Model Proposal to Reach Inclusive ESG Ratings: Search for True Socially Responsible Behavior

Abstract

The relationship between corporate social responsibility and financial performance has been analyzed for decades. However, it is still not possible to conclude what kind of relationship links both variables. In this study, we propose a model capable of reconciling the divergent results between previous studies. This model divides the corporate social performance of the company into two components: one systematic and one idiosyncratic. The systematic component is obtained from the determinants of corporate social responsibility suggested by previous literature, while the idiosyncratic, which is an inclusive indicator that values each company according to its capabilities, shows the "true" socially responsible behavior of the company. Our empirical analysis shows that the influence of corporate social performance on financial performance is inconclusive, as suggested by previous literature. However, we find that the systematic (idiosyncratic) component has a positive (negative) effect on financial performance. The results of this research state that companies with a high idiosyncratic component must be the main beneficiaries of socially responsible funds.

Keywords: corporate social performance (CSP); corporate social responsibility (CSR); corporate sustainability; ESG ratings; ESG ratings split; socially responsible investment (SRI); true socially responsible behavior.

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1. Introduction

It is still unclear whether the relationship between corporate social performance (CSP) and corporate financial performance (CFP) exist, and if so, whether it is positive, negative or even curvilinear (see e.g. Waddock & Graves, 1997; Lu et al., 2014; Nuber et al., 2020). Literature reviews based on the financial performance of companies (see, Hussain et al., 2018), on performance of socially responsible equity portfolios (see, Badía et al., 2020) and on performance of socially responsible indices (see, Cunha et al., 2020) confirm the inconclusive relationship between CSP and CFP. Some authors criticize further analysis of the relationship between CSP and CFP (see, Barnett et al., 2020), however, as opposed of previous literature, we do not try to provider new evidence but to offer an explanation of the contradictory findings of previous literature. In this study, as other scholars, the environmental, social and governance ratings (ESG) are used to measure CSP (see e.g., Scholtens, 2008; Lahouel et al., 2020).

ESG ratings aim to provide accurate information about the socially responsible behavior of companies to sustainable/socially responsible (SR) investors (Chatterji et al., 2009). However, there is no consensus on the definition of social responsibility (see e.g., Votaw, 1972; Montiel, 2008; Ashrafi et al., 2018). The well-known study of Garriga and Melé (2004) classifies the main corporate social responsibility (CSR) approaches in four theories: instrumental, political, integrative and ethical. Therefore, one may wonder what type of CSP is measuring the ESG ratings. Given that there is not a single meaning of CSR, there should not be a single meaning of CSP. Therefore, we split in yearly basis the CSP into Systematic Social Performance (SSP) and into Idiosyncratic Social Performance (ISP).

Based on Garriga and Melé (2004), we argue that the SSP is explained by instrumental, political and integrative theories whereas ISP is explained by ethical theories. According to instrumental theories, corporations should turn social problems into business opportunities and economic benefits (Drucker, 1984). Political theories are focused on interactions and connections between business and society and on the power and the position of business and its inherent responsibility. Finally, integrative theories argue that corporations should satisfy social demands. Under these three theories, the CSR behavior of the company is explained by external factors. Therefore, we argue that SSP is the level of CSR that the company must exhibit considering the external factors

that the literature suggests as determinants of CSR (see e.g., McWilliams and Siegel, 2001; Artiach, et al., 2010; Krüger, 2015). On the other hand, ethical theories of CSR are focused on the business behavior based on principles that express the right thing to do. According to Freeman and Phillips (2002, p. 336), the responsibility thesis states that "the basis for ethics or the moral point of view is that most people, most of the time, take or want to take responsibility for the effects of their actions on others". Hence, ISP is the level of CSR related to the company virtuous behavior caused by internal characteristics independent of outside forces (independent of CSR determinants).

Similar to other studies in the literature, we used a two-regression stage approach (see e.g., Lys et al., 2015; Naughton et al., 2019). First, we obtain the SSP and the ISP and after we analyze their influence on CFP. The first regression estimates the SSP as the CSP that the company should display according to the CSR determinants suggested by previous literature. The difference between CSP and SSP is the error term and it represents the true socially responsible behavior of the company (ISP). We obtain both measures (SSP and ISP) for each ESG pillar and for the overall score on a yearly basis from 2010 to 2019 for each company in the Refinitiv database. In contrast of other studies, we can ensure that we analyze all companies that are and were covered by Refintiv without survivorship bias.

We argue that the ISP, not being influenced by the determinants of CSR, is an important indicator for researchers, SR investors and financial regulators, even more with the entry into force of the regulation 2019/2088 of the European parliament on sustainability-related disclosures in the financial services sector. For example, Drempetic et al. (2020) criticize the method used by ESG providers to score companies because they give an advantage to large firms while not providing SR investors the CSP information needed to make the correct decisions based on their beliefs. However, size is only one of the CSR determinants suggested by the literature. Some studies show that European countries get a higher score than other countries or regions (see e.g., Liang & Renneboog, 2017; Auer, 2018). Whether country and size were the only determinants of CSR the definition of Best-in-Class provided by EUROSIF (2018) could be rephrased as the

strategy that allows investors to pick big European companies in a particular industrial sector.[1]

More inclusive CSR measures are needed to avoid the exclusion of certain companies due to their country or size from SR investment. For that reason, ISP is essential because it is an inclusive indicator that values each company according to its capabilities.

Our results show that the CSP has negative, positive and neutral influence in the CFP depending on the proxies used for the control variables and depending on the blocking factors used to control for the unobserved heterogeneity. However, we find a positive influence of the SSP in the CFP and a negative influence of the ISP in the CFP regardless of the control variables and the blocking factors considered. The different influence on CFP of the two components of the CSP (the ISP and the SSP) explains the mixed results of previous literature. Hence, our study provides a theoretical framework that explains the contradictory results throughout literature and offers new horizons beyond the recurrent studies that only analyze the relation between CSP and CFP.

These findings show that companies with a higher level of CSP than expected reduce their financial performance by the additional commitment. Similarly to SR investors, who are willing to sacrifice returns to invest according to their principles (see e.g., Borgers & Pownall, 2014; Gutsche & Ziegler, 2019), some companies are willing to behave virtuously even whether it means lowering the CFP. Whether the expression so often used "do well by doing good" were true, what rational company would not be good. Being good, at least in the sense of this study, has a cost. Therefore, we believe that companies with positive ISP should be rewarded by SR flows.

The paper is organized as follows. Section 2 reviews the determinants of CSR and introduce the hypotheses of the paper, Section 3 describes the data, Section 4 describes the methodology, Section 5 explains the empirical results and Section 6 concludes.

[1] EUROSIF (2018) defines Best-in-Class "as the strategy that allows investors to pick those companies that have the best ESG score in a particular industrial sector".

2. Determinants of CSR and Hypotheses

According to the literature, the CSR engagement of companies depends on several determinants. McWilliams and Siegel (2001) establish that the firms' level of CSR will depend on its size, level of diversification, research and development, advertising, government sales, consumer income, labor market conditions, and stage in the industry life cycle. Some authors consider the CSR as a marketing instrument (Varadarajan & Menon, 1988; Maignan & Ferrell, 2001; Rahman et al., 2017), as an instrument to improve corporate reputation (Brammer & Pavelin, 2006; Lai et al., 2010) or as a method to create a competitive advantage (Porter & Kramer, 2002). The regulation, the strategic policies and the legal origin of countries are also suggested as important determinants of the CSR (see Di Giuli & Kostovetsky, 2014; Demirbag et al., 2017; Liang & Renneboog, 2017). Hence, we wonder whether the ESG scores capture the company's level of CSR or the marketing activities, the corporate reputation, the advertisement expenses, the philanthropy expenses, the company size, the type of industry, the strategic policies of certain countries, etc. The part of the ESG scores explained by the determinants of CSR, what we call SSP, prevents to observe the true socially responsible behavior of the company.

The model used to capture the SSP and the ISP, is inspired by the "Iron Law of Responsibility" of Davis (1960) which held that "social responsibilities of businessmen need to be commensurate with their social power". ESG providers apply the same criteria to calculate the CSP of a company but in a second step, this score must be "commensurate". In our opinion, a large Northern European company with high marketing expenses that gets the same score that a small South American company should not get the same valuation by society because the virtuous behavior of the South American company is larger. The true SR behavior of a company should not be related with the size, with the marketing expenses, with the geographic area, with the corporate reputation, etc. For that reason, the model we propose in section 4 aims at analyzing the true SR behavior of the company (considering a more commensurate perspective of CSP).

