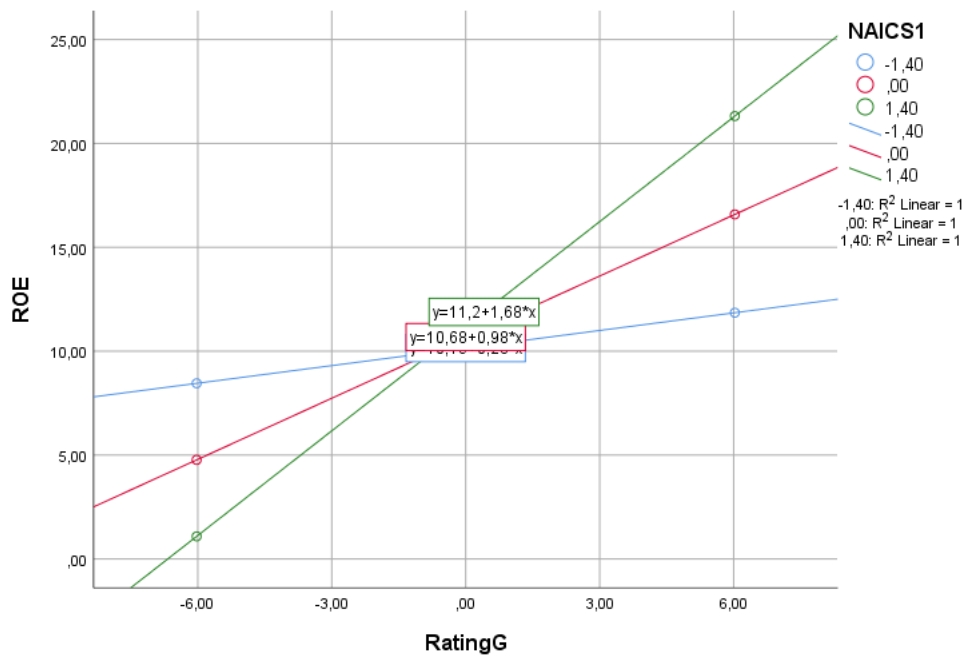
Table 5 - Johnson-Neyman table for ROE

Conditional effect of focal predictor at values of the moderator:

NAICS1	Effect	se	t	p	LLCI	ULCI
2.0000	.0051	.5423	.0094	.9925	-1.0654	1.0756
2.3000	.1543	.4896	.3152	.7530	-.8121	1.1208
2.6000	.3036	.4408	.6887	.4920	-.5666	1.1738
2.9000	.4528	.3974	1.1393	.2562	-.3317	1.2374
3.2000	.6021	.3614	1.6660	.0976	-.1113	1.3154
3.3619	.6826	.3458	1.9740	.0500	.0000	1.3652
3.5000	.7513	.3350	2.2425	.0262	.0900	1.4126
3.8000	.9005	.3208	2.8075	.0056	.2674	1.5337
4.1000	1.0498	.3202	3.2783	.0013	.4177	1.6819
4.4000	1.1990	.3335	3.5957	.0004	.5407	1.8572
4.7000	1.3482	.3590	3.7559	.0002	.6396	2.0568
5.0000	1.4975	.3944	3.7972	.0002	.7190	2.2760
5.3000	1.6467	.4373	3.7659	.0002	.7835	2.5099
5.6000	1.7959	.4857	3.6978	.0003	.8372	2.7547
5.9000	1.9452	.5381	3.6148	.0004	.8829	3.0074
6.2000	2.0944	.5935	3.5289	.0005	.9228	3.2660
6.5000	2.2437	.6511	3.4459	.0007	.9583	3.5290
6.8000	2.3929	.7104	3.3684	.0009	.9906	3.7952
7.1000	2.5421	.7709	3.2974	.0012	1.0203	4.0640
7.4000	2.6914	.8325	3.2328	.0015	1.0480	4.3347
7.7000	2.8406	.8949	3.1743	.0018	1.0741	4.6071
8.0000	2.9898	.9579	3.1214	.0021	1.0990	4.8807

The interaction graph shows that, as hypothesized companies classified in higher NAICS1 will show stronger positive relation between CSR and ROE (Figure 2). This finding fully supports H3a.

Figure 2 – Interaction graph for ROE



Results taking ROA as the dependent variable showed a positive coefficient for CSR rating ($B=.2469$, $se=.1181$; CI95 [0.0138; 0.4801]) thus supporting H1b. Likewise, there is a significant interaction effect of .30 ($se=.08$) CI95 [0.1376; 0.4656] where the association between CSR rating and ROA is significant only when NAICS1 closes 3.92 (rounded up to 4) as depicted in the Johnson-Neyman table below (Table 6).

