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Fishing the Corporate Social Responsibility Risk Factors*

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Abstract

A typical argument in the literature is that Corporate Social Responsibility (CSR) reduces the risk of conflicts with stakeholders. In accordance to this, we test whether: i) domain specific CSR portfolios present pricing anomalies that could be captured by the introduction of risk factors accounting for exposition to stakeholder risk, ii) this risk source is priced in the cross-section of stock returns. In doing so we are particularly cautious in disentangling the contributions of different CSR domains in generating the pricing anomalies. Our findings show the existence of pricing anomalies related to CSR, which vary in numbers across all the domains under analysis. Even if our domain-specific CSR risk factors are not able to capture all pricing anomalies, we find that they reduce their absolute value. Additionally, our results show that the stakeholder risk is priced in the cross-section of returns, and that such additional risk source presents different premiums for each domain.

Keywords: corporate social responsibility, risk factor, multi factor model.

JEL Classification Numbers: G12; C51.

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1 Introduction

According to a standard definition, Corporate Social Responsibility (CSR) involves a departure from the goal of straightforward profit maximization toward a broader strategy of satisfying the interests of a wider set of stakeholders. As such, CSR embraces a wide range of employee-friendly, environment-friendly, and investor-friendly behaviors, with concomitant monetary costs and benefits that have uncertain effects on profits.

The importance of CSR in contemporary economics is witnessed by the growing proportion of listed companies that issue CSR reports, and by the increasing value of assets managed according to Socially Responsible Investment (SRI) standards.[1–2] The increase in demand for SRI is likely to be driven by two possible factors: i) investors' preferences for responsible firms, and ii) the risk characteristics of such firms. In the former case, a non-negligible share of investors have a taste for responsible stocks, and do not evaluate them on the basis of their risk-return characteristics only (Fama and French, 2007). With regard to risk characteristics, it must be considered that according to the World Economic Forum (2016) environmental and social risks will be the most severe in terms of their likelihood and impact on the future. In this scenario, responsible firms are likely to experience a lower probability of facing conflicts with stakeholders (Freeman, 1984) through environmental scandals, class actions, and/or investors boycott (Luo and Balvers, 2017). Similarly, underinvesting in business that may become obsolete in the future (i.e. due to the progressive tightening of the environmental regulation) could become a mainstream market practice in the next years. In this respect, irresponsible firms should compensate the investors with higher returns for missed diversification opportunities (Merton, 1987), and smaller investor base affecting their liquidity (Hong and Kacperczyk, 2009).

All these reasons clearly make the case for the existence of a nexus between CSR and the asset pricing literature. Specifically, we argue that an asset pricing model augmented with a CSR risk factor could contribute to explain the observed pricing anomalies not captured by the risk factors most commonly used so far.

The asset pricing literature searching for unexplained risk components that eventually account for such anomalies has a long tradition. In this respect, Fama and French (1993, 1996) document the presence of patterns in average stock returns which are related to firm characteristics such as size and book-to-market ratio. These patterns are related to the ex-

[1] The KPMG (2015) report documents that CSR reporting is a mainstream global business practice, with almost 90% of the analyzed companies publishing a report. This represents a remarkable increase, up from 64% of companies in the KPMG (2011) report.

[2] The US Social Investment Foundation (2014) report documents how the value of assets being managed within SRI strategies expanded from 6.57 trillion in 2014 to 8.72 trillion in 2016, representing an increase of 77%. These assets now account for more than 1 out of every 5 dollars under professional management in the United States.

istence of pricing anomalies that cancel out when adding size and value risk factors to the capital asset pricing model (*CAPM* – Sharpe, 1964, Lintner, 1965, and Mossin, 1966). Providing a different interpretation of such findings, Petkova (2006) shows that size and value risk factors are correlated with innovations in a set of macro variables. As a result, these risk factors lose their explanatory power in the cross-section of stock returns when the betas on the innovations of such macro variables are added to the model. Fama and French (2012) investigate the presence of size, value, and momentum patterns, and their related pricing anomalies, in international stock returns. While, Fama and French (2017, 2015) test for the existence of profitability and investment patterns in the average stock returns for North America and international portfolios, adding profitability and investment risk factors to capture the pricing anomalies related to such patterns. Fama and French (2017, 2015) outline also that a five-factor model based on North American stocks is able to capture a substantial portion of the cross-sectional variation in average returns, but that a global five-factor model performs poorly on local test portfolios. Hirshleifer et al. (2012) investigate the presence of average stock return patterns related to accruals. Jegadeesh and Titman (1993) document that buying a portfolio composed of stocks that have performed well in the past, and selling a portfolio of stocks that have performed poorly in the same period generates significant and positive pricing anomalies. To explain such pricing anomalies, Carhart (1997) add a momentum risk factor to the standard Fama-French three-factor model. Pastor and Stambaugh (2003) show that average stock returns are related to aggregate liquidity fluctuations. In this respect, they document that the average returns of stocks with the highest sensitivity to liquidity fluctuations exceed those of stocks with the lowest sensitivity by 7.5% per year. This extra return can be captured using a liquidity risk factor. Filipe et al. (2016) investigate the negative relation between stocks returns and firms' default probability. Their finding documents that the so called default anomaly is related to firms' idiosyncratic risk, which can be diversified away, rather than to their exposition to a systematic risk source.

The asset pricing models provided by the literature above have been applied to price CSR firms and/or portfolio exclusively composed by such firms. In this respect, Kempf and Osthoff (2007) find that investors who adopt socially responsible criteria earn remarkably high risk-adjusted returns by implementing the positive or the best-in-class screening criteria, while not implementing the negative criteria. Similar conclusions are reached by Statman and Glushkov (2009), who find that the return advantage of responsible investment is largely offset when adopting a negative screen approach. However, when reviewing the literature on SRI, Renneboog et al. (2008a) arrive at quite different conclusions. They document that i) at the firm level, it is not possible to assess whether CSR is priced, even if a higher shareholder value is associated with responsible firms, ii) at the portfolio (and fund) level the different preferences of responsible investors might have important effects on asset pricing, but that current empirical evidence does not demonstrate unequivocally that socially responsible funds perform better than their counterparts. At portfolio level, Humphrey et al. (2012) find that there are no differences in terms of risk-adjusted returns between portfolios of firms with higher/lower SRI performance. While at investment fund level, Hamilton et al. (1993) find that socially responsible mutual funds do not earn statistically significant excess returns in comparison with their conventional counterparts. Thus, despite the effort expended so far on verifying whether and to what extent responsible investments are able produce risk-adjusted returns, the debate is far from being closed.

In line with Scholtens and Zhou (2008), our claim is that the evidences are mixed because CSR depends crucially on the complex interaction among highly heterogeneous CSR domains, which might contribute differently to the process of generating risk-adjusted returns. These domains include the following: environment, human resources, human rights, corporate governance, and business behavior, among others. The rationale for such a decomposition is that different domains, which are not necessarily correlated, measure different sources of risk. For example, the environmental risk is affected by news on global warming and environmental scandals, among others. As such, it could not be positively correlated with risk on other CSR domains, such as corporate governance and/or human resources. Quite to the contrary, correlation can be negative in some cases, given that environmental concerns may stop, or prevent an increase in certain types of environmentally harmful production, with resulting effects on jobs.[3] In accordance with the view that CSR consists of heterogeneous domains, Galema et al. (2008) investigate the existing relation between excess stock returns and the various CSR domains. Their findings show that the human resource dimension has a significant impact on excess stock returns. Brammer et al. (2006) also investigate the relation between stock returns and CSR at a disaggregated level. They find that the environmental and community dimensions are negatively correlated with stock returns, while the opposite is true for the human resource dimension. Hence, the contribution of the various CSR dimensions in generating risk-adjusted returns must be examined separately in order to avoid the mixed empirical evidence found so far.