One of the most established measure of corporate reputation is Fortune World's Most Admired Companies (Chun, 2005; Brammer & Pavelin, 2006). According to Fortune website, the methodology applied to obtain corporate reputation is based on surveys to executives, directors, and analysts but because of weak response rates, scores

are not published for all industries. Moreover, some attributes used to measure the corporate reputation, such as quality of product or talent development, overlap with CSR issues (see, Chun,2005). On the other hand, some CSR determinants are not available for all companies; Servaes and Tamayo (2013) underline that the advertising expenditures were missing for more than 50% of the firms on Compustat. Due to the problems of missing data and the correlation of certain CSR determinants, in this research, we focus on country, industry and size of the company as CSR determinants.

The use of the country as a CSR determinant is justified due to the differences among the ESG scores of companies from different countries as documented by the statistics offered by Ferrel et al. (2016) or in the findings of Demirbag et al. (2017). We assume that this heterogeneity among countries is due to some determinants of CSR as the labor market conditions and the country regulation about ESG aspects. There are also differences between the ESG score of different industries (see Auer, 2018). Griffin & Mahon (1997, p. 10) state, “Industries exhibit special uniqueness in that the internal competencies or external pressures inherent in the industry create a "specialization" of social interests”. Hence, we assume that the visibility, the consumer awareness or the advertisement intensity tend to be more similar inside the same industry. Finally, we also consider the influence of company size. The relation between the company size and the CSP is easily visible in the empirical literature. Table 1 provides an extensive overview of the empirical studies that confirm this relation. Most of these studies were not interested in studying the relation between the size and the CSP but their results confirm the relation. The existence of this relationship pushed Orlitzky (2001) to make a meta-analysis to test whether the real determinant of the relationship of CSP and CFP was the firm size, but he concluded that the covariation between the CSP and the CFP was only partially explained by the size factor.

The idea that large firms engage in more CSR activities and the idea that large firms should exhibit higher CSP than small firms is well extended in the literature. First, large companies have more (slack) resources to deal with sustainability issues than small firms (Hörisch et al., 2015). Second, large firms tend to be more visible, and therefore, they are more likely to be more SR (Udayasankar, 2008). This visibility of large firms brings greater pressures to invest more in environmentally friendly technologies and to adhere to an appropriate level of CSR (Etzion, 2007; Clarkson et al., 2011). Finally, CSR activities lead to fixed costs that are less important for large corporations (Ziegler &

Schröder, 2010). Thus, previous literature often uses an accounting variables, as total assets or net sales, to measure the company size (see e.g., Lys et al., 2015; Minutolo et al., 2019; Nuber et al., 2020). However~~, as opposed of previous studies~~, we argue that the most suitable measure to capture economic slack, visibility and the possibility of meeting fixed is the market value of the company.

It is a fact that previous literature assumes that large companies get higher scores than small ones. However, the higher score is due to the systematic part (SSP) and not because large companies are more virtuous than small ones. The size does not influence the idiosyncratic social behavior of the company (ISP). Therefore, the differentiation between CSP, SSP and ISP is essential in order to explain the relationship between CSR engagement and CFP.

(Please, Insert Table 1, around here)

Previous studies show the inconclusive relationship between CSP and CFP (see e.g., van Beurden & Gössling, 2008; Lu et al., 2014). Our split of CSP into SSP and ISP may explain the contradictory results of previous studies, as the neutral, positive or negative relationship between CSR engagement and CFP could depend on the type of CSR measure analyzed: CSP, SSP or ISP.

Hypothesis 1. The CSP level of a company positively influences its CFP.

The meta-analysis studies show that the number of studies that report a positive effect of CSP on CFP is greater than those that find a negative influence (see e.g. Orlitzky et al. 2003; Margolis et al. 2009; Endrikat et al. 2014). Thus, it is not surprising, that these meta-analysis studies tend to conclude that CSP has a weak positive influence on CFP. This is because, to a large extent, the reason why companies engage in CSR initiatives is explained by instrumental theories (maximizing shareholder value), political theories (position in society) and integrative theories (satisfy social demands), i.e., what we call SSP. These external factors that explain SSP are the same for all companies, as companies seek to create value with their activity, the SSP must contribute to the creation of CFP.

Hypothesis 2. The SSP level of a company positively influences its CFP

According to Friedman (1970), the social responsibility of business is to increase its profits. However, its shareholder theory holds that a firm's main responsibility is to its shareholders. Then, what happens with SR shareholders and its billions of dollars

allocated in SR products?[2] As Renneboog et al. (2008) underline, SR investors care less about financial performance since they derive non-financial utility from investing in companies meeting high standards of CSR. Furthermore, some studies suggest that SR investors are willing to sacrifice returns for invest in SR products (Borgers & Pownall, 2014; Gutsche & Ziegler, 2019). As the main responsibility of the firm is to its shareholders, the companies that receive SR flows must comply with its SR shareholders, even though this implies a decrease in the profits. Under an ethical conception of CSR, SR firms search the right thing to do and internalize the negative externalities of their activities. This causes, at least in the short term, that these companies engage in higher costs. Hence, the greater the ISP, the lower the CFP. Therefore, our hypothesis 3 is as follows:

Hypothesis 3. The ISP of a company negatively influences its CFP

It is important to detect those companies with a true SR behavior (with high ISP) to satisfy the expectations of SR investors which will conduct their investment flows to these companies.

3. Data

We use the ESG data from Refinitiv database that replaced the ASSET4® Equal Weighted Ratings to analyze the period from 2010 to 2019. This database has been used in several studies to examine similar purposes related to CSP (e.g., Miras-Rodríguez, et al., 2015; Ortas et al., 2015; Escrig-Olmedo et al., 2017; Rajesh & Rajendran, 2020). In April of 2020, Refinitiv changed its methodology. Before this change, all categories analyzed to obtain each ESG pillar score are weighted identically among industries. The assumption that "one size fits all" is a debatable hypothesis as indicated by Capelle-Blancard & Petit (2015). That is, the environmental pillar should be more important in Oil & Gas industry group than in Banking services industry group. Now, each weight is different depending on each industry group.

To obtain the environmental and the social pillar scores, Refinitiv compares companies in the same industry group. The industry group is based on the Refinitiv Business Classification (before Thomson Reuters Business Classification). In this study,

[2] $12 trillion in the United States (US SIF, 2018) and to €11 trillion in Europe (EUROSIF, 2018) are under SR investment.

we use the same classification to determine the industry of the company. The governance pillar is calculated against country; hence, we use the domicile of the geographical classification assigned by Refinitiv to determine the country. The ESG scores reported by Refinitiv are updated once a year and in exceptional cases, the data is refreshed more frequently. Hence, in order to capture any change in the scores we obtain the overall and each pillar scores in a monthly frequency. Apart from country and industry, the other variable needed to obtain the SSP and the ISP is the company size. We use the daily series of market value in USD as proxy of the company size because we analyze companies from different geographical areas.[3] We use the market value because reflects all available information, moreover accounting proxies, although easier to handle, are not the most appropriate measure to capture economic slack, visibility and the possibility of meeting fixed costs without affecting the income statement.

Given that the model proposed in next section is estimated on a yearly basis, we calculate the annual average of the market value and the annual average of overall/ environmental/social/governance score. Table 2 offers some descriptive statistics about the scores and the market value of the analyzed companies by year. As this table shows, we analyze 9,551 companies from 66 different countries, a total of 53,660 yearly observations. In addition, in contrast of other studies, we can ensure that our sample is totally free of survivor bias.[4]

(Please, Insert Table 2, around here)

Once we obtain SSP and ISP, we analyze the relationship between CSP and CFP, between SSP and CFP and between ISP and CFP. We use two proxies of the CFP, the return on assets (ROA) and the return on equity (ROE), and different control variables such as log of net sales, log of total assets, total liabilities to equity, long debt to assets and capital expenditures. Net sales and total assets are calculated in USD using the daily average of the exchange rate of each currency each fiscal year to homogenize the information of each company. Table 3 describes the variables used in this research obtained from Refinitiv.

[3] We compute the market value as the sum of the market value of the listed shares when one company has different emissions.