Table 6 - CSR regressed on ROA

DV=ROA	Coeff	se	t	p	LLCI	ULCI
Constant	-3113.87	7123.85	-.4371	.6626	-17174.72	10946.99
RatingG	.2469	.1181	2.09	.0381	.0138	.4801
NAICS1	-.0145	.5241	-.0276	.9780	-1.05	1.02
Rating*NAICS1	.30	.08	3.63	.0004	.1376	.4656
Year	1.55	3.53	.4378	.6621	-5.42	8.51
Country	-.3917	1.29	-.3031	.7622	-2.94	2.16

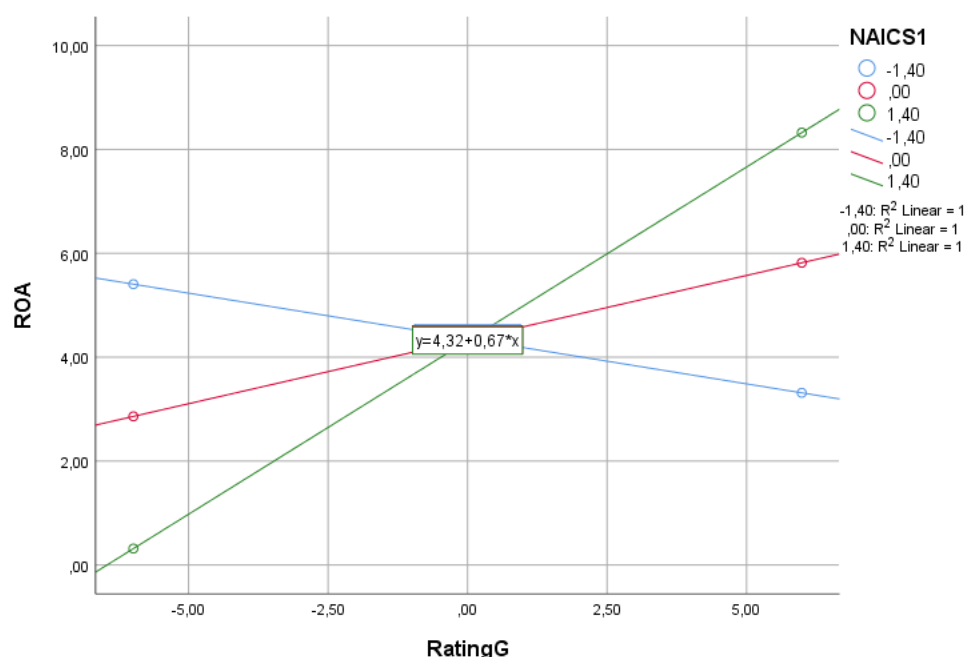
Table 7 - Johnson-Neyman table for ROA

Conditional effect of focal predictor at values of the moderator:

NAICS1	Effect	se	t	<i>p</i>	LLCI	ULCI
2.0000	-.3461	.2013	-1.7194	.0873	-.7435	.0512
2.3000	-.2557	.1817	-1.4069	.1612	-.6143	.1030
2.6000	-.1652	.1636	-1.0099	.3140	-.4881	.1577
2.9000	-.0747	.1474	-.5068	.6130	-.3657	.2163
3.2000	.0158	.1340	.1176	.9065	-.2488	.2803
3.5000	.1062	.1242	.8553	.3936	-.1389	.3514
3.8000	.1967	.1189	1.6546	.0998	-.0380	.4314
3.9212	.2332	.1182	1.9738	.0500	.0000	.4665
4.1000	.2872	.1187	2.4197	.0166	.0529	.5214
4.4000	.3777	.1236	3.0551	.0026	.1337	.6216
4.7000	.4681	.1331	3.5168	.0006	.2054	.7309
5.0000	.5586	.1463	3.8186	.0002	.2699	.8473
5.3000	.6491	.1622	4.0006	.0001	.3288	.9693
5.6000	.7396	.1803	4.1029	.0001	.3838	1.0953
5.9000	.8300	.1998	4.1553	.0001	.4358	1.2243
6.2000	.9205	.2204	4.1774	.0000	.4856	1.3554
6.5000	1.0110	.2418	4.1816	.0000	.5338	1.4882
6.8000	1.1015	.2638	4.1753	.0000	.5808	1.6221
7.1000	1.1919	.2863	4.1630	.0000	.6268	1.7571
7.4000	1.2824	.3092	4.1476	.0001	.6721	1.8927
7.7000	1.3729	.3324	4.1306	.0001	.7169	2.0289
8.0000	1.4634	.3558	4.1130	.0001	.7611	2.1656

The interaction graph shows that, as hypothesized, companies classified in higher NAICS1 will show stronger positive relation between CSR and ROA (Figure 3). This finding fully supports H3b.

Figure 3 – Interaction graph for ROA



As regards EBITDA, for parsimony sake, table 8 shows findings for both EBITDA and EBITDA variation.