To the best of our knowledge, only few past studies have introduced CSR risk factors into the literature. The first attempt was made by Renneboog et al. (2008b), who investigate the difference in terms of risk-adjusted returns between SRI and conventional funds across different geographical areas. They add a set of social responsibility indices to the Fama-French-Carhart four-factor model, and find that the pricing anomaly of SRI funds does not cancel out. De Haan et al. (2012) find that returns decrease as firms' environmental respon-

[3] For example, Volkswagen was forced to cut several jobs to recover from the diesel emission scandal.

sibility increases. This pattern is related to the existence of pricing anomalies. However, they find that their CSR risk factor based on firms' environmental performance, which they add to the Fama-French-Carhart four-factor model, does not capture these anomalies. Lioui and Sisto (2017) introduce two CSR risk factors based on average positive (strengths) and average negative (concerns) behaviors, and find that the CSR risk factor based on concern is consistently priced. Luo and Balvers (2017) introduce a boycott risk factor to price the sin stock premium commonly observed by the literature. Ciciretti et al. (2017) investigate the role played by the investors' preferences in explaining the existence of pricing anomalies for responsible firms.

Based on the findings of these previous studies, we contribute to the existing SRI and asset pricing literature by integrating and enriching previous approaches in three respects. Specifically, we test whether i) there exist pricing anomalies that could be captured by introducing risk factors that account for the exposure to stakeholder risk, and ii) this risk source is priced in the cross-section of stock returns.[4] Our third contribution is in being particularly cautious in disentangling the contributions of different CSR domains in generating the pricing anomalies. Specifically, we conduct our analysis at a disaggregated CSR level by introducing domain-specific CSR test portfolios and risk factors. Our risk factors consist of a long position in the "worst" responsible firms, and a short position in the "best" responsible firms. If responsible investors do consider the risk-reduction effects of CSR in their investment decisions, co-movements between responsible firms' stock returns and the CSR risk factor should explain the differences in the cross-section of stock returns. Additionally, in contrast to previous studies, we test whether our findings remain significant after taking into account that they might proxy macroeconomic risk sources or be due to mispricing.

Our findings show that average monthly excess stock returns in the test portfolios decrease as firms' responsibility levels increase. We refer to this pattern as the *responsibility effect*. We show that this pattern is related to the existence of pricing anomalies, which, in general, vary in number across the different investigated CSR domains. Furthermore, even though our domain-specific CSR risk factors that account for the stakeholder risk exposure are not able to capture all the pricing anomalies, we find that stakeholder risk is actually priced in the cross-section of stock returns. In this case, the higher returns of firms with lower CSR levels are justified by their greater exposure to stakeholder risk, resulting in different premiums, according to the domain under analysis. The differences in the number of pricing anomalies and in the premiums related to stakeholder risk across the CSR domains confirm that CSR has to be decomposed into such domains, and that its heterogeneous nature has to be taken into account. Additionally, we test whether our CSR risk factors represent a source

[4] Risk-adjusted returns and pricing anomalies both refer to the portion of excess stock returns not captured by the most commonly used risk factors. In the remainder of this paper, we use the latter term because it better fits the arguments presented here.

of macroeconomic risk, and whether the CSR pricing anomalies are due mainly to mispricing. Both tests confirm our initial results that stakeholder risk is indeed an additional risk source, which has not yet been analyzed in the literature.

Our contribution adds original insights with respect to those that are closest in the literature. With respect to Luo and Balvers (2017) and Lioui and Sisto (2017) we use a world wide dataset covering the four main geographic areas proposed by Fama and French (2017, 2012). Moreover, while Luo and Balvers (2017) focus their attention on the boycott risk, we focus our attention on what the authors call "litigation risk" and build our CSR risk factors to capture what we regard as being an additional systematic risk factor rather than an idiosyncratic risk component. With respect to Ciciretti et al. (2017), we create CSR risk factors showing that they are able to price most of the test portfolios, while Ciciretti et al. (2017) used those factors to test if the portion of pricing anomalies still significant are due to investors taste for responsible assets. Moreover, differently from them, we also test whether the stakeholder risk represents a source of macroeconomic risk, and whether the CSR pricing anomalies are due to mispricing. Finally, we show that our results are robust to the in-sample Fama and French (2017, 2012) and Carhart (1997) risk factors, and the equally-weighted returns specifications for the test portfolios.

This paper is organized in five sections (including the Introduction and Conclusions). In Section 2, we outline our methodology and research hypotheses. In Section 3, we describe the data set used in the analysis, and provide preliminary descriptive findings. In Section 4, we provide evidence about the existence of pricing anomalies related to CSR and test if the stakeholder risk is priced in the cross-section of stock returns. In Section 5, we provide the robustness checks, while Section 6 concludes the paper.

2 Methodology and Research Hypotheses

In this study, we investigate the existence of patterns in the average excess stock returns of responsible firms, and then the existence of pricing anomalies. In doing so, we adopt the same methodological approach followed in the asset pricing literature to identify size, value, profitability, investment, momentum, and liquidity patterns. The descriptive evidence from domain-specific CSR decile portfolios can be used to identify stock return patterns related to CSR behavior. These patterns might be related to the existence of pricing anomalies, indicating the presence of a hidden systematic risk component (i.e. the stakeholder risk) that could be captured using the CSR risk factors. Therefore, our first null hypothesis is as follows:

$\mathbf{H}_{0,A}$: *Domain-specific CSR test portfolios are correctly priced.*

In order to test this hypothesis, we create a set of domain-specific CSR test portfolios (Fama and French, 1992, 2015, Pastor and Stambaugh, 2003) and verify whether they are correctly priced by the standard risk factors (Fama and French, 2017, 2012, 1996, Carhart, 1997). Once we prove the existence of such pricing anomalies, we introduce and test our domain-specific CSR risk factors. The domain-specific CSR risk factors can be used simultaneously i) to verify whether their introduction in a multi-factor model cancels out the CSR pricing anomalies, and ii) to capture the exposure to stakeholder risk. The former would indicate that our domain-specific CSR risk factors correctly price the test portfolios or, equivalently, support the idea that these assets are priced according to a rational pricing model. The latter would reveal a statistically significant exposure to stakeholder risk that should decrease as CSR levels increase because of the lower probability of such firms facing conflict with stakeholders. Then, in line with Luo and Balvers (2017), Lioui and Sisto (2017) and De Haan et al. (2012), we compute the premiums related to the exposure to stakeholder risk. Thus, we have the following hypothesis:

$\mathbf{H}_{0,B}$: *CSR risk factors are priced in the cross-section of stock returns.*

In this case, we adopt the standard Fama and MacBeth (1973) two-step cross-sectional regression procedure to verify whether stakeholder risk is priced by the market. Our domain-specific CSR test portfolios and risk factors are then used to disentangle whether, and to what extent markets price each CSR domain differently. As is well known, this approach does not control for the possibility that domain-specific CSR risk factors actually capture a source of macroeconomic risk and/or if the pricing anomalies are due to mispricing. Therefore, we follow the methodology proposed by Petkova (2006), to verify whether the betas on the innovations of our CSR risk factors lose their explanatory power when the betas on the innovations of a set of predefined macro variables are added to the cross-section of stock returns. Moreover, in order to test whether our findings are due to mispricing, similarly to Hirshleifer et al. (2012), we test whether the contributions of domain-specific CSR risk factors that explain the cross-section of returns cancel out after adding domain-specific CSR scores. Finally, we check if our results are robust to: the in-sample Fama and French (2017, 2012) and Carhart (1997) risk factors, and the equally-weighted returns specifications for the CSR test portfolios.