[4] From the Refintiv platform it is not possible to find the IDs of companies that were covered by the provider in the past but not now. Therefore, we contacted Refintiv and they provided us with the IDs of these companies.

(Please, Insert Table 3, around here)

4. Methodology

4.1 Model for splitting the CSP into the SSP and the ISP

To obtain the SSP and the ISP, we propose a regression model where the predicted value of the regression is the SSP, i.e., the part of the CSP explained by the CSR determinants and the error term is the ISP, i.e., the true socially responsible behavior of the company caused by internal factors. Figure 1 shows a hypothetical example about the ISP and SSP of a set of companies for a hypothetical year assuming that there was only one CSR determinant. Companies with a higher CSP than that suggested by SSP (CSR determinant) would have a positive ISP.

(Please, Insert Figure 1, around here)

In social sciences, data is grouped to account for group-level variation; these group-level variations are commonly referred to as blocking factors. Blocking variables, such as industry or country, can have specific effects in the intercept or in the slope of the regressions. These effects can be introduced in the model as fixed effects or as random effects but current advice on which approach should be preferred is controversial (Clark & Linzer, 2015). Specifically, the fixed effects remove all the heterogeneity between groups introducing dummies but no inferences can be made about the higher-level variance (see, Schurer & Yong 2012; Bell & Jones 2015). Random effects model this heterogeneity providing a richer description of the relationship under scrutiny (Subramanian et al., 2009). Moreover, the random effects save many degrees of freedom since they only estimate the standard deviation of the distribution of each blocking factor. However, criticisms of random effects appear when the assumption of no correlation between the covariates and the blocking factors is violated. The Hausman specification test (Hausman, 1978) is often used to select between fixed or random effects. Whether there is no difference between the estimated regressors of both approaches, random effects will be selected since it is more efficient than fixed effects. However, the simulations of Clark and Linzer (2015) reveal that the Hausman test is not a reliable tool.

Bell and Jones (2015) criticize the use of the fixed effects approach as the default method in social sciences. However, it should be noted that in the topics related to CSR,

the random effects approach is applied (see e.g. Liang & Renneboog, 2017; Drempetic et al., 2020). We argue that for the split of the CSP into the SSP and the ISP, random effects should be used because this method allows modeling the variation between groups. To ensure the mathematical validity of this choice, we use a penalized model selection criterion. According to Kuha (2004), the two most used penalized model selection criteria are the Bayesian information criterion (BIC) and Akaike's information criterion (AIC). However, as Vrieze (2012) demonstrates, BIC is better to select the model that originates the data. When it is necessary to introduce several blocking variables, the fixed effects model became parsimonious, hence, in such cases, is better to use BIC in order to penalize parsimony. Equation 1 (fixed effects) and equation 2 (random effects) are two different forms of implementing the model proposed in this section to split the level of CSP into the systematic and the idiosyncratic part.

$$\mathrm{CSP}_{i,t}=(\beta_{0,t}+\sum_{nj=1}^{nJ-1} b_{0nj,t}+\ldots+\sum_{Nj=1}^{NJ-1} b_{0Nj,t})+(\beta_{1,t}+\sum_{nj=1}^{nJ-1} b_{1nj,t}+\ldots+\sum_{Nj=1}^{NJ-1} b_{1Nj,t})X_{1i,t}+\ldots+$$
$$(\beta_{k,t}+\sum_{nj=1}^{nJ-1} b_{knj,t}+\ldots+\sum_{Nj=1}^{NJ-1} b_{kNj,t})X_{ki,t}+\varepsilon_{i,t} \quad \textbf{(1)}$$
$$\varepsilon_{i,t} \sim N(0,\sigma^2)$$

$$\mathrm{CSP}_{in\ldots N,t}=(\beta_{0,t}+b_{0n,t}+\ldots+b_{0N,t})+(\beta_{1,t}+b_{1n,t}+\ldots+b_{1N,t})X_{1i,t}+\ldots+(\beta_{k,t}+b_{kn,t}+\ldots+b_{kN,t})X_{ki,t}+\varepsilon_{in\ldots N,t}$$
$$\varepsilon_{in\ldots N,t} \sim N(0,\sigma^2)$$
$$b_{0n,t}\ldots b_{0N,t} \sim N(0,\tau_{0n}^2)\ldots N(0,\tau_{0N}^2) \quad \textbf{(2)}$$
$$b_{1n,t}\ldots b_{1N,t} \sim N(0,\tau_{1n}^2)\ldots N(0,\tau_{1N}^2)$$
$$b_{kn,t}\ldots b_{kN,t} \sim N(0,\tau_{kn}^2)\ldots N(0,\tau_{kN}^2)$$

Where: *CSP* is the overall ESG score, the environmental score, the social score, and the governance score, respectively; *n* to *N* are the CSR categorical determinants such as industry or country introduced as fixed or random effects; X_1 to X_k are the CSR quantitative or ordinal determinants such as size, corporate reputation or advertisement expenses; b_1 to b_n are introduced to give flexibility to the model since the intensity of the

relation (slope) between *CSP* and *X* may differ between categorical variables; *t* refers to the specific year in which the regression is performed.

The parameters of the regressions are estimated on a yearly basis. The yearly estimation of the model is in line with the ideas of Sethi (1975) & Preston and Post (1981): a specific action is more or less socially responsible depending on the values of a society at a given time and space. Therefore, the CSR determinants should be framed in a reasonable time horizon such as annual. This is also aligned with the methodology applied by agency ratings where ESG scores are based on the relative position of a company in a given year. Hence, it is necessary to obtain the relative position of each company in each year for each CSR determinant (X_1 to X_k) using the percentile rank. In addition, the use of percentile ranks allows comparing the estimated parameters of the regression in different years.

Although we are aware of other firm characteristics suggested as determinants of the CSR (see discussion in Section 2), in this research, we focus on country, industry and size. Thus, equation 3 (fixed effects) and equation 4 (random effects) specify the model proposed in this section. As previously explained, we use the BIC criterion to select the model.

$$\mathrm{CSP}_{i,t}=(\beta_{0,t}+\sum_{c=1}^{C-1} b_{0c,t}+\sum_{j=1}^{J-1} b_{0j,t})+(\beta_{1,t})\mathrm{MV}_{i,t}+\varepsilon_{i,t} \qquad \textbf{(3)}$$

$$\varepsilon_{i,t} \sim N(0,\sigma^2)$$

$$\begin{aligned}\mathrm{CSP}_{icj,t}&=(\beta_{0,t}+b_{0c,t}+b_{0j,t})+(\beta_{1,t})MV_{i,t}+\varepsilon_{icj,t}\\ \varepsilon_{icj,t}&\sim \mathrm{N}(0,\sigma^2)\\ b_{0c,t}&\sim \mathrm{N}\left(0,\tau_{0c}^2\right)\\ b_{0j,t}&\sim \mathrm{N}\left(0,\tau_{0j}^2\right)\end{aligned} \qquad \textbf{(4)}$$

Where *CSP* denotes each score examined in this study (overall, environmental, social and, governance, respectively), *i* denotes the company, *c* the country, *j* the industry, *t* refers to the specific year in which the regression is performed and goes from year 2010 to year 2019, *MV* denotes the percentile rank of the market value between 0 and 100. One could question whether it would be relevant to give more flexibility to the model by

allowing that the intensity of the relationship between the ESG score and the size (β1) vary across country or industry. However, we defend that this flexibility would not be theoretically justified since the level of CSP that the company must exhibit, because of its size, must be the same regardless of the country or industry.