Table 8 – CSR regressed on EBITDA and EBITDA_var

	Coeff	se	t	p	LLCI	ULCI
DV=EBITDA						
Constant	-804E6	2972E6	-.2708	.7869	-6670E6	5062E6
RatingG	35605.9736	43369.5478	.8210	.4128	-50002.706	121214.653
NAICS1	-662511.79	192647.034	-3.439	.0007	-1042784.6	-282239.02
Rating*NAICS1	16881.0804	30524.8467	.553	.5810	-43372.991	77135.1516
Year	398.110E3	1472.464E3	.2704	.7872	-2508E3	3304E3
Country	1131198.54	474294.339	2.385	.0182	194972.216	2067424.85
DV=EBITDA_var						
Constant	-914.047	1605.773	-.5692	.5700	-4083	2255
RatingG	.0042	.0212	.1969	.8442	-.0376	.0460
NAICS1	.0998	.0941	1.0602	.2906	-.0860	.2855
Rating*NAICS1	-.0016	.0149	-1.093	.9131	-.0311	.0278
Year	.4533	.7954	.5699	.5695	-1.1169	2.0236
Country	-.3882	.2349	-1.653	.1002	-.8518	.0754

Results taking EBITDA as the dependent variable showed no significant association for CSR rating as well as no interaction effect with economic sector thus not lending support to H1c and H3c. The same was found for EBITDA variation taken as dependent variable, which also goes in line with not supporting H1a and H3c.

As regards solvency ratios, Table 9 shows the aggregated findings for both types of solvency ratios.

Table 9 – CSR regressed on SRAB

DV=SRAB	Coeff	se	t	p	LLCI	ULCI
Constant	51698.1537	14639.3201	3.5315	.0005	22802.2811	80594.0262
RatingG	-.4740	.2281	-2.0785	.0392	-.9242	-.0239
NAICS1	-.1295	1.0115	-.1280	.8983	-2.1261	1.8671
Rating*NAICS1	.0644	.1600	.4025	.6878	-.2514	.3802
Year	-25.5897	7.2519	-3.5287	.0005	-39.9038	-11.2755
Country	1.6508	2.4903	.6629	.5083	-3.2647	6.5663
DV=SRLB	Coeff	se	t	p	LLCI	ULCI
Constant	-66348.29	25999.3744	-2.5519	.0118	-117767.11	-14929.473
RatingG	-.1883	.3617	-.5207	.6034	-.9037	.5270
NAICS1	-.4953	1.4766	-.3354	.7378	-3.4157	2.4250
Rating*NAICS1	.1383	.2528	.5469	.5853	-.3617	.6383
Year	32.8818	12.8791	2.5531	.0118	7.4108	58.3528
Country	4.1025	3.6764	1.1159	.2665	-3.1684	11.3733

Results taking solvency ratios as dependent variables showed that CSR rating is negatively associated to SRAB (B=-.47, se=.22; CI95[-0.92; -0.02]) but without significant interaction effect with the economic sector (B=0.06, se=0.16; CI95[-0.25; 0.38]) which supports H2a (one must keep in mind that in the case of SRAB, the lower values indicate better solvency situation, so the valence signal established in the hypothesis must be reversed) and does not support H4a. As regards SRAB, findings are slightly different with no significant association between variables thus not supporting both H2b and H4b.

6. Discussion of results and Conclusion

The importance CSR has gained in society and its governing bodies is uncontested, mainly in the western world, but such is not the case for the empirical evidence of the added value CSR brings to corporations. Literature on the CSR corporate performance link, especially with a focus on economic or financial performance has been offered divergent findings which have been addressed either by clarifying which measures should be used to operationally define CSR and Corporate Performance or by adopting a contingency approach where boundary conditions apply. Knowledge about such contingencies is not fully developed and there is indication that economic sector, also named industry, is a key external contingency as the implications of the production itself are critical for several dimensions of CSR. Such is a gap in literature that deserves attention.

Therefore, this study was undertaken to analyze how CSR behaves within specific industry sectors, thus helping to fill the gap identified in the literature. For such purpose this study includes as a moderating variable, the industry, which is a dimension that is recently gaining traction in akin research (Kotler et al., 2006; Ryan, 2015; Del Giudice et al., 2018) and is intended to add knowledge by means of large-scale data to examine such relationships in West-Southern Europe, i.e. Portugal, Spain and France. To empirically test the conceptual model, this study adopted an international credited evaluation of CSR (CSRHub) that comprehensively measures it as a multidimensional construct covering economic, social, environmental and governance aspects. In matching with companies that have been CSR rated, this study relies on a substantially large company scale of 255 listed companies that operate in these countries and were also rated in CSR Hub. To work on reliable and well-known economic and financial performance measures, the study collected data on ROA, ROE, EBITDA and solvency ratios. This study also endeavored to adopt a credited industry codification, namely NAICS that has the advantage of being ordered from primary to tertiary level industries.

Contrary to both Mahoney and Roberts (2007), and Nelling and Webb (2009) the results of our panel data analyses found significant relationship between CSR and economic and financial indicators namely with ROE, ROA and both solvency ratios giving support to hypothesis 1, namely H1a and H1b. These results are consistent with our expectations and are in line with several studies (Waddock & Graves, 1997; Margolis