3 Data and Descriptive statistics

The data used in our research originate from different sources. Annual responsibility scores at firm level are retrieved from Vigeo-Eiris. The scores are published continuously during the year, and are revised at least every eighteen months, or earlier if a company faces litigations with stakeholders or scandals during the eighteen months. The scores are divided into six domains: business behavior (BB), corporate governance (CG), community involvement (CIN), environment (ENV), human resources (HR), and human rights (HRT). Each CSR domain is divided into c categories, yielding a total of 38 categories and the number of categories c varies across the domains (additional details are provided in the Internet Appendix A). The domain-specific responsibility measure for firm i in industry j in domain d is denoted as —S_{ijd}—, and is computed as follows:

$$S_{ijd} = \sum_{c=1}^{C} \frac{s_{ijdc} w_{jdc}}{W_{jd}}, \tag{1}$$

where s_{ijdc} is the responsibility measure assigned to firm i within industry j in domain d and category c, taking an integer value between 0 and 100, where a $s_{ijdc} = 0$ indicates an absence of CSR behavior while a $s_{ijdc} = 100$ indicates full CSR behavior; w_{jdc} is the weight assigned to industry j in domain d and category c, taking an integer value between 1 and 3; and W_{jd} is the sum of all category weights activated in the domain ($W_{jd} = \sum_{c=1}^{C} w_{jdc}$). The value assigned to w_{jdc} is industry specific and is related to the level of effort expended by firms in industry j in implementing responsible standards in domain d and category c. For example, in the "environment" domain and in the "pollution retention and control" category, w_{jdc} is equal to 1 for the financial industry, and is equal to 3 for the health care industry. Domain-specific responsibility measures —S_{ijd}— are used to compute the overall responsibility measure —OA_{ij}— for firm i within industry j, and are defined as follows:

$$OA_{ij} = \sum_{d=1}^{D} \frac{S_{ijd} W_{jd}}{W_j}, \tag{2}$$

where W_j is the sum of all category weights activated in the six domains ($W_j = \sum_{d=1}^{D} \sum_{c=1}^{C} w_{jcd}$). Table 1 reports the main descriptive statistics for each CSR domain.

Insert Table 1 About Here

The average value of the overall responsibility measure is 41.01 (OA, column 1), with a minimum of 30.00 (column 2) and a maximum of 76.00 (column 3), on a scale ranging from 30 to 100.[5] By breaking down the overall responsibility measure into six domains, we find that the lowest average value is 33.58, for human resources (HR, column 1), while the

[5] Following the Vigeo-Eiris methodological approach, we discard all firms that score less than 30 in the overall responsibility measure – OA_{ij}. In doing so, we exclude firms that do not have enough information to measure their level of social responsibility. This procedure does not generate a selection bias in our final data set because we discard only those firms for which it is not possible to assess any degree of CSR, and not firms with low CSR levels. The Vigeo-Eiris approach is applied only to the overall responsibility measure, leaving each single CSR domain free to vary between 0 and 100.

highest average value is 52.07, for corporate governance (CG, column 1). Considering all single responsibility measures, the minimum value is 0.00 for all disaggregated domains, with the exception of HR, which has a minimum value of 2.00 (column 2). The maximum level of responsibility, equal to 100.00, is reached only in the CG domain (column 3). This evidence suggests that, with the exception of the CG domain, no firm is evaluated as fully socially responsible. Moreover, consistently with Statman and Glushkov (2009) and Lioui and Sisto (2017), the distributions of scores in the CSR domains are right-skewed indicating that most of the firms are not able to achieve a responsibility score at least equal to the sample average. The differences across the domains in terms of average score, skewness and minimum/maximum scores achieved by the firms indicate that there is indeed heterogeneity in terms of responsibility across the domains. As such, a disaggregate domain analysis could help to disentangle the different expositions to a hidden systematic risk component and thus different risk premiums that firms have to promise in equilibrium to the investors.

From the Fama and French (2017, 2012) global risk-factor database, we retrieve the following monthly data: the excess return of the market (R_m), which we use as a benchmark; the one-month T-bill rate (R_f); the size risk factor (SMB); the value risk factor (HML); the momentum risk factor (MoM), the profitability risk factor (RMW); and the investment risk factor (CMA).[6] From Datastream, we retrieve annual data on the following additional firm-level variables: market value of equity; common equity; total assets; net sales or revenues; selling, general, and administrative expenses; interest expense on debt; and cost of goods sold. These variables are used to create the size (ME), book-to-market (BE/ME), investment (Inv), and operating profitability (OP) dimensions following the Fama and French (2015) approach. Then, we retrieve monthly data at the firm level on stock prices (P) and dividends (D). We also retrieve monthly data on the 10-year US government bond yield, 1-year US government bond yield, 10 Year corporate Baa bond yield, and MSCI World Price index. As in Petkova (2006), these variables are used to create the aggregate dividend (DIV), term spread ($Term$), and the default spread (Def).[7]

Our data set results in an unbalanced panel with 1642 unique firms covering the four main geographic areas: North America, Europe, Asia Pacific ex Japan, and Japan (Fama and French, 2017, 2012). From an initial sample of 3491 unique firms, we obtain our unbalanced sample by applying the Vigeo-Eiris methodological approach described in footnote 5 and by excluding all those firms that do not belong to the four main geographic areas proposed by

[6] Fama–French web page: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html.

[7] The data types of the variables retrieved are: $WC08001$ (market value of equity), $WC02999$ (total assets), $WC03501$ (common equity), $WC01001$ (net sales or revenues), $WC01101$ (selling, general, and administrative expenses), $WC01251$ (interest expense on debt), $WC01051$ (cost of goods sold), $WC04052$ (dividends), $USOIR080R$ (10-year US government bond yield), $TRUS1YT$ (1-year US government bond yield), $USCRBBAA$ (10-year corporate Baa bond yield), and $MSACWF\$$ (MSCI World Price index).