4.2 Hypothesis testing

The objective of the paper is to demonstrate that the results of the influence of the SSP and the ISP on the CFP are robust regardless of the model complexity while the results of the influence of the CSP on the CFP are not robust. To examine the relationship between CSP/ SSP/ ISP and CFP, we estimate equations 5 and 6. These equations are similar to that used in previous literature (see e.g., Ziegler, 2012; Hussain et al., 2018).

$$CFP_{it} = \beta_0 + \beta_1 Score_{it} + \beta_2 log(Sales)_{it} + \beta_3 \frac{Total\ liabities_{it}}{Assets_{it}} + \beta_4 \frac{Capital\ expenditures_{it}}{Assets_{it}} + Blocking\ Variables + \varepsilon_{it} \quad \textbf{(5)}$$

$$CFP_{it} = \beta_0 + \beta_1 Score_{it} + \beta_2 log(Assets)_{it} + \beta_3 \frac{Total\ liabities_{it}}{Equity_{it}} + \beta_4 \frac{Capital\ expenditures_{it}}{Assets_{it}} + Blocking\ Variables + \varepsilon_{it} \quad \textbf{(6)}$$

Where: CFP_{it} is measured by the ROA and the ROE of company i in year t, respectively; $Score_{it}$ refers to each one of the different scores analyzed for each company (overall, environmental, social, governance) and each one of its variants, the CSP, the SSP, and the ISP. Log net sales and log total assets are proxies of the firm size; total liabilities to assets and total liabilities to equity are proxies of the company capital structure; capital expenditures to assets is a proxy of the company capital intensity. Blocking variables are included to control for the unobservable heterogeneity that can produce strong differences between the CFP of different firms, years, countries or industries. We perform equation 5 and 6 introducing none blocking variable, introducing only year, year + industry group, year + industry group + country, year + industry group + country + firm.

Our control variables are in accordance with previous literature. Lu et al., (2014) show that the most common control variables to study the relationship between the CSP and the CFP are size and capital structure. Capital structure, often measured as leverage

or equity-debt ratio, is used to measure risk. Ziegler (2012) uses log total assets as measure of size, debt to total assets as indicator of firm risk and the ratio of capital expenditures to net sales as indicator of capital intensity. Hussain et al. (2018) use log of total assets of the firm as measure of size, ratio of debt to equity as indicator of capital structure and ratio of capital expenditure to total assets as indicator of capital intensity of the firm. Minutolo et al. (2018) uses sales and debt to assets as control variables.

Similarity, our blocking variables to control for unobserved heterogeneity also match with previous literature. Ziegler (2012) control by firm, year, sector and country unobserved heterogeneity using random effects and fixed effects while Wagner (2010) use year and industry fixed effects.

We need to test how our variables of interest (CSP, SSP, and ISP) affect the CFP. Note that we do not propose a model to explain the CFP of a company. Therefore, the fixed effects approach is the most suitable. Specifically, the model that introduces fixed effects by year, industry, country and company. In order to avoid spurious results, for each score, equation 5 and 6 are applied with two different dependent variables (ROA and ROE) and different blocking factors.

~~In order~~ In addition, to ensure that the causality goes from the CSR to the CFP and not vice versa, we merge the ESG and the accounting data following the same method used by Servaes and Tamayo (2013). We merge the variables for the same year whether the fiscal year ends in December. We merge the ESG data of a given year with the accounting variables of the following year for those firms with a fiscal year-end prior to December.

It is common knowledge that outliers may distort the relationship between the dependent variable and the regressors. To deal with this problem it is common to remove or to winsorize outliers (see e.g. Hooks & van Staden, 2011; Cheong et al., 2017; Drempetic et al., 2020). Some authors winsorize their variables but the differences among economic sector or industry groups are not considered. Table A1 in the appendix shows the information about the winsorized variables: ROA, ROE, total liabilities to assets, total liabilities to equity and capital expenditures to assets. We winsorize at 2.5th and 97.5th percentiles considering the differences between economic sectors. Whether the economic sector is not considered, a major bias is committed because the winsorized values will be concentrated in some economic sectors.

Table A2 in the appendix provides some statistics about the variables used in equation 5 and 6.[5] We test the multicollinearity among our regressors by applying the variance inflation factor (VIF). Table 4 provides the VIF of each regressor of equation 5 and 6 for each score analyzed. According to Table 4, there is not multicollinearity in any of our regressions.

(Please, Insert Table 4, around here)

5. Results

In this section, first, we obtain the SSP and ISP on yearly basis for each score (overall, environmental, social and governance). After that we analyze the influence of our variables of interest (CSP, SSP, ISP) on CFP. Specifically, we analyze how the coefficients and significance of our variables of interest vary depending on the CFP variable (ROA, ROE), on the control variables (size, capital structure and capital intensity) and on the blocking factors considered to control for the unobserved heterogeneity. These blocking factors are introduce as fixed effects, although not present in the manuscript, using random effects, the conclusions would have not change.

5.1 Model selection to split the CSP into the SSP and the ISP

Table 5 shows the results of estimating equation 3 (fixed effects) and equation 4 (random effects) and the results of the BIC criterion. The table also shows the R^2 for the fixed effects and, based on the work of Nakagawa and Schielzeth (2013), the conditional R^2 for the random effects model. The increase in the value of the intercept in the random effects model denotes that ESG scores have improved, in average, for each country and industry. According to the BIC criteria, the random effects model is better than fixed effect. Therefore, we obtain the SSP and the ISP of each score for each company on a yearly basis from 2010 to 2019 following equation 4.

(Please, Insert Table 5, around here)

[5] While 53,660 yearly observations were used to obtain the SSP and the ISP, 48,675 yearly observations are used to perform equation 5 and 6. This difference is explained by the fact that a company is excluded from the analysis when the data supplier does not offer all the accounting variables or ratios described in Table A2.

The goodness of the fit of the model proposed in Section 4.1 is good for the overall score, the environment pillar and the social pillar. However, the fit is deficient for the governance pillar, but this is consistent with previous literature. Our model is based on the determinants of the CSR and the governance pillar overlaps with traditional corporate governance issues, which are materially different from the CSR issues (Liang & Renneboog, 2017). While some authors remove the influence of the governance pillar in their analysis (see e.g., Hong et al., 2012; Krüger, 2015), we prefer to analyze the three pillars of the ESG score because is a standard adopted by all ESG rating industry.

In brief, by using equation 4 the influence of the determinants of the CSR is removed from the CSP and we obtain the ISP (error term of the regression). Hence, the higher the ISP, the higher the true CSR behavior of the company taking into account its capacities and possibilities in each determinant of CSR. This indicator provides us with a comparable score among companies of different size belonging to different countries and different industries.

5.2 Influence of the CSP on the CFP (Hypothesis 1)

Table 6 shows the results of the influence of the CSP on the CFP for each measure of CSP (overall, environmental, social and governance). The regressions that only control for year and industry heterogeneity offer a positive influence of the CSP on the CFP regardless of the control variables. Instead, when we introduce the country effects, the results are assorted depending on the control variables used. The regressions that control for firm unobserved heterogeneity mainly indicates absence of relationship. Hence, similarly to previous literature, our results show that the influence of the CSP on the CFP is inconclusive. Previous literature does not use the same blocking variables to control for unobserved heterogeneity. Our results suggest that this omission may partially explains the contradictory results among the literature.

(Please, Insert Table 6, around here)

5.3 Influence of the SSP on the CFP (Hypothesis 2)

Table 7 shows the results of the influence of the SSP on the CFP for each measure of SSP (overall, environmental, social and governance). We can observe that the influence is positive and statistically significant regardless of the control variables, the blocking variables and the type of effects considered. Therefore, we confirm our hypothesis 2 of a

positive and robustness relation between SSP and CFP. Thus, the CSP explained by the determinants of the CSR positively influences the CFP. This result would be in line with some studies that suggest that some variables, such as advertising intensity or corporate reputation, have a moderating role between CSP and CFP (see e.g., Wagner, 2010; Bai & Chang, 2015; Rahman et al., 2017; Pham & Tran; 2020). These studies show that the consideration of these variables provokes the positive relation between CSP and CFP. Coincidentally, the variables suggested by these studies are determinants of CSR. Hence, these studies that find a positive relationship may be capturing what we have defined as SSP.

(Please, Insert Table 7, around here)

5.4 Influences of the ISP on the CFP (Hypothesis 3)

Table 8 shows the results of the influence of the ISP on the CFP for each measure of ISP (overall, environmental, social and governance). We can observe that the influence is negative and statistically significant regardless of the control variables, the blocking variables and the type of effects considered for the overall score, environment pillar and social pillar. This negative influence is not so robust for the governance pillar. These results would be in line with Krüger (2015) that underlines that corporate governance does not necessarily require monetary payments whereas improving the welfare of other stakeholders usually requires expenditures. Our findings show that the CSR engagement explained by ethical theories negatively influence the CFP. Servaes and Tamayo (2013) conclude that CSR activities have a negligible or negative impact on firm value for firms with low advertising intensity. These authors would be capturing companies with high ISP because those companies that do well in terms of the CSP without spending on marketing activities are potential candidates for a positive ISP.