& Walsh, 2003; Orlitzky et al., 2003; Deng et al., 2013; Ferrell et al., 2016; Lins et al., 2017). However, such finding was not convergent when using EBITDA or its annual variation, which showed no significant association thus rejecting H1c. This goes more in line with some authors that suggest CSR/FP relationship might not be direct (Margolis et al., 2007; Dixon-Fowler et al., 2013; Suto & Takehara, 2016; Zhao & Murrell, 2016). We believe these findings are clear due to the use of well-known and clearly defined financial indicators, namely, ROE, ROA and EBITDA which exclude the possibility that the use of diffuse performance indicators could be the cause. The divergent findings are of interest as they may pertain to the specific conditions of each country (as EBITDA is known for being more suitable for international comparisons due to controlling for fiscal differences) or to the nature itself of the financial ratios. Justifying these divergent findings with the country is plausible as the bivariate analysis and the compositions of types of company per industry per country suggests the three samples are not directly comparable. Such is not an issue in this study because it has no comparative purposes, but it could bring doubts as regards working with an integrated full dataset. Because analysis controlled for country effects, we trust findings were not biased by such possible country level differences. However, in controlling for country in the EBITDA analyses, the statistics indicate country makes a difference which suggests this can be an important variable that must be always taken into consideration. Even so, as it was used as a control variable in the EBITDA analyses, we gave credit to the non-significant association between CSR overall rating and EBITDA. Interestingly, this situation reinforces the divergent findings often reported in literature showing such direct relationship must be approached from a more complex perspective. In designing macro-level research, one tends to over-simplify the true nature of complex relationships but in getting closer to reality, there are many details that may play an unattended role. In this case the call for a contingent approach is also reinforced by these findings.

In conceiving contingent factors, despite theoretical indication reviewed in literature, attention should fall upon the negative correlation found between NAICS and CSR overall rating. This indicated that CSR activities are not equally seen across primary, secondary and tertiary economic sectors. This strongly suggests that using such variable as a moderator makes sense.

In testing for these interaction effects with industry, our detailed findings showed that the types of industry were significant. These results are consistent with our expectation

that the industry sector does matter in terms of CSR and fully supported the hypotheses to the exception of EBITDA.

Also, the third hypothesis, namely H3a and H3b, was supported by the results, implying that sector moderates the relationship between CSR and financial returns in such a way that the closer the sector is to tertiary level, the stronger the relation. In detail, the significant CSR rating effect on ROE is significant only for industries coded 4 or above in NAICS, meaning that closer to the tertiary level companies, such as transportation, communications, electric, gas and sanitary services, benefit more from adopting CSR activities. The same occurred for ROA precisely for the same NAICS level code. This is not truly surprising as ROE and ROA are correlated ($r=.741$, $p<.01$; corresponding to 55% shared variance). As hypothesized, companies classified in higher NAICS1 will show stronger positive relation between CSR and ROA.

The expectation that industry could moderate the relationship between CSR overall rating and EBITDA was unfulfilled as no interaction effect was significant neither when using EBITDA as a dependent variable, nor when using EBITDA annual variation. This fully rejected H3c and reinforces the plausibility of a more complex situation that requires more moderators in the equation or some weights as the bivariate findings do suggest EBITDA tends to be higher in companies closer to primary economic sector.

When taking solvency ratios as dependent variables, CSR rating is negatively associated to SRAB but without significant interaction effect with the economic sector, which goes in line with the direction established in H2a for SRAB (the lower the value, the better the company situation in meeting its obligations) and also does not support H4a. As regards SRLB, findings are different with no significant association between variables, thus not supporting neither H2b nor H4b. To account for H2a, findings can be explained by the companies that enjoy a more robust asset situation investing more in CSR (*ceteris paribus* by having higher asset value, such companies will get lower solvency ratios due to the ratio calculation). Solvency as a construct is considerably different from the most commonly used profitability indicators and such findings suggest that CSR makes a possible contribution to improve companies' solvency when assets are taken into consideration, not liabilities.

Concluding, the first interaction test showed stronger relations between CSR and financial returns in closer-to-tertiary sector companies. The second, and last, interaction

tests showed a similar situation for the strength in the association between CSR and solvency (asset based). The contention that CSR contributes to better financial performance received strong support in these studies to the exception of using EBITDA as a measure.

These findings must be interpreted considering limitations that always occur in this sort of studies. As depicted, the complexity of reality tends to be blurred when seen at a distance, such as when approaching data at a macro level. Details matter and such details may get lost when needing to design a testable model with quantitative international available data. As mentioned, only the listed companies included in the database that have a matching data in CSRhub database could be used to test the hypotheses. However, they do not necessarily represent the whole universe of companies as most of the existing companies will not be listed and the criteria to show up in CSR Hub necessarily must rule out some companies that must have some sort of CSR activity but do not meet minimum criteria to be rated.

For future research it may be important to consider the persistence of EBITDA as an outcome that is neither directly predicted nor when taking into consideration the interaction effect with the economic sector. This may imply the incorporation of more moderators in parallel or even the possibility that such moderation is moderated by other variable, e.g. investment regulations concerning CSR such as green investment leveraging. It may also be interesting to drop the assumption that sectors are homogeneous and explore interaction effects at the subsector level. It might also be important to extend the sample to other countries, preferably within the EU due to the harmonization of CSR policies at above-country level.