Fama and French (2017, 2012). The period covered is July 2005 to April 2017 (142 months).[8]

Domain-specific CSR decile portfolios are used to identify stock return patterns that can indicate the existence of pricing anomalies related to the responsibility levels of the firms. Taking into account the multi-dimensional nature of CSR performance, we sort stocks within each domain using only the scores available until June of year t and the distribution deciles as cut-offs for the portfolios composition. This procedure is repeated at the end of June of each year. The monthly excess returns for the value-weighted CSR decile portfolios are calculated from July of year t to the following June. In Table 2, we report the average monthly excess returns of the CSR decile portfolios (Panel A), average yearly CSR measure of the firms used in the portfolio composition (Panel B), and average number of firms per year used in the portfolio composition (Panel C).

Insert Table 2 About Here

Consistently with Lioui and Sisto (2017), Table 2 shows that the average monthly excess returns for the domain-specific CSR decile portfolios in the *OA* domain decrease nearly monotonically as the CSR scores increase. We refer to this pattern as the *responsibility effect*. The patterns in the average monthly excess returns are consistent with the *responsibility effect* in all six domains. The absence of a clear-cut monotonic pattern in average excess returns is not uncommon in the literature. For an example, see Carhart (1997) for portfolios created using one-year lagged returns.

At disaggregated domain level, the average monthly excess returns of the difference portfolios (Panel A, column 11) are always positive and range between .21 for the corporate governance (CG) domain and .70 for the human resource (*HR*) domain. In line with Humphrey et al. (2012) and Statman and Glushkov (2009), although the differences in average monthly excess returns are not statistically significant, a strategy that buys the $Worst$ portfolio and sells the $Best$ portfolio generates an extra annual return of between 2.52 percent (CG) and 8.40 percent (HR).[9–10]

The differences across domains according to the descriptive statistics are confirmed by differences in terms of returns between the $Worst$ and the $Best$ portfolios, and indicate that indeed CSR has to be analyzed at disaggregated level. Moreover, the *responsibility effect* along

[8] Vigeo-Eiris analyzes firms included in following stock market indices: FTSE All World Developed, MSCI World, Stoxx Global 1800, MSCI Emerging Market, Stoxx 600 Europe, S&P 500, S&P TSX, Russell 1000, Russell 2000, FTSE 350 and SBF120. Its dataset covers the 97% of all the above indices in terms of market capitalization. The 1642 unique firms account for 10576 firm-time observations.

[9] Here, $Worst$ is the portfolio of firms with the lowest CSR scores, and $Best$ is the portfolio of firms with the highest scores. The difference portfolio is given by the difference between the $Worst$ and the $Best$ portfolios ($Diff = Worst - Best$).

[10] To annualize the average returns of the difference portfolios, we multiply the values by 12.

all domains under analysis suggests that it could be possible to extract a systematic factor to capture a hidden risk component not taken into account by the most commonly used risk factors.

Overall, our first descriptive findings show that the *responsibility effect* is a common pattern within the different CSR domains, and could be justified by the higher exposure to stakeholder risk for firms with lower CSR scores. This finding is consistent with the fact that responsible investors screen out from their opportunity sets firms that have a higher probability of facing future conflicts with stakeholders. The lower demand for the screened stocks should lead to a return premium on these assets in equilibrium.

4 Empirical results

In this section we present our main results on the existence of pricing anomalies for the domain specific CSR test portfolios and verify whether the stakeholder risk in priced in the cross-section of stock return. In doing so, we also test whether our CSR risk factors proxy a source of macroeconomic risk, and if the pricing anomalies are due to mispricing rather than a hidden risk factor component. The analysis is presented step-by-step in the next subsections.

4.1 Evidence of the CSR Pricing Anomaly

Consistently with the asset-pricing literature, we need to verify whether the *responsibility effect* is related to the presence of a CSR pricing anomaly. In doing so, we introduce the test portfolios that consider the two-by-two intersections between each CSR domain jointly, with firm size (ME), book-to-market value (BE/ME), investment (Inv) or profitability (OP) dimension. More specifically, we independently sort all the above variables, using for the CSR domains only the scores available until June of year t and the 30^{th} and the 70^{th} percentiles as cut-offs for the portfolio composition. In taking the two-by-two intersections between each CSR domain and the ME, BE/ME, Inv, or OP dimensions, we obtain nine ($3x3$) CSR test portfolios for each possible two-by-two combination. We choose to define nine portfolios instead of 25, as in Fama and French (2015, 1996), to avoid the possibility of empty test portfolios. This procedure is repeated at the end of June of each year. The monthly excess returns for the value-weighted CSR test portfolios are calculated from July of year t to the following June. In Table 3, we report the average monthly excess returns for the nine CSR test portfolios of the $CSR-ME$ intersections (Panel A), yearly average responsibility scores of the firms used in the portfolio composition (Panel B), and the average number of firms per year used in the portfolio composition (Panel C). In Tables 3B, 3C, and 3D of the Internet

Appendices B, C, and D, we report the same descriptive findings for the $CSR-BE/ME$, $CSR-Inv$, and $CSR-OP$ intersections, respectively.

Insert Table 3 About Here

After introducing the *responsibility effect* in the domain-specific CSR decile portfolios, Table 3 shows that the average monthly excess returns for the CSR test portfolios in the *OA* domain decrease nearly monotonically as the average yearly CSR scores increase. The average returns of the difference portfolios are positive in all the three cases (*OA*, Panel A, columns 1-3). The same happens, at the disaggregated CSR domain level with some exceptions in the *BB*, *HR*, and *HRT* domains. Specifically, the average returns of the difference portfolios are mostly positive (with three exceptions over 21 cases), and range between .03 (CG) and .50 (*HR*). The return differentials, which characterize the *responsibility effect*, are not statistically significant, although a strategy that buys the $Worst$ portfolio and sells the $Best$ portfolio yields an additional extra return ranging between 0.36 (CG) and 6.00 (*HR*) percentage points annually. The same occurs in the CSR test portfolios in the *OA* domain and at disaggregated level for each pairwise combinations of the CSR domains and the BE/ME, Inv, and OP dimensions (in Tables 3B, 3C, and 3D Internet Appendices B, C, and D, respectively). These descriptive findings indicate that the *responsibility effect* is consistent across all domains and intersections under analysis. In what follows, we test whether the higher returns of firms with lower CSR levels can be justified by the presence of a hidden risk factor that accounts for their higher exposure to stakeholder risk.

The presence of the *responsibility effect* could be related to the presence of pricing anomalies related to the CSR test portfolios (research hypothesis $H_{0,A}$). In order to verify this hypothesis in a multi-factor model, we first estimate the standard three-factor Fama-French model ($FF3$), the four-factor Fama-French-Carhart model (FFC), and the five-factor Fama-French model ($FF5$):

$$R^d_{p,t} - R_{f,t} = \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + u^d_{p,t} \qquad (FF3)$$

$$\begin{aligned} R^d_{p,t} - R_{f,t} = \; & \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + \\ & + \beta^d_{pm} MoM_t + u^d_{p,t} \end{aligned} \qquad (FFC)$$

$$\begin{aligned} R^d_{p,t} - R_{f,t} = \; & \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + \\ & + \beta^d_{pm} MoM_t + \beta^d_{pr} RMW_t + \beta^d_{pc} CMA_t + u^d_{p,t} \end{aligned} \qquad (FF5),$$

respectively, where $R^d_{p,t} - R_{f,t}$ is the excess return of the CSR test portfolio p in domain d and month t; α^d_p is the pricing anomaly of portfolio p in domain d; $R_{m,t}$ is the excess return of the stock market index used as a benchmark; SMB_t is the size risk factor; HML_t is the value risk factor; MoM_t is the momentum risk factor; RMW_t is the profitability risk factor; CMA_t is the investment risk factor, and $u^d_{p,t}$ is the error term for portfolio p in domain d and month t. In Table 4 we report the results for the $FF3$ model estimated using the CSR test portfolios in the $CSR-ME$ intersection. In Tables 4B, 4C, and 4D of the Internet Appendices B, C, and D we report the results for the $CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$ intersections, respectively.