(Please, Insert Table 8, around here)

6. Conclusions:

Traditionally, the degree of CSP of companies is quantified by ESG ratings or similar classifications. However, this fails to capture the different components of CSR engagement. In this article we propose a model that splits the CSP of companies into SSP and ISP. Specifically, the SSP measures the level of CSP that companies should display

according to the determinants of CSR suggested by previous literature while the ISP is the difference between CSP and SSP. A positive value of ISP (CSP higher than SSP) indicates that the company has an additional CSR commitment than other companies in a similar situation. For that reason, we refer to the ISP as the true socially responsible behavior of company.

This article points out that these two components (SSP and ISP), apart from being important for SR investors, explain the contradictory results of the previous literature analyzing the relationship between CSP and CFP. Our results, as previous literature, show that the influence of CSP (ESG scores) on CFP is inconclusive. Specifically, the influence of CSP on CFP could change depending on the proxy used to measure CFP, the control variables and the blocking factors considered. However, we obtain robust evidence that the SSP positively influences CFP, while ISP has a negative influence on CFP.

These results suggest that there are companies willing to achieve an additional CSR commitment independently of the financial performance. Companies are rationale agents that seek to create value for their shareholders, whether "doing well by doing good" were true, what rationale company would not be "good". Instead, our results show the opposite "doing wrongly by doing good", which also questions the rationality of companies. However, we argue that this behaviour is totally rationale. The companies that want to satisfy the non-financial utility of their SR shareholders will have to sacrifice their financial performance. This in line with the expectations of SR holders, who are willing to sacrifice profitability for invest according to their beliefs.

Thus, it is important to identify those companies that exhibit and additional CSR commitment. Otherwise, SR investors will allocate their resources in large companies of European countries or in companies with high marketing intensity, since these are the companies that usually obtain the highest scores in ESG ratings. Therefore, some virtuous companies making CSR efforts will not be rewarded by SR investment because of its low SSP. Whether the companies are not valued according to their capabilities, the loans and the subsidies that governments and central banks allocate to SR investment will discriminate, for example, small companies. Therefore, our study has practical implications because the model proposed is necessary to achieve inclusive ESG ratings.

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Table 1. Literature review about the relationship between CSR ratings and company size.

This table shows some studies that find a positive relationship between a CSR measure and the company size. The first column shows the authorship of the study, the second column shows the variable used as proxy of size, the third column gives a description of the type of relation between the ESG ratings and the size, the fourth column shows the data provider of the ESG ratings and the last column shows the country analyzed.

Authors	Size proxy	Description	CSR Source	Scope
Stanwick & Stanwick (1998)	Annual sales	The size of the organization impact on corporate social performance	Fortune's Corporate Reputation Index	United States
Nakamura & Takahashi (2001)	Number of employees	Significant positive relation in a probit regression that analyzes the determinants of ISO 14001 certification.	-	Japan
Bauer et al. (2005)	Market value	The SMB factor risk of the Fama-French model is lower in high-rated SRI funds than in conventional funds.	-	Germany, UK, United States
Surroca & Tribó (2008)	Fixed assets	Significant positive relation in a matrix correlation between size and corporate social performance and Workers' satisfaction.	KLD, SiRi PRO	World
Lee & Faff (2009)	Market value	Their SMB factor demonstrates that leading CSP firms exhibit a significant large cap bias relative to lagging CSP firms.	Dow Jones Sustainability Index	World
Ziegler & Schröder (2010)	Log sales	Significant positive relation in a probit model between size and inclusion in DJSI World and DJSI Stoxx.	Dow Jones Sustainability Index	DJSI World and DJSI Stoxx
Humphrey et al. (2012)	Market value	The SMB factor risk of the Fama-French model is lower and statistically different in high-rated corporate social performance portfolio than in low-rated portfolio.	DJI ESG Scores	UK
Halbritter & Dorfleitner (2015)	Market value	The SMB factor risk of the Fama-French model is lower and statistically different in high-rated corporate social performance portfolio than in low-rated portfolio.	KLD, Bloomberg, ASSET4	United States
Ferrell et al. (2016)	Log of total assets	Significant positive relation of size in a generalize least squares regression that analyse the effect of shareholders' ownership on CSR.	MSCI, VIGEO, ASSET4	World
Gómez-Bezares et al. (2017)	Fixed assets	The mean and median of total assets are statistically higher in sustainable companies than in unsustainable companies.	Content analysis on annual reports	British FTSE 350 firms
Liang & Renneboog (2017)	Logarithm of total assets of the company	Significant and positive relation of size in different generalized linear models that analyzes the determinants of CSR ratings.	MSCI	World
Hasan et al. (2018)	logarithm book value of firm total assets	Significant positive relation in matrix correlation between size and corporate governance and corporate social performance measured as stake holder management.	MSCI ESG KLD STATS	United States manufacturing firms
Joliet & Titova (2018)	Market value	New stocks in passive SRI funds, which tracked an index, does not seem to be associated with ESG performance, but by size change.	Sustainalytics	United States
Yen et al. (2019)	Market value	The SMB factor risk of the Fama-French model is lower and statistically different in high-rated ESG portfolio than in low-rated ESG portfolio.	ASSET4	Asia
Nuber et al. (2020)	Natural logarithm of total assets	Significant positive relation in matrix correlation between size and corporate sustainability performance measured as ESG scores.	Thomson Reuters	German

Table 2. Annual descriptive statistics of the ESG scores, the market value and the country and industrial groups analyzed.

This table shows some descriptive statistics of the ESG scores and the size, country and industry of the companies for each year. Column 1 reports the years of the sample period. Columns 2 to 6 show the average of the ESG scores and the market value. The last three columns show the number of countries, industrial groups and companies analyzed each year. The last row shows the average for the sample period for the overall score, each pillar score and the market value; and the total number of countries, industrial groups and companies analyzed for all sample period.

	Overall Score	**Environmental Score**	**Social Score**	**Governance Score**	**Market Value USD**	**N countries**	**N industrial groups**	**N companies**
2010	40.53	32.86	39.38	47.94	9,764	56	57	3,833
2011	40.96	33.80	39.66	48.09	10,309	56	57	3,964
2012	41.72	34.84	40.70	48.24	10,034	56	57	4,020
2013	41.73	34.57	40.88	48.26	11,246	56	57	4,134
2014	41.82	34.06	41.62	47.90	11,855	60	57	4,390
2015	41.36	31.52	42.08	47.82	10,377	62	58	5,259
2016	41.16	29.87	42.63	47.48	8,680	63	58	6,022
2017	41.85	30.82	43.47	47.72	9,703	65	58	6,558
2018	42.62	31.95	44.61	47.70	9,541	66	57	7,395
2019	43.08	32.55	45.10	47.94	8,925	66	57	8,085
Total	41.83	32.42	42.51	47.87	9,884	66	58	9,551

Table 3. Description of the variables used in the research.

This table reports a detailed description of the variables used in this research. The first column shows the name of the variable, the second column shows the code used to obtain the variable, the third column describes the variable based on the information offered by our data provider and the last column shows the frequency for which the variable is obtained.

Name	Code	Description	Freq.
ESG Score	TRESGS	An overall company score based on the self-reported information in the environmental, social and corporate governance pillars.	monthly
Environment Pillar Score	ENSCORE	Refinitiv's Environment Pillar Score is the weighted average relative rating of a company based on the reported environmental information and the resulting three environmental category scores.	monthly
Social Pillar Score	SOSCORE	Refinitiv's Social Pillar Score is the weighted average relative rating of a company based on the reported social information and the resulting four social category scores.	monthly
Governance Pillar Score	CGSCORE	Refinitiv's Governance Pillar Score is the weighted average relative rating of a company based on the reported governance information and the resulting three governance category scores.	monthly
Market Value in USD	X(MV)~U$	Is the share price multiplied by the number of ordinary shares (automatically downloaded in USD)	daily
Market Value Consolidated	X(MVC)~U$	The consolidated market value of a company in USD: Sum of the market value of the listed shares when one company has different emissions.	daily
Geographical Classification of Company	GEOG	Returns a geographical classification of company by specific two-digit alpha code.	Static
Industry Name	TR3N	Industry Group code from the Thomson Reuters Business Classification system	Static
Exchange Rate Middle	ER	Exchange rate between bid and ask rate	daily
Currency of Document	WC06099	Represents the ISO currency code which corresponds to the currency in which the company's financial statements are presented.	yearly
Date of Fiscal Year End	WC05350	Represents the year, month and day the company closes its books at the end of its fiscal period.	yearly
Return on Assets	WC08326	(Net Income – Bottom Line + ((Interest Expense on Debt-Interest Capitalized) * (1-Tax Rate))) / Average of Last Year's and Current Year's Total Assets * 100	yearly
Return on Equity	WC08301	Profitability Ratio, Annual & Interim Item: All Industries: (Net Income – Bottom Line - Preferred Dividend Requirement) / Average of Last Year's and Current Year's Common Equity * 100	yearly
Total Assets	WC02999	Represents the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.	yearly
Total Liabilities	WC03351	Represents all short and long term obligations expected to be satisfied by the company	yearly
Net Sales or Revenues	WC01001	Represents gross sales and other operating revenue less discounts, returns and allowances.	yearly
Common Equity	WC03501	Represents common shareholders' investment in a company.	yearly
Capital Expenditures (Additions to Fixed Assets)	WC04601	Represents the funds used to acquire fixed assets other than those associated with acquisitions.	yearly

Table 4. Variance inflation factor of each regressor in each regression.