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APPENDIX

H3a – ROE

Model : 1

Y: ROE

X: RatingG

W: NAICS1

Covariates: lastyear Country

Sample Size: 176

OUTCOME VARIABLE: ROE

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2812	,0791	619,3777	2,9192	5,0000	170,0000	,0148

Model

	coeff	se	t	p	LLCI	ULCI
constant	11305,5955	20466,7061	,5524	,5814	-29096,051	51707,2423
RatingG	,9802	,3187	3,0756	,0024	,3511	1,6094
NAICS1	,3736	1,4198	,2631	,7928	-2,4292	3,1764
Int_1	,4975	,2237	2,2240	,0275	,0559	,9390
lastyear	-5,5963	10,1386	-,5520	,5817	-25,6102	14,4175
Country	1,4731	3,4990	,4210	,6743	-5,4339	8,3802

Product terms key:

Int_1 : RatingG x NAICS1

Test(s) of highest order unconditional interaction(s):

R2-chng	F	df1	df2	p	
X*W	,0268	4,9463	1,0000	170,0000	,0275

Focal predict: RatingG (X)

Mod var: NAICS1 (W)

Conditional effects of the focal predictor at values of the moderator(s):

NAICS1	Effect	se	t	p	LLCI	ULCI
-1,4035	,2820	,4476	,6302	,5294	-,6015	1,1656
,0000	,9802	,3187	3,0756	,0024	,3511	1,6094
1,4035	1,6784	,4471	3,7536	,0002	,7957	2,5611

Moderator value(s) defining Johnson-Neyman significance region(s):

Value	% below	% above
-,5983	43,7500	56,2500

Conditional effect of focal predictor at values of the moderator:

NAICS1	Effect	se	t	p	LLCI	ULCI
-1,9602	,0051	,5423	,0094	,9925	-1,0654	1,0756
-1,6602	,1543	,4896	,3152	,7530	-,8121	1,1208
-1,3602	,3036	,4408	,6887	,4920	-,5666	1,1738
-1,0602	,4528	,3974	1,1393	,2562	-,3317	1,2374
-,7602	,6021	,3614	1,6660	,0976	-,1113	1,3154
-,5983	,6826	,3458	1,9740	,0500	,0000	1,3652
-,4602	,7513	,3350	2,2425	,0262	,0900	1,4126
-,1602	,9005	,3208	2,8075	,0056	,2674	1,5337
,1398	1,0498	,3202	3,2783	,0013	,4177	1,6819
,4398	1,1990	,3335	3,5957	,0004	,5407	1,8572
,7398	1,3482	,3590	3,7559	,0002	,6396	2,0568
1,0398	1,4975	,3944	3,7972	,0002	,7190	2,2760

1,3398	1,6467	,4373	3,7659	,0002	,7835	2,5099
1,6398	1,7959	,4857	3,6978	,0003	,8372	2,7547
1,9398	1,9452	,5381	3,6148	,0004	,8829	3,0074
2,2398	2,0944	,5935	3,5289	,0005	,9228	3,2660
2,5398	2,2437	,6511	3,4459	,0007	,9583	3,5290
2,8398	2,3929	,7104	3,3684	,0009	,9906	3,7952
3,1398	2,5421	,7709	3,2974	,0012	1,0203	4,0640
3,4398	2,6914	,8325	3,2328	,0015	1,0480	4,3347
3,7398	2,8406	,8949	3,1743	,0018	1,0741	4,6071
4,0398	2,9898	,9579	3,1214	,0021	1,0990	4,8807

DATA LIST FREE/

RatingG NAICS1 ROE .

BEGIN DATA.

-6,0254	-1,4035	8,4548
,0000	-1,4035	10,1542
6,0254	-1,4035	11,8537
-6,0254	,0000	4,7722
,0000	,0000	10,6785
6,0254	,0000	16,5849
-6,0254	1,4035	1,0896
,0000	1,4035	11,2028
6,0254	1,4035	21,3160

END DATA.

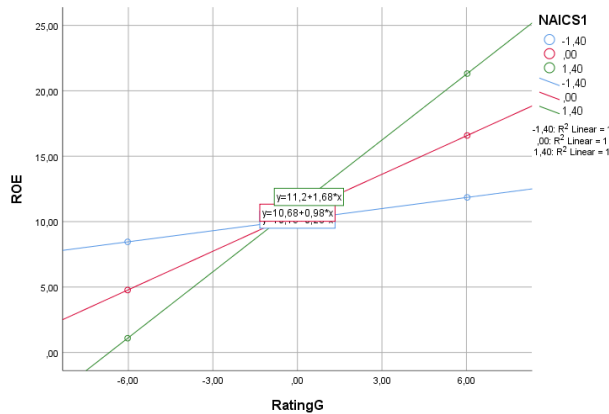
GRAPH/SCATTERPLOT=

RatingG WITH ROE BY NAICS1 .

Level of confidence for all confidence intervals in output: 95,0000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis: NAICS1 RatingG



Controlling for year and country, companies operating in sectors with higher NAICS code show a positive association of CSR on ROE while those that operate in sectors with lower NAICS code show no association between CSR and ROE.