Insert Table 4 About Here

Table 4 clearly shows that in the *OA* domain, the $FF3$ model is unable to correctly price excess returns for two of the nine test portfolios (Panel A, Section α^d_p, columns 1-3). When considering the disaggregated CSR domains, the number of test portfolios not correctly priced is equal to those in the *OA* domain in four over six domains (CG, ENV, *HR*, and HRT), and is reduced to one in the remaining two domains (*BB* and CIN).

To describe the risk exposure of the CSR test portfolios in more detail, we briefly analyze the other covariates in the $FF3$ model: the market, size, and value risk factors. Here, the market, size, and value factor loadings do not present a clear pattern related to the CSR scores and are, in general, significant in all domains, including the aggregated *OA* domain (Panel A, Section β^d_{pm}, β^d_{ps}, and β^d_{ph}, columns 1-3). Similar results hold for the $CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$ intersections (in Tables 4B, 4C, and 4D Internet Appendices B, C, and D, respectively). Overall, the $FF3$ model leaves a relevant part of the excess returns unexplained, and the number of test portfolios that are not correctly priced varies among the domains and intersections. Therefore, we introduce the FFC model, and report the results for the CSR test portfolios in the $CSR-ME$ intersections (see Table 5). Then, in Tables 5B, 5C, and 5D of the Internet Appendices B, C, and D, respectively, we report the results for the $CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$ intersections.

Insert Table 5 About Here

Table 5 also shows that the FFC model is not able to correctly price the excess returns for one out of nine test portfolios in the *OA* domain (Panel A, Section α^d_p, columns 1–3). Considering the CSR-specific domains, the same occurs in five out of six domains, while non-correctly priced test portfolios raise to two in the HRT domain.

The same results hold for the FFC model with respect to the market, size, and value risk factors found using the $FF3$ model. Momentum factor loadings do not present any clear pattern with CSR scores and are, in general, significant across all domains, including OA (Panel A, Section β^d_{pm}, columns 1-3). Overall, also the FFC model leaves a portion of excess returns unexplained. However, it performs better than the $FF3$ model does in the $CSR-ME$ and $CSR-OP$ intersections, and achieves mostly the same results in the $CSR-BE/ME$ and $CSR-Inv$ intersections.

Finally, we introduce the $FF5$ model, and report the results in Table 6 for the $CSR-ME$ intersections, and in Tables 6B, 6C, and 6D of the Internet Appendices B, C, and D, respectively, for the remaining intersections.

Insert Table 6 About Here

Table 6 shows that the $FF5$ is not able to correctly price part of the excess returns in the OA domain in two out of nine test portfolios (Panel A, Section α^d_p, column 1-3). The same occurs at disaggregated domain level in three out of six cases (BB, HR and HRT). Then, the number of test portfolios not correctly priced reduce to one in three out of six domains (CG, CIN, and ENV). These results hold for the other intersections.

The same results with respect to systematic, size, value, and momentum risk factors found for the $FF3$ and FFC models hold for the $FF5$ model. The profitability and investment factor loadings do not present any clear pattern with the CSR scores, and are, in general, not statistically significant (Panel A, Section β^d_{pr} and β^d_{pc}, columns 1-3). These results might change according to the analyzed domain. For example, in the $CSR-BE/ME$ intersections of the Internet Appendix B, the profitability and investment betas tend to be strongly significant (Panel A, Section β^d_{pr} and β^d_{pc}, columns 1-3).

In summary, the *responsibility effect* can be related to the existence of pricing anomalies hiding an unmeasured risk component, namely the stakeholder risk. The heterogeneous nature of the CSR domains is reflected by the differences in the numbers of portfolios not correctly priced according to the domain under analysis. This indicates that each CSR domain presents its own peculiar risk/return characteristics.

4.2 Building the CSR Risk Factors

The results in the previous sub section show that responsible firms are not correctly priced by the $FF3$, FFC, and $FF5$ models. To address this issue, we introduce domain-specific CSR risk factors to verify whether they are able to capture exposure to stakeholder risk and cancel out such pricing anomalies. In doing so, we independently sort each CSR domain and the ME dimension considering for the CSR domain only the scores available until June of year t and the 50^{th} percentile as a cut-off for the portfolio composition. In taking the intersection between each CSR domain and the ME dimension, we obtain four ($2x2$) portfolios for each pairwise combination. This procedure is repeated at the end of June of each year. The monthly returns for the value-weighted portfolios are calculated from July of year t to the following June. The four specific CSR domain portfolios are the building blocks for the computation of the domain-specific CSR risk factors.[11] In Table 7, we report the construction of specific CSR risk factors, denoted as WMB^d, built as the equally weighted difference between the two $Worst$ and $Best$ portfolios (Panel A), related descriptive statistics (Panel B), and correlations (Panel C).[12]

Insert Table 7 About Here

The descriptive statistics show that the market benchmark, momentum, and overall CSR risk factors (WMB^{OA}) have premiums higher than those of the size and value risk factors (Panel B). The same happens for all domain-specific CSR risk factors, with the exception of WMB^{CG}, which has a premium between those of the value and size risk factors. The higher premium of the market benchmark, momentum, profitability, investment and most of the domain-specific CSR risk factors, including WMB^{OA}, suggest that these risk factors should account for much of the variation in average returns of domain-specific CSR test portfolios. In addition, the variation in the premiums of CSR risk factors is a further evidence in favor of the heterogeneous exposure to stakeholder risk at the disaggregated CSR domain level.

The risk factor correlation matrix shows that correlations among domain-specific CSR risk factors (including WMB^{OA}) and those most commonly used by the literature are fairly low: negative everywhere with the market, mostly negative with the value risk factors, mostly positive with the size and investment risk factors, and positive everywhere with the momentum and profitability risk factors (Panel C). The low correlations imply that multicollinearity should not affect the estimates of a multi-factor model that includes CSR risk factors. In addition, the low correlations suggest that the market and other most commonly used risk factors do not account for the stakeholder risk.

[11] Specifically, we denote the two size groups as $S(mall)$ and $B(ig)$, and the two responsible measure groups for each domain d as $W(orst)$ and $B(est)$. The four portfolios arising from the intersection of these groups are then used to calculate the CSR risk factors. For example, WS^d and WB^d in domain d are the two worst portfolios, created from the intersection of W with S and B, respectively. In footnote 9, $Worst$ and $Best$ refer to the different subsets of test portfolios

[12] For example, in the intersection between the size and the BB domain, the risk factor WMB^{BB} is equal to the difference between the average of two W portfolios (WS^{BB} and WB^{BB}) and the average of two B portfolios (BS^{BB} and BB^{BB}). The same procedure is used for the remaining domain-specific risk factors.