This table shows the variance inflation factor (VIF) of the regressors of equation 5 and 6. The first row shows the equation for which the VIF is obtained. The second row shows the name of the regressors where score is the variable indicated in the first column.

	Equation 5				**Equation 6**			
	Score	**Log Sales**	**Liabilities to Assets**	**Capital Expen.**	**Score**	**Log Assets**	**Liabilities to Equity**	**Capital Expen.**
CSP Overall	1.168	1.195	1.111	1.039	1.129	1.271	1.205	1.069
CSP Environmental	1.235	1.283	1.100	1.043	1.193	1.352	1.210	1.073
CSP Social	1.083	1.116	1.110	1.040	1.061	1.197	1.205	1.069
CSP Governance	1.057	1.102	1.105	1.041	1.041	1.181	1.205	1.070
SSP Overall	1.260	1.304	1.101	1.040	1.258	1.412	1.206	1.069
SSP environmental	1.409	1.481	1.104	1.047	1.382	1.571	1.247	1.077
SSP Social	1.100	1.143	1.102	1.042	1.101	1.240	1.205	1.071
SSP Governance	1.295	1.319	1.109	1.047	1.296	1.437	1.205	1.079
ISP Overall	1.023	1.068	1.109	1.039	1.007	1.146	1.205	1.069
ISP Environmental	1.023	1.067	1.110	1.039	1.012	1.147	1.209	1.069
ISP Social	1.018	1.065	1.107	1.039	1.006	1.145	1.206	1.069
ISP Governance	1.006	1.062	1.101	1.039	1.001	1.142	1.205	1.069

Table 5. Model selection to obtain the SSP and the ISP.

This table shows information about the fit of equation 3 and 4. The two first columns show the score and the year for which the regression is performed. The third and fourth column show the coefficients and the significance of the intercept and percentile rank of market value under fixed effects and random effects. The fifth column show the Bayesian information criterion and sixth column the R^2 for fixed effects and the conditional R^2 for random effects. The last column shows the number of companies analyzed in each regression. *, and ** indicate statistical significance at the 5% and 1% levels, respectively.

		Intercept		Percentile Rank MV		BIC		R^2 / Cond. R^2		#
Dep. Variable	**Year**	**Fixed**	**Mixed**	**Fixed**	**Mixed**	**Fixed**	**Mixed**	**Fixed**	**Mixed**	
CSP Overall	**2010**	20.183**	19.389**	0.406**	0.396**	33,042	32,449	0.396	0.473	3,833
	2011	21.851**	20.157**	0.412**	0.400**	34,355	33,761	0.385	0.472	3,964
	2012	20.611**	22.667**	0.396**	0.383**	34,962	34,368	0.363	0.443	4,020
	2013	21.637**	22.581**	0.403**	0.392**	35,836	35,243	0.374	0.448	4,134
	2014	23.568**	22.795**	0.395**	0.387**	38,012	37,391	0.364	0.442	4,390
	2015	23.155**	23.967**	0.392**	0.386**	45,211	44,563	0.382	0.456	5,259
	2016	12.128**	23.038**	0.396**	0.392**	51,215	50,545	0.411	0.464	6,022
	2017	16.169**	24.341**	0.407**	0.402**	55,750	55,041	0.417	0.460	6,558
	2018	25.970**	25.036**	0.411**	0.407**	62,940	62,241	0.407	0.460	7,395
	2019	30.031**	25.968**	0.413**	0.409**	68,429	67,735	0.431	0.482	8,085
CSP Environmental	**2010**	8.225*	5.501*	0.525**	0.518**	35,336	34,804	0.440	0.522	3,833
	2011	7.001	7.208**	0.529**	0.522**	36,632	36,097	0.426	0.520	3,964
	2012	5.467	10.548**	0.514**	0.504**	37,287	36,751	0.407	0.498	4,020
	2013	5.155	10.877**	0.516**	0.508**	38,298	37,758	0.412	0.491	4,134
	2014	4.136	9.442**	0.523**	0.517**	40,609	40,042	0.411	0.490	4,390
	2015	6.710	10.728**	0.516**	0.512**	48,247	47,653	0.446	0.499	5,259
	2016	-6.984	10.186**	0.506**	0.504**	54,634	54,028	0.488	0.504	6,022
	2017	-1.171	11.173**	0.523**	0.522**	59,317	58,684	0.500	0.504	6,558
	2018	10.293**	11.554**	0.528**	0.526**	67,051	66,409	0.476	0.481	7,395
	2019	16.285**	12.923**	0.524**	0.522**	72,953	72,316	0.497	0.504	8,085
CSP Social	**2010**	10.877**	17.519**	0.428**	0.417**	33,852	33,272	0.408	0.491	3,833
	2011	16.298**	17.964**	0.431**	0.419**	35,173	34,590	0.398	0.493	3,964
	2012	15.229**	20.790**	0.412**	0.398**	35,833	35,244	0.377	0.461	4,020
	2013	16.675**	20.934**	0.420**	0.408**	36,796	36,208	0.384	0.463	4,134
	2014	20.434**	21.211**	0.421**	0.409**	39,085	38,467	0.376	0.467	4,390
	2015	18.593*	23.685**	0.409**	0.401**	46,610	45,961	0.371	0.472	5,259
	2016	6.675	23.581**	0.413**	0.406**	52,954	52,298	0.385	0.473	6,022
	2017	11.511**	25.346**	0.429**	0.422**	57,559	56,890	0.404	0.486	6,558
	2018	24.007**	26.148**	0.438**	0.430**	64,805	64,140	0.400	0.491	7,395
	2019	29.371**	27.000**	0.446**	0.440**	70,534	69,868	0.431	0.515	8,085
CSP Governance	**2010**	43.223**	34.119**	0.273**	0.258**	35,148	34,452	0.147	0.145	3,833
	2011	42.280**	34.167**	0.287**	0.268**	36,332	35,645	0.155	0.161	3,964
	2012	41.156**	35.404**	0.276**	0.257**	36,843	36,149	0.143	0.148	4,020
	2013	42.731**	34.946**	0.283**	0.265**	37,806	37,106	0.146	0.153	4,134
	2014	44.306**	35.947**	0.256**	0.239**	40,185	39,451	0.128	0.132	4,390
	2015	41.469**	35.173**	0.264**	0.249**	47,817	47,089	0.150	0.168	5,259
	2016	36.693**	33.246**	0.281**	0.270**	54,481	53,726	0.165	0.179	6,022
	2017	36.958**	33.800**	0.280**	0.270**	59,395	58,598	0.160	0.169	6,558
	2018	41.584**	34.543**	0.278**	0.269**	66,894	66,113	0.164	0.173	7,395
	2019	41.872**	35.099**	0.279**	0.271**	72,948	72,161	0.171	0.180	8,085

Table 6. Coefficients, significance, and standard errors for each CSP measure.

This table shows the influence of each CSP score on CFP by dependent variable, equation used, and effects considered. First and second columns show the dependent variable (CFP) and the equation used. First, second, third and fourth row show whether the model has been performed considering year, industry, country and firm effects. The intersections between these rows and columns show the coefficient, significance, and standard error of CSP in each regression. *, ** indicate statistical significance at the 5%, 1% levels, respectively.