Conditional effect of focal predictor at values of the moderator:

NAICS1	Effect	se	t	p	LLCI	ULCI
2,0000	,0051	,5423	,0094	,9925	-1,0654	1,0756
2,3000	,1543	,4896	,3152	,7530	-,8121	1,1208
2,6000	,3036	,4408	,6887	,4920	-,5666	1,1738
2,9000	,4528	,3974	1,1393	,2562	-,3317	1,2374
3,2000	,6021	,3614	1,6660	,0976	-,1113	1,3154
3,3619	,6826	,3458	1,9740	,0500	,0000	1,3652
3,5000	,7513	,3350	2,2425	,0262	,0900	1,4126
3,8000	,9005	,3208	2,8075	,0056	,2674	1,5337
4,1000	1,0498	,3202	3,2783	,0013	,4177	1,6819

4,4000	1,1990	,3335	3,5957	,0004	,5407	1,8572
4,7000	1,3482	,3590	3,7559	,0002	,6396	2,0568
5,0000	1,4975	,3944	3,7972	,0002	,7190	2,2760
5,3000	1,6467	,4373	3,7659	,0002	,7835	2,5099
5,6000	1,7959	,4857	3,6978	,0003	,8372	2,7547
5,9000	1,9452	,5381	3,6148	,0004	,8829	3,0074
6,2000	2,0944	,5935	3,5289	,0005	,9228	3,2660
6,5000	2,2437	,6511	3,4459	,0007	,9583	3,5290
6,8000	2,3929	,7104	3,3684	,0009	,9906	3,7952
7,1000	2,5421	,7709	3,2974	,0012	1,0203	4,0640
7,4000	2,6914	,8325	3,2328	,0015	1,0480	4,3347
7,7000	2,8406	,8949	3,1743	,0018	1,0741	4,6071
8,0000	2,9898	,9579	3,1214	,0021	1,0990	4,8807

H3b – ROA

Model : 1

Y: ROA

X: RatingG

W: NAICS1

Covariates: lastyear Country

Sample Size: 179

OUTCOME VARIABLE: ROA

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3119	,0973	85,7260	3,7296	5,0000	173,0000	,0031

Model

	coeff	se	t	p	LLCI	ULCI
constant	-3113,8648	7123,8496	-,4371	,6626	-17174,724	10946,9944
RatingG	,2469	,1181	2,0902	,0381	,0138	,4801
NAICS1	-,0145	,5241	-,0276	,9780	-1,0490	1,0201
Int_1	3016	,0831	3,6290	,0004	,1376	,4656
lastyear	1,5450	3,5290	,4378	,6621	-5,4205	8,5104
Country	-,3917	1,2924	-,3031	,7622	-2,9426	2,1592

Product terms key:

Int_1 : RatingG x NAICS1

Test(s) of highest order unconditional interaction(s):

R2-chng	F	df1	df2	p	
X*W	,0687	13,1696	1,0000	173,0000	,0004

Focal predict: RatingG (X)

Mod var: NAICS1 (W)

Conditional effects of the focal predictor at values of the moderator(s):

NAICS1	Effect	se	t	p	LLCI	ULCI
-1,3978	-,1746	,1654	-1,0559	,2925	-,5011	,1518
,0000	,2469	,1181	2,0902	,0381	,0138	,4801
1,3978	,6685	,1660	4,0280	,0001	,3409	,9960

Moderator value(s) defining Johnson-Neyman significance region(s):

Value	% below	% above
-,0453	43,5754	56,4246

Conditional effect of focal predictor at values of the moderator:

NAICS1	Effect	se	t	p	LLCI	ULCI
-1,9665	-,3461	,2013	-1,7194	,0873	-,7435	,0512
-1,6665	-,2557	,1817	-1,4069	,1612	-,6143	,1030
-1,3665	-,1652	,1636	-1,0099	,3140	-,4881	,1577
-1,0665	-,0747	,1474	-,5068	,6130	-,3657	,2163
-,7665	,0158	,1340	,1176	,9065	-,2488	,2803
-,4665	,1062	,1242	,8553	,3936	-,1389	,3514
-,1665	,1967	,1189	1,6546	,0998	-,0380	,4314
-,0453	,2332	,1182	1,9738	,0500	,0000	,4665
,1335	,2872	,1187	2,4197	,0166	,0529	,5214
,4335	,3777	,1236	3,0551	,0026	,1337	,6216
,7335	,4681	,1331	3,5168	,0006	,2054	,7309
1,0335	,5586	,1463	3,8186	,0002	,2699	,8473
1,3335	,6491	,1622	4,0006	,0001	,3288	,9693
1,6335	,7396	,1803	4,1029	,0001	,3838	1,0953
1,9335	,8300	,1998	4,1553	,0001	,4358	1,2243
2,2335	,9205	,2204	4,1774	,0000	,4856	1,3554
2,5335	1,0110	,2418	4,1816	,0000	,5338	1,4882
2,8335	1,1015	,2638	4,1753	,0000	,5808	1,6221
3,1335	1,1919	,2863	4,1630	,0000	,6268	1,7571
3,4335	1,2824	,3092	4,1476	,0001	,6721	1,8927
3,7335	1,3729	,3324	4,1306	,0001	,7169	2,0289
4,0335	1,4634	,3558	4,1130	,0001	,7611	2,1656

DATA LIST FREE/

RatingG NAICS1 ROA .

BEGIN DATA.