4.3 CSR-Augmented Asset Pricing Models

The presence of pricing anomalies related to corporate responsibility indicates that the sample stocks are not correctly priced when using the standard, most commonly used pricing models in the literature (research hypothesis $H_{0,A}$). To address the problem, we add the exposure to stakeholder risk to the FFC model, and then estimate the Responsible Fama-French-Carhart model ($RFFC$), as follows:

$$R^d_{p,t} - R_{f,t} = \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + \beta^d_{pm} MoM_t + \beta^d_{pw} WMB^d_t + u^d_{p,t} \quad (RFFC),$$

where, in addition to FFC, we include our WMB^d_t measure, that is, the specific CSR risk factor in domain d and month t capturing the exposure to stakeholder risk, and $u^d_{p,t}$ is the error term for the test portfolio p in domain d and month t. In Table 8 we report the results of the $RFFC$ model for the CSR test portfolios in the $CSR-ME$ intersections. In Tables 8B, 8C, and 8D of the Internet Appendices B, C, and D, respectively, we report results for the $CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$ intersections.

Insert Table 8 About Here

Table 8 shows that, as was the case for the $FF3$, FFC and $FF5$ models, the $RFFC$ model leaves part of the excess returns unexplained for one out of nine test portfolios in the OA domain (Panel A, Section α^d_p, columns 1-3). The same occurs in five out of six domains (BB, CG, ENV, HR, and HRT), while in the CIN domain, the test portfolios are all correctly priced. Considering the 63 test portfolios across all the domains, including OA, we find that 12 are not correctly priced for the $FF3$ model, eight for the FFC model, 11 for the $FF5$ model, and six for the $RFFC$ model. Similar results hold in the other intersections, where the $RFFC$ model always achieves the best outcome in terms of the lowest number of portfolios not correctly priced.

With respect to the other covariates included in the $RFFC$, the results on the market, size, value, and momentum betas are consistent with those in the other specifications. In line with De Haan et al. (2012), stakeholder risk factor loadings decrease as corporate responsibility scores increase, and are mostly significant (Panel A, Section β^d_{pw}, columns 1-3). This result confirms that the lower returns for firms with higher responsibility sores are compensated by the reduction of stakeholder risk.

The results for each pairwise combination within the $CSR-ME$ intersections are summarized by considering the GRS statistics, average absolute pricing error ($A|\hat{\alpha}_p|$), average standard error of the pricing error ($A|S(\hat{\alpha}_p)|$), Sharpe Ratio for the alphas ($SR(\hat{\alpha}_p)$), and average R^2. Here, $A|\hat{\alpha}_p|$ gives information about the magnitude of the pricing errors, $A|S(\hat{\alpha}_p)|$ gives information about the precision of the pricing errors, and $SR(\hat{\alpha}_p)$ combines the two. In Table 9, we report the results for the $CSR-ME$ intersections, while in Tables 9B, 9C, and 9D of the Internet Appendices B, C, and D, respectively, we report those for the remaining other intersections ($CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$).

Insert Table 9 About Here

Table 9 shows that in the OA dimension, the GRS test rejects all the models (column 1). Considering the CSR-specific domains, the $FF3$ and $FF5$ models are always rejected, while the FFC and $RFFC$ are rejected just in two over six domains (HR and HRT). Considering $A|\hat{\alpha}_p|$ and $A|S(\hat{\alpha}_p)|$, the $RFFC$ model performs better than the other models do across all domains, including OA (columns 2 and 3). The models that perform better in terms of $SR(\hat{\alpha}_p)$ are the FFC and $RFFC$ models, respectively (column 4), while in terms of the average R^2, the models all achieve similar performance (column 5). Similar results are provided across all the intersections.

In order to verify whether the CSR risk factors are actually priced by financial markets (research hypothesis $H_{0,B}$), we adopt the Fama and MacBeth (1973) two-step procedure using the following specification:

$$\begin{aligned} R^d_{p,t} - R_{f,t} = \;& \lambda^d_{0,t} + \lambda^d_{1,t}\hat{\beta}^d_{pmk} + \lambda^d_{2,t}\hat{\beta}^d_{ps} + +\lambda^d_{3,t}\hat{\beta}^d_{ph} + \\ & +\lambda^d_{4,t}\hat{\beta}^d_{pm} + \lambda^d_{5,t}\hat{\beta}^d_{pr} + \lambda^d_{6,t}\hat{\beta}^d_{pc} + \lambda^d_{7,t}\hat{\beta}^d_{pw} + \epsilon^d_{p,t} \qquad (FM) \end{aligned}$$

where $R^d_{p,t} - R_{f,t}$ is the monthly excess return for the CSR test portfolio p in domain d and month t; $\lambda^d_{0,t}$ is the monthly constant; $\hat{\beta}^d_{pmk}$, $\hat{\beta}^d_{ps}$, $\hat{\beta}^d_{ph}$, $\hat{\beta}^d_{pm}$, $\hat{\beta}^d_{pr}$, $\hat{\beta}^d_{pc}$, and $\hat{\beta}^d_{pw}$ are the estimated factor loadings from the previous models, representing the market, size, value, momentum, profitability, investment, and stakeholder risk, respectively, of portfolio p in CSR domain d; $\lambda^d_{1,t}$, $\lambda^d_{2,t}$, $\lambda^d_{3,t}$, $\lambda^d_{4,t}$, $\lambda^d_{5,t}$, $\lambda^d_{6,t}$, and $\lambda^d_{7,t}$ are the monthly risk premiums for market, size, value, momentum, investment, profitability, and stakeholder risk, respectively, in domain d and month t; and $\epsilon^d_{p,t}$ is the pricing error of portfolio p in domain d. In Table 10, we report the results for the $CSR-ME$ intersection, while in Tables 10B, 10C, and 10D of Internet Appendices B, C, and D, respectively, we report the results for the remaining intersections.

Insert Table 10 About Here

Table 10 shows that $\bar{\hat{\lambda}}^d_0$ is positive and significant for the OA domain in the $FF3$, FFC, and $FF5$ models, but is not significant for the $RFFC$ model (column 1). The average monthly market risk premium ($\bar{\hat{\lambda}}^{d}_{mk}$) is negative and significant in the $FF3$, FFC, and $FF5$ models, and becomes positive and always significant in the $RFFC$ model (column 2). This indicates that the market betas are an important determinant of the cross-section average excess returns. The large intercept and low market premiums in the $FF3$, FFC, and $FF5$ models reflect an empirical security market line that is too "flat" (Cochrane, 2009), but this does not happen for the $RFFC$ model. In addition, the negative market premiums could be the result of the limited variability of the market betas in the $FF3$, FFC, and $FF5$ models, but this is not the case for the $RFFC$ model, with the exception of the ENV and HRT domains. For our purposes, it is worth noting that the average monthly stakeholder risk premium related to WMB^{OA} is positive and significant, indicating that those firms with lower CSR scores pay a premium to compensate investors for their higher exposure to stakeholder risk (column 8). Even after taking into account the lower bound advocated by Harvey et al. (2016), the stakeholder risk premium remains significant. Findings are similar for the other intersections.