	Year effects	**no**	**yes**	**yes**	**yes**	**yes**
	Industry Effects	**no**	**no**	**yes**	**yes**	**yes**
	Country Effects	**no**	**no**	**no**	**yes**	**yes**
	Firm Effects	**no**	**no**	**no**	**no**	**yes**
Panel A: CSP Overall						
ROA	**Eq. 5**	0.020** (0.002)	0.022** (0.002)	0.026** (0.002)	-0.025** (0.002)	-0.009** (0.003)
	Eq. 6	0.036** (0.002)	0.039** (0.002)	0.034** (0.002)	0.014** (0.002)	-0.003 (0.003)
ROE	**Eq. 5**	0.071** (0.005)	0.077** (0.005)	0.094** (0.005)	-0.014* (0.005)	-0.007 (0.009)
	Eq. 6	0.114** (0.004)	0.120** (0.004)	0.115** (0.004)	0.064** (0.005)	-0.001 (0.009)
Panel B: CSP Environmental						
ROA	**Eq. 5**	0.007** (0.001)	0.008** (0.001)	0.009** (0.001)	-0.026** (0.002)	-0.007** (0.002)
	Eq. 6	0.024** (0.001)	0.025** (0.001)	0.020** (0.001)	0.004** (0.001)	-0.001 (0.002)
ROE	**Eq. 5**	0.032** (0.003)	0.034** (0.003)	0.046** (0.003)	-0.026** (0.004)	-0.004 (0.006)
	Eq. 6	0.072** (0.003)	0.074** (0.003)	0.069** (0.003)	0.030** (0.004)	0.004 (0.006)
Panel C: CSP Social						
ROA	**Eq. 5**	0.011** (0.002)	0.013** (0.002)	0.025** (0.001)	-0.020** (0.002)	-0.005 (0.003)
	Eq. 6	0.019** (0.002)	0.023** (0.002)	0.028** (0.001)	0.011** (0.002)	-0.001 (0.003)
ROE	**Eq. 5**	0.044** (0.004)	0.050** (0.004)	0.081** (0.004)	-0.012* (0.005)	-0.009 (0.007)
	Eq. 6	0.069** (0.004)	0.077** (0.004)	0.094** (0.004)	0.051** (0.005)	-0.006 (0.008)
Panel D: CSP Governance						
ROA	**Eq. 5**	0.019** (0.002)	0.019** (0.002)	0.019** (0.002)	-0.005** (0.002)	-0.004 (0.002)
	Eq. 6	0.026** (0.002)	0.027** (0.002)	0.022** (0.002)	0.012** (0.002)	-0.003 (0.002)
ROE	**Eq. 5**	0.057** (0.004)	0.059** (0.004)	0.060** (0.004)	0.005 (0.004)	0.001 (0.006)
	Eq. 6	0.080** (0.004)	0.082** (0.004)	0.070** (0.004)	0.039** (0.004)	0.000 (0.006)

Table 7. Coefficients, significance, and standard errors for each SSP measure

This table shows the influence of each SSP score on CFP by dependent variable, equation used, and effects considered. First and second columns show the dependent variable (CFP) and the equation used. First, second, third and fourth row show whether the model has been performed considering year, industry, country and firm effects. The intersections between these rows and columns show the coefficient, significance, and standard error of SSP in each regression. *, ** indicate statistical significance at the 5%, 1% levels, respectively.

	Year effects	**no**	**yes**	**yes**	**yes**	**yes**
	Industry Effects	**no**	**no**	**yes**	**yes**	**yes**
	Country Effects	**no**	**no**	**no**	**yes**	**yes**
	Firm Effects	**no**	**no**	**no**	**no**	**yes**
Panel A: SSP Overall						
ROA	**Eq. 5**	0.127** (0.003)	0.134** (0.003)	0.131** (0.003)	0.066** (0.006)	0.147** (0.008)
	Eq. 6	0.172** (0.003)	0.181** (0.003)	0.164** (0.003)	0.286** (0.006)	0.218** (0.008)
ROE	**Eq. 5**	0.361** (0.008)	0.379** (0.008)	0.380** (0.008)	0.324** (0.014)	0.434** (0.022)
	Eq. 6	0.454** (0.008)	0.477** (0.008)	0.447** (0.008)	0.757** (0.016)	0.566** (0.022)
Panel B: SSP Environmental						
ROA	**Eq. 5**	0.076** (0.002)	0.078** (0.002)	0.079** (0.002)	0.045** (0.004)	0.085** (0.005)
	Eq. 6	0.115** (0.003)	0.117** (0.003)	0.113** (0.002)	0.202** (0.004)	0.128** (0.005)
ROE	**Eq. 5**	0.209** (0.006)	0.215** (0.006)	0.237** (0.006)	0.226** (0.011)	0.249** (0.014)
	Eq. 6	0.292** (0.006)	0.297** (0.006)	0.302** (0.006)	0.532** (0.011)	0.328** (0.015)
Panel C: SSP Social						
ROA	**Eq. 5**	0.082** (0.003)	0.090** (0.003)	0.105** (0.002)	0.053** (0.005)	0.116** (0.006)
	Eq. 6	0.102** (0.002)	0.112** (0.002)	0.121** (0.002)	0.243** (0.005)	0.169** (0.007)
ROE	**Eq. 5**	0.234** (0.006)	0.254** (0.006)	0.298** (0.006)	0.277** (0.013)	0.328** (0.018)
	Eq. 6	0.279** (0.006)	0.304** (0.006)	0.331** (0.006)	0.650** (0.014)	0.427** (0.019)
Panel D: SSP Governance						
ROA	**Eq. 5**	0.252** (0.006)	0.257** (0.006)	0.260** (0.005)	0.115** (0.009)	0.190** (0.011)
	Eq. 6	0.326** (0.007)	0.334** (0.007)	0.324** (0.006)	0.446** (0.009)	0.282** (0.011)
ROE	**Eq. 5**	0.719** (0.017)	0.736** (0.017)	0.770** (0.015)	0.528** (0.022)	0.615** (0.030)
	Eq. 6	0.878** (0.017)	0.898** (0.017)	0.897** (0.015)	1.178** (0.024)	0.783** (0.030)

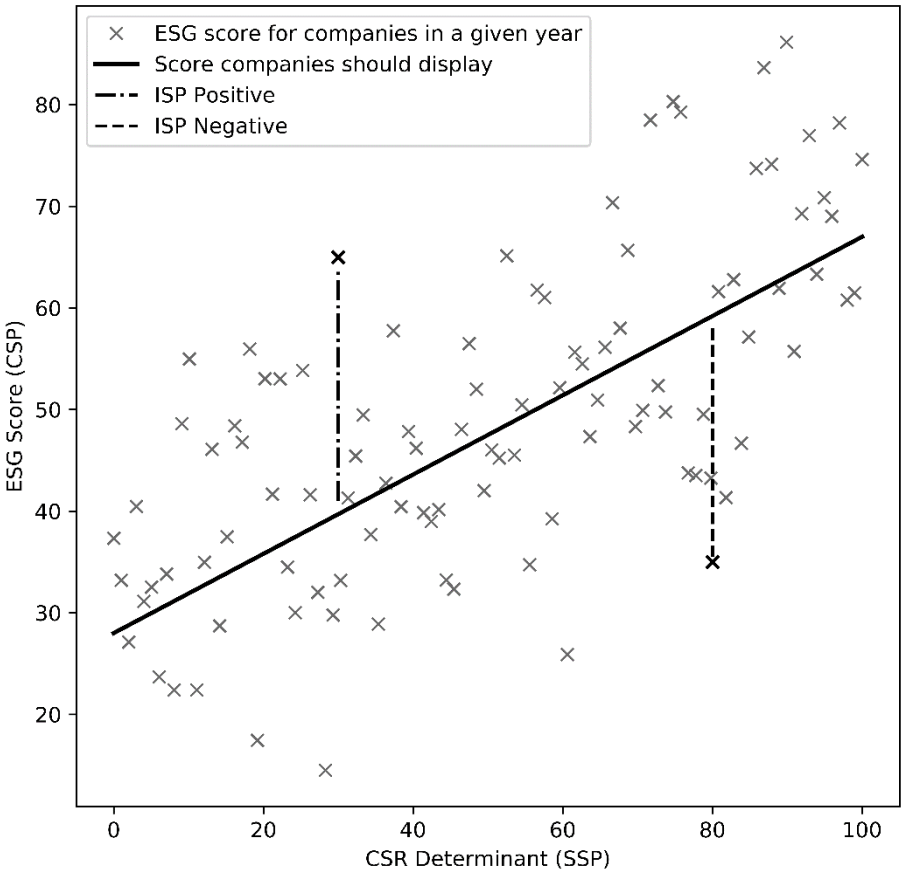
Table 8. Coefficients, significance, and standard errors for each ISP measure

This table shows the influence of each ISP score on CFP by dependent variable, equation used, and effects considered. First and second columns show the dependent variable (CFP) and the equation used. First, second, third and fourth row show whether the model has been performed considering year, industry, country and firm effects. The intersections between these rows and columns show the coefficient, significance, and standard error of ISP in each regression. *, ** indicate statistical significance at the 5%, 1% levels, respectively.