-5,9896	-1,3978	5,4059
,0000	-1,3978	4,3599
5,9896	-1,3978	3,3138
-5,9896	,0000	2,8607
,0000	,0000	4,3396
5,9896	,0000	5,8185
-5,9896	1,3978	,3155
,0000	1,3978	4,3194
5,9896	1,3978	8,3233

END DATA.

GRAPH/SCATTERPLOT=

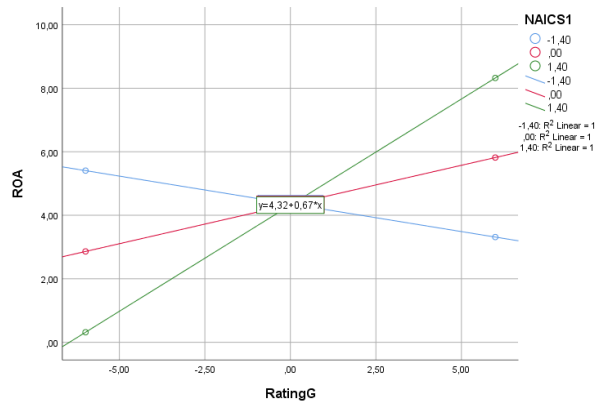
RatingG WITH ROA BY NAICS1 .

Level of confidence for all confidence intervals in output: 95,0000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis:

NAICS1 RatingG



Conditional effect of focal predictor at values of the moderator:

NAICS1 Effect se t p

LLCI	ULCI					
2,0000	-,3461	,2013	-1,7194	,0873	-,7435	,0512
2,3000	-,2557	,1817	-1,4069	,1612	-,6143	,1030
2,6000	-,1652	,1636	-1,0099	,3140	-,4881	,1577
2,9000	-,0747	,1474	-,5068	,6130	-,3657	,2163
3,2000	,0158	,1340	,1176	,9065	-,2488	,2803
3,5000	,1062	,1242	,8553	,3936	-,1389	,3514
3,8000	,1967	,1189	1,6546	,0998	-,0380	,4314
3,9212	,2332	,1182	1,9738	,0500	,0000	,4665
4,1000	,2872	,1187	2,4197	,0166	,0529	,5214
4,4000	,3777	,1236	3,0551	,0026	,1337	,6216
4,7000	,4681	,1331	3,5168	,0006	,2054	,7309
5,0000	,5586	,1463	3,8186	,0002	,2699	,8473
5,3000	,6491	,1622	4,0006	,0001	,3288	,9693
5,6000	,7396	,1803	4,1029	,0001	,3838	1,0953
5,9000	,8300	,1998	4,1553	,0001	,4358	1,2243
6,2000	,9205	,2204	4,1774	,0000	,4856	1,3554
6,5000	1,0110	,2418	4,1816	,0000	,5338	1,4882
6,8000	1,1015	,2638	4,1753	,0000	,5808	1,6221
7,1000	1,1919	,2863	4,1630	,0000	,6268	1,7571
7,4000	1,2824	,3092	4,1476	,0001	,6721	1,8927
7,7000	1,3729	,3324	4,1306	,0001	,7169	2,0289
8,0000	1,4634	,3558	4,1130	,0001	,7611	2,1656

H3a – EBITDA

Model : 1

Y : EBITDA_1

X : RatingG

W : NAICS1

Covariates: lastyear Country

Sample Size: 177

OUTCOME VARIABLE: EBITDA_1

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3057	,0935	1,154E+013	3,5268	5,0000	171,0000	,0046

Model

	coeff	se	t	p	LLCI	ULCI
constant	-804921235	2972515753	-,2708	,7869	-6,67E+009	5062632423
RatingG	35605,9736	43369,5478	,8210	,4128	-50002,706	121214,653
NAICS1	-662511,79	192647,034	-3,4390	,0007	-1042784,6	-282239,02
Int_1	16881,0804	30524,8467	,5530	,5810	-43372,991	77135,1516

lastyear	398110,607	1472464,62	,2704	,7872	-2508439,2	3304660,44
Country	1131198,54	474294,339	2,3850	,0182	194972,216	2067424,85

Product terms key:

Int_1 : RatingG x NAICS1

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0016	,3058	1,0000	171,0000	,5810

Focal predict: RatingG (X)
Mod var: NAICS1 (W)

DATA LIST FREE/

RatingG NAICS1 EBITDA_1 .

BEGIN DATA.

```
-6,0231 -1,4014 2678834,54
,0000 -1,4014 2750806,41
6,0231 -1,4014 2822778,29
-6,0231 0000 1607918,63
,0000 ,0000 1822378,30
6,0231 ,0000 2036837,97
-6,0231 1,4014 537002,715
,0000 1,4014 893950,186
6,0231 1,4014 1250897,66
```

END DATA.

GRAPH/SCATTERPLOT=

RatingG WITH EBITDA_1 BY NAICS1 .

Level of confidence for all confidence intervals in output: 95,0000

NOTE: The following variables were mean centered prior to analysis: NAICS1 RatingG

Controlling for year and country, there is no significant relationship between CSR and EBITDA (current year).