4.4 Macroeconomic variables and Mispricing

We now verify i) whether the CSR risk factors proxy a source of macroeconomic risk, and ii) whether the pricing anomalies in the average excess stock returns of responsible stocks are due to mispricing rather than a hidden risk factor component. For the former point, we adopt the methodology proposed by Petkova (2006). We then specify a vector autoregressive process, as follows:

$$\begin{Bmatrix} R_{m,t} \\ DIV_t \\ Term_t \\ Def_t \\ R_{f,t} \\ WMB^d_t \end{Bmatrix} = A \begin{Bmatrix} R_{m,t-1} \\ DIV_{t-1} \\ Term_{t-1} \\ Def_{t-1} \\ R_{f,t-1} \\ WMB^d_{t-1} \end{Bmatrix} + \begin{Bmatrix} u^m_t \\ u^{div}_t \\ u^{term}_t \\ u^{def}_t \\ u^f_t \\ u^w_t, \end{Bmatrix} \tag{1}$$

where $R_{m,t}$ and $R_{m,t-1}$ is the excess of market return in month t and $t-1$, DIV_t and DIV_{t-1} is aggregate dividend yield, $Term_t$ and $Term_{t-1}$ is the term spread, Def_t and Def_{t-1} is the default spread, $R_{f,t}$ and $R_{f,t-1}$ is 1 Month T-Bill rate, WMB^d_t and WMB^d_{t-1} is the specific CSR risk factor in domain d, and u^m_t, u^{div}_t, u^{term}_t, u^{def}_t, u^f_t, and u^w_t are the innovation series for the excess market return, aggregate dividend yield, term spread, default spread, one-month T-bill, and domain-specific CSR risk factors, respectively. Following Petkova (2006) we triangularize the VAR system in equation (1) to estimate the innovations series. In this way, the innovations for the excess of the market are unaffected by those in the other variables, and the innovations for the aggregate dividend yield are affected by those of the excess of the market and are unaffected by the innovations in the other variables, and so on. We then use the excess market returns and the innovation series as estimates for each of the CSR test portfolios in the following model:

$$R^d_{p,t} - R_{f,t} = \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{pdiv} \hat{u}^{div}_t + \beta^d_{pterm} \hat{u}^{term}_t + \\ + \beta^d_{pdef} \hat{u}^{def}_t + \beta^d_{pf} \hat{u}^f_t + \beta^p_{pd} \hat{u}^w_t + u^d_{p,t} \quad (2)$$

where $R^d_{p,t} - R_{f,t}$ is the monthly excess return for the CSR test portfolio p in domain d and month t; α^d_p is the pricing error; $\hat{u}^{div}_t$, $\hat{u}^{term}_t$, $\hat{u}^{def}_t$, $\hat{u}^f_t$ and $\hat{u}^d_t$ are the estimated innovation series for the aggregate dividend yield, term spread, default spread, one-month T-bill, and CSR risk factors, respectively, in domain d. Finally, to check whether the domain-specific CSR risk factor can be considered a source of macroeconomic risk, we relate the monthly excess return to the market and innovations betas using the Fama and MacBeth (1973) two-step procedure, as follows:

$$R^d_{p,t} - R_{f,t} = \lambda^d_{0,t} + \lambda^d_{1,t} \hat{\beta}^d_{pmk} + \lambda^d_{2,t} \hat{\beta}^d_{pdiv} + \lambda^d_{3,t} \hat{\beta}^d_{pterm} + \\ + \lambda^d_{4,t} \hat{\beta}^d_{pdef} + \lambda^d_{5,t} \hat{\beta}^d_{pf} + \lambda^d_{6,t} \hat{\beta}^d_{pw} + \epsilon^d_{p,t} \quad (3)$$

where $\hat{\beta}^d_{pmk}$, $\hat{\beta}^d_{pdiv}$, $\hat{\beta}^d_{pterm}$, $\hat{\beta}^d_{pdef}$, $\hat{\beta}^d_f$, and $\hat{\beta}^p_d$ are estimated using model (2), and represent the market risk, exposure to innovations aggregate dividend yield, term spread, default spread, one-month T-bill, and domain-specific CSR risk factors, respectively, for portfolio p in domain d; $\lambda^d_{1,t}$, $\lambda^d_{2,t}$, $\lambda^d_{3,t}$, $\lambda^d_{4,t}$, $\lambda^d_{5,t}$ and $\lambda^d_{6,t}$ are the monthly risk premiums for market, innovations in aggregate dividend yield, term spread, default spread, one-month T-bill and domain specific CSR risk factors for portfolio p in the CSR domain d; and $\epsilon^d_{p,t}$ is the pricing error of portfolio p in domain d. In Table 11, we report the results for the $CSR-ME$ intersections, while in Tables 11B, 11C, and 11D of Internet Appendices B, C, and D, respectively, we report the results for the remaining intersections.

Insert Table 11 About Here

Table 11 shows that the average monthly premiums related to the market, and all innovations, including one of our CSR risk factors, are always significant in the *OA* domain. The same occurs at the disaggregated CSR domain level and for all the various intersections. These findings imply that our CSR risk factors cannot be considered a proxy for macroeconomic risk.

We now use the methodology provided by Hirshleifer et al. (2012) to test whether the pricing anomalies are due to mispricing. Specifically, we divide each of the nine CSR test portfolios in three additional portfolios by sorting the stocks according to their stakeholder risk factor loadings, estimated using the stock returns of the previous 24 months, and then consider the 30^{th} and the 70^{th} percentiles as cut-offs. We obtain 27 triple-sorted CSR portfolios for each two-by-two combination of the CSR domains and the ME dimension. This procedure is repeated at the end of June of each year. The monthly excess returns for the value-weighted CSR test portfolios are calculated from July of year t to the following June. Then, we estimate the $RFFC$ model for each of the 27 portfolios on the overall sample period, and assign to each firm i the portfolio factor loading of the group to which it belongs. This procedure is repeated at the end of June of each year, and shrinks the firms' individual factor loadings to an average for stocks of similar size, score, and stakeholder risk. In this way, we mitigate the error-in-variable problem. We then relate the firm-level factor loadings and specific variables to their monthly excess returns by estimating the following model:

$$R^d_{i,t} - R_f = \lambda^d_{0,t} + \lambda^d_{1,t}\hat{\beta}^d_{imk} + \lambda^d_{2,t}\hat{\beta}^d_{is} + \lambda^d_{3,t}\hat{\beta}^d_{ih} + \lambda^d_{4,t}\hat{\beta}^d_{im} + \lambda^d_{5,t}\hat{\beta}^d_{iw} + \lambda^d_{6,t} ln(\overline{ME}_i) + \\ + \lambda^d_{7,t} ln(\overline{BE/ME}_i) + \lambda^d_{8,t}\bar{R}_i(t-2, t-12) + \lambda^d_{9,t}\bar{S}^d_i + \epsilon^d_{it}, \quad (4)$$