	Year effects	**no**	**yes**	**yes**	**yes**	**yes**
	Industry Effects	**no**	**no**	**yes**	**yes**	**yes**
	Country Effects	**no**	**no**	**no**	**yes**	**yes**
	Firm Effects	**no**	**no**	**no**	**no**	**yes**
Panel A: ISP Overall						
ROA	**Eq. 5**	-0.035** (0.002)	-0.035** (0.002)	-0.026** (0.002)	-0.042** (0.002)	-0.042** (0.003)
	Eq. 6	-0.032** (0.002)	-0.032** (0.002)	-0.028** (0.002)	-0.034** (0.002)	-0.050** (0.003)
ROE	**Eq. 5**	-0.078** (0.006)	-0.076** (0.006)	-0.052** (0.005)	-0.088** (0.005)	-0.106** (0.009)
	Eq. 6	-0.056** (0.006)	-0.055** (0.006)	-0.045** (0.005)	-0.064** (0.005)	-0.125** (0.009)
Panel B: ISP Environmental						
ROA	**Eq. 5**	-0.033** (0.002)	-0.033** (0.002)	-0.028** (0.002)	-0.038** (0.002)	-0.028** (0.002)
	Eq. 6	-0.029** (0.002)	-0.029** (0.002)	-0.027** (0.002)	-0.031** (0.002)	-0.032** (0.002)
ROE	**Eq. 5**	-0.072** (0.004)	-0.071** (0.004)	-0.056** (0.004)	-0.080** (0.004)	-0.067** (0.006)
	Eq. 6	-0.058** (0.004)	-0.057** (0.004)	-0.051** (0.004)	-0.064** (0.004)	-0.076** (0.007)
Panel C: ISP Social						
ROA	**Eq. 5**	-0.031** (0.002)	-0.031** (0.002)	-0.021** (0.002)	-0.033** (0.002)	-0.030** (0.003)
	Eq. 6	-0.028** (0.002)	-0.028** (0.002)	-0.023** (0.002)	-0.027** (0.002)	-0.036** (0.003)
ROE	**Eq. 5**	-0.068** (0.005)	-0.067** (0.005)	-0.043** (0.005)	-0.070** (0.005)	-0.079** (0.007)
	Eq. 6	-0.052** (0.005)	-0.051** (0.005)	-0.037** (0.005)	-0.051** (0.005)	-0.094** (0.008)
Panel D: ISP Governance						
ROA	**Eq. 5**	-0.007** (0.002)	-0.007** (0.002)	-0.003* (0.002)	-0.011** (0.002)	-0.013** (0.002)
	Eq. 6	-0.006** (0.002)	-0.006** (0.002)	-0.005** (0.002)	-0.008** (0.002)	-0.016** (0.002)
ROE	**Eq. 5**	-0.016** (0.004)	-0.016** (0.004)	-0.006 (0.004)	-0.024** (0.004)	-0.030** (0.006)
	Eq. 6	-0.007 (0.005)	-0.007 (0.005)	-0.004 (0.004)	-0.012** (0.004)	-0.037** (0.006)

Figure 1. Hypothetical example of ISP and SSP for a given year

This figure shows an example of the SSP and ISP of a set of hypothetical companies for a given year considering that there is only on determinant of CSR.



Appendix:

Table A1. Winsorized variables at 2.5 and 97.5 percentiles.

This table provides information about the winsorized variables by economic sector. The first column shows the economic sector and the first row show the variables winsorized at percentile 0.025 and 0,975. Last row shows the number of companies.

	ROA		ROE		Liabilities to Assets		Liabilities to Equity		Capital Expen. to Assets		
	2.5%	**97.5%**	**2.5%**	**97.5%**	**2.5%**	**97.5%**	**2.5%**	**97.5%**	**2.5%**	**97.5%**	**#**
Industrials	-7.36	19.15	-30.40	56.64	0.17	0.91	0.18	10.60	0.00	0.16	7,386
Technology	-20.08	28.32	-62.48	68.02	0.11	0.90	0.11	8.56	0.00	0.18	5,901
Consumer Cyclicals	-10.09	25.83	-36.05	78.05	0.15	0.90	0.16	8.47	0.00	0.15	6,829
Healthcare	-70.41	25.95	-220.02	58.61	0.06	0.91	0.04	7.31	0.00	0.10	3,506
Utilities	-3.64	13.91	-21.60	35.14	0.23	0.86	0.29	8.32	0.00	0.16	2,130
Energy	-34.23	18.57	-90.91	38.35	0.07	0.86	0.06	6.88	0.00	0.33	3,272
Financials	-1.06	19.25	-12.36	36.60	0.08	0.96	0.08	28.01	0.00	0.03	7,250
Basic Materials	-28.38	22.39	-63.49	51.99	0.05	0.85	0.04	6.26	0.01	0.25	5,087
Academic & Educational Services	-24.05	31.50	-70.47	95.70	0.14	0.84	0.15	4.56	0.00	0.18	148
Real Estate	-2.39	15.94	-16.19	32.18	0.17	0.87	0.21	8.86	0.00	0.24	3,542
Consumer Non-Cyclicals	-5.51	24.88	-21.81	80.08	0.18	0.87	0.21	7.39	0.01	0.13	3,624
All	-21.52	22.72	-56.07	56.49	0.11	0.94	0.10	16.49	0.00	0.19	48,675

Table A2. Descriptive statistics of the variables used in equation 5 and 6.

This table shows some descriptive statistics about the variables used in equation 5 and 6. The first column shows the type of variable and the second column shows the name of the variable. The following columns list some descriptive statistics including the average, standard deviation, minimum, quartiles and maximum value for each variable. The number of observations for each variable is 48,675.

		mean	std	min	25%	50%	75%	max
Dependent Variable	**ROA**	4.630	9.260	-70.410	1.650	4.720	8.530	31.500
	ROE	9.518	22.835	-220.024	4.490	10.540	17.810	95.695
Control Variables	**Log Sales**	6.589	1.224	-0.158	5.864	6.425	7.107	11.346
	Log Assets	6.969	1.163	3.162	6.200	6.743	7.503	11.676
	Liabilities to Equity	2.716	3.907	0.038	0.674	1.318	2.751	28.013
	Liabilities Assets	0.555	0.222	0.049	0.398	0.558	0.718	0.961
	C. Expen.	0.043	0.047	0.000	0.010	0.030	0.059	0.328
Variable Analyzed	**CFP Overall**	42.201	20.577	0.100	25.680	40.300	57.761	94.747
	CFP Environmental	33.013	28.967	0.000	4.235	27.800	57.150	99.250
	CFP Social	42.640	23.450	0.050	23.970	40.140	60.200	98.550
	CFP Governance	48.396	22.459	0.100	30.479	48.630	66.430	99.282
	SSP Overall	42.060	12.570	2.380	32.210	41.430	51.400	81.920
	SSP environmental	32.950	19.060	-25.190	19.030	32.910	46.060	91.110
	SSP Social	42.570	14.420	-7.280	31.450	41.790	53.000	93.380
	SSP Governance	48.130	7.860	17.880	42.310	47.850	54.090	73.920
	ISP Overall	0.144	16.032	-63.181	-10.837	0.142	11.404	60.951
	ISP Environmental	0.061	21.342	-73.503	-15.148	-1.458	14.510	82.676
	ISP Social	0.070	18.123	-70.109	-12.472	-0.549	12.747	66.582
	ISP Governance	0.263	20.874	-59.868	-15.823	0.838	16.542	60.483