EBITDA var [(EBITDA1-EBITDA0)/EBITDA1]

Model : 1

Y : V_EBITDA

X : RatingG

W : NAICS1

Covariates: lastyear Country

Sample Size: 176

OUTCOME VARIABLE: V_EBITDA

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,1367	,0187	2,7534	,6473	5,0000	170,0000	,6640

Model

	coeff	se	t	p	LLCI	ULCI
constant	-914,0479	1605,7731	-,5692	,5700	-4083,8729	2255,7771
RatingG	,0042	,0212	,1969	,8442	-,0376	,0460
NAICS1	,0998	,0941	1,0602	,2906	-,0860	,2855
Int_1	-,0016	,0149	-,1093	,9131	-,0311	,0278
lastyear	,4533	,7954	,5699	,5695	-1,1169	2,0236
Country	-,3882	,2349	-1,6530	,1002	-,8518	,0754

Product terms key:

Int_1 : RatingG x NAICS1

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0001	,0120	1,0000	170,0000	,9131

Focal predict: RatingG (X)

Mod var: NAICS1 (W)

DATA LIST FREE/

RatingG NAICS1 V_EBITDA .

BEGIN DATA.

-6,0363	-1,4031	,0497
,0000	-1,4031	,0887
6,0363	-1,4031	,1277
-6,0363	,0000	,2035
,0000	,0000	,2287
6,0363	,0000	,2539
-6,0363	1,4031	,3573
,0000	1,4031	,3687
6,0363	1,4031	,3801

END DATA.

GRAPH/SCATTERPLOT=

RatingG WITH V_EBITDA BY NAICS1 .

Level of confidence for all confidence intervals in output:95,0000

NOTE: The following variables were mean centered prior to analysis: NAICS1 RatingG

H4a – SR Asset

Model : 1

Y : SRAB

X : RatingG

W : NAICS1

Covariates: lastyear Country

Sample Size: 178

OUTCOME VARIABLE: SRAB

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,3135	,0983	317,6344	3,7504	5,0000	172,0000	,0030

Model

	coeff	se	t	p	LLCI	ULCI
constant	51698,1537	14639,3201	3,5315	,0005	22802,2811	80594,0262
RatingG	-,4740	,2281	-2,0785	,0392	-,9242	-,0239
NAICS1	-,1295	1,0115	-,1280	,8983	-2,1261	1,8671
Int_1	,0644	,1600	,4025	,6878	-,2514	,3802
lastyear	-25,5897	7,2519	-3,5287	,0005	-39,9038	-11,2755
Country	1,6508	2,4903	6629	,5083	-3,2647	6,5663

Product terms key:

Int_1 : RatingG x NAICS1

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0008	,1620	1,0000	172,0000	,6878

Focal predict: RatingG (X)

Mod var: NAICS1 (W)

DATA LIST FREE/

RatingG NAICS1 SRAB .

BEGIN DATA.

-5,9941 -1,3999 41,4939
,0000 -1,3999 38,1122
5,9941 -1,3999 34,7305
-5,9941 ,0000 40,7722
,0000 ,0000 37,9309
5,9941 ,0000 35,0896
-5,9941 1,3999 40,0505
,0000 1,3999 37,7496
5,9941 1,3999 35,4487

END DATA.

GRAPH/SCATTERPLOT=

RatingG WITH SRAB BY NAICS1 .

Level of confidence for all confidence intervals in output: 95,0000

NOTE: The following variables were mean centered prior to analysis: NAICS1 RatingG

H4b – SR Liability

Model : 1

Y : SRLB

X : RatingG

W : NAICS1

Covariates: lastyear Country

Sample Size: 141

OUTCOME VARIABLE: SRLB

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2775	,0770	568,0513	2,2525	5,0000	135,0000	,0527

Model

	coeff	se	t	p	LLCI	ULCI
constant	-66348,290	25999,3744	-2,5519	,0118	-117767,11	-14929,473
RatingG	-,1883	,3617	-,5207	,6034	-,9037	,5270
NAICS1	-,4953	1,4766	-,3354	,7378	-3,4157	2,4250
Int_1	,1383	,2528	,5469	,5853	-,3617	,6383
lastyear	32,8818	12,8791	2,5531	,0118	7,4108	58,3528
Country	4,1025	3,6764	1,1159	,2665	-3,1684	11,3733

Product terms key:

Int_1 : RatingG x NAICS1

Test(s) of highest order unconditional interaction(s):

R2-chng	F	df1	df2	p	
X*W	,0020	,2991	1,0000	135,0000	,5853

Focal predict: RatingG (X)

Mod var: NAICS1 (W)

DATA LIST FREE/

RatingG NAICS1 SRLB .

BEGIN DATA.

-5,7237 -1,4317 52,7170
,0000 -1,4317 50,5059

```
5,7237 -1,4317 48,2947
-5,7237 ,0000 50,8748
,0000 ,0000 49,7968
5,7237 ,0000 48,7187
-5,7237 1,4317 49,0326
,0000 1,4317 49,0876
5,7237 1,4317 49,1427
```

END DATA.

GRAPH/SCATTERPLOT=

RatingG WITH SRLB BY NAICS1 .

Level of confidence for all confidence intervals in output: 95,0000

NOTE: The following variables were mean centered prior to analysis: NAICS1 RatingG