where $R^d_{i,t} - R_f$ is the monthly excess return for firm i in domain d and month t; $\lambda^d_{0,t}$ is the monthly constant; $\hat{\beta}^d_{imk}$, $\hat{\beta}^d_{is}$, $\hat{\beta}^d_{ih}$, $\hat{\beta}^d_{im}$,$\hat{\beta}^d_{ir}$, $\hat{\beta}^d_{ic}$, and $\hat{\beta}^d_{iw}$ are the estimated betas from the $RFFC$ model, and denote the market, size, value, momentum, and stakeholder risk, respectively, for firm i in domain d; $ln(\overline{ME}_i)$ is the natural logarithm of the average annual market value of equity for firm i; $ln(\overline{BE/ME}_i)$ is the natural logarithm of the average annual book-to-market ratio value for firm i; $\bar{R}_i(t-2, t-12)$ is the average annual return from month -12 to month -2 for firm i; $\bar{S}^d_i$ is the average annual score for firm i; $\lambda^d_{1,t}$, $\lambda^d_{2,t}$, $\lambda^d_{3,t}$, $\lambda^d_{4,t}$, and $\lambda^d_{5,t}$ are the monthly risk premiums for the market, size, value, momentum, and stakeholder risk, respectively, in domain d and month t; $\lambda^d_{6,t}$, $\lambda^d_{7,t}$, and $\lambda^d_{8,t}$ $\lambda^d_{9,t}$ are the monthly risk premiums related to the firm-specific variable listed above; and ϵ^d_i is the pricing error for firm i in domain d. In Table 12, we report the results.

Insert Table 12 About Here

Table 12 confirms the results shown in Table 10. Indeed, the monthly average risk premiums of the CSR risk factor in domain OA are always strongly significant (column 6). The same occurs at disaggregated domain level. This indicates that the CSR risk factor loadings are a significant explanatory variable in the cross-section of excess stock returns, and that stakeholder risk is not due to mispricing, but rather to a hidden systematic risk component captured by our CSR risk factors.

5 Robustness Checks

In order to check whether our results are robust, we verify if they change using: i) the in-sample version of the SMB, HML, MOM, RMW and CMA risk factors, and ii) the equally-weighted (instead of the value-weighted) CSR test portfolios. Results concerning the in-sample risk factors for the $CSR-ME$, $CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$ intersections are reported in the Internet Appendices E, F, G, and H respectively. In order to save space, results for the equally-weighted CSR test portfolios are discussed but not reported (with additional details being available upon request).

Tables 4E, 5E, and 6E show that in the OA domain for the $CSR-ME$ intersection, the $FF3$, FFC and $FF5$ models are unable to correctly price excess returns in five out of nine test portfolios. While Table 8E shows that the $RFFC$ model reduces to two the number of not correctly priced CSR test portfolios.

Looking at all domains for the CSR-ME intersection which counts for 63 test portfolios, Tables 4E, 5E, 6E, and 8E, show that 34 portfolios are not correctly priced for the $FF3$ model, 36 are not correctly priced for the FFC model, 33 are not correctly priced for the $FF5$ model, and 27 are not correctly priced for the $RFFC$ model.

With respect to the cross-section of alphas, the GRS test rejects all the models (Table 9E, column 1). The $RFFC$ model performs better than the other models when considering the $A|\hat{\alpha}_p|$, $A|S(\hat{\alpha}_p)|$, and $SR(\hat{\alpha}_p)$ (in columns 2, 3 and 4, Table 9E), while it achieves similar results in terms of average R^2 (column 5).

Even though all the in-sample risk factors yield worse results in terms of not correctly priced CSR portfolios, the stakeholder risk is priced in the cross-section of stocks returns for all the domains (overall and at disaggregated level, Table 10E, column 8). Similar results hold for the remaining intersections ($CSR-BE/ME$, $CSR-OP$ and $CSR-Inv$).

As outlined by Pae and Sabbaghi (2015), adopting the equally- or value-weighted scheme for portfolio composition lead to different exposition to the systematic risk sources due to capital structure and tax shield firm characteristics. In order to check if such differences might affect our previous results we repeat our analysis with the equally-weighted specification for the CSR test portfolios in the $CSR-ME$ intersection. Our results show that, out of the 63 test portfolios across all the domains, 11 of them are not correctly priced for the $FF3$ model, 6 are not correctly priced for the FFC model, 9 are not correctly priced for the $FF5$ model, and all the portfolios are correctly priced for the $RFFC$.

Looking at the cross-section of pricing anomalies, the GRS test often rejects the $FF3$ and $FF5$ models, while it accepts the FFC and $RFFC$ models. In terms of $A|\hat{\alpha}_p|$, $A|S(\hat{\alpha}_p)|$ and $SR(\hat{\alpha}_p)$, the $RFFC$ model outperforms the other models most of times.

Finally, even in the case of equally-weighted CSR test portfolios, the stakeholder risk is priced in the cross-section of stock returns. Similar results hold for the remaining intersections.

6 Conclusion

CSR is a phenomenon of growing relevance in contemporary global markets. On the one hand, CSR implies a shift of focus from straightforward profit maximization to the satisfaction of interests of a wider range of stakeholders. On the other hand, by doing so it reduces the risk of conflict with stakeholders. The importance of CSR in contemporary economics is confirmed by the increasing value of assets under management that use SRI standards. A possible explanation for this upward trend (other than changes in investors' tastes) is that, firms with high CSR scores exhibit more favorable risk characteristics. Even though it is still an open question whether and to what extent responsible investments are able to generate significantly different risk-adjusted returns, they can be used to reduce the exposure to stakeholder risk.

We add to the existing literature on SRI in three ways. Specifically, we test i) whether portfolios of firms with different scores in the various CSR domains present pricing anomalies that can be captured by introducing risk factors that account for exposure to stakeholder risk, ii) whether this risk source is priced in the cross-section of stock returns. Additionally, we conduct our analysis at the disaggregated CSR domain level by introducing domain-specific CSR test portfolios and risk factors.

Our findings show that excess stock returns of CSR-sorted portfolios decrease as corporate CSR levels increase. We refer to this pattern as the *responsibility effect*. This pattern is related to the existence of pricing anomalies, which, in general, vary in number across all the domains under analysis. Furthermore, even though our domain-specific CSR risk factors accounting for stakeholder risk exposure are not able to capture all pricing anomalies, we find that they reduce the average absolute pricing anomalies and their standard errors. In addition, we show that the stakeholder risk is priced in the cross-section of returns, and that the higher returns of firms with lower CSR levels are justified by their greater exposure to stakeholder risk. The latter is related to different premiums depending on the CSR domain. The different numbers of pricing anomalies across the domains, and the different premiums related to the stakeholder risk confirm that the heterogeneous nature of CSR has to be taken into account. Additionally, we test whether our CSR risk factors represent a source of macroeconomic risk and whether the CSR pricing anomalies are due to mispricing. Both tests confirm our initial results, indicating that the stakeholder risk is indeed an additional risk source to those considered so far in the literature. Our results are robust to the in-sample version of the most commonly used risk factors, and to the equally-weighted specification for the CSR test portfolios.

Overall, the findings reported in this paper show that firms with lower CSR scores experience higher exposure to stakeholder risk and, thus, they have to pay a premium to investors in equilibrium in order to compensate them for their higher risk exposure. On the other hand, responsible investors screen out firms that have a higher probability of facing future litigation with stakeholders from their opportunity set and, consequently, the lower demand for the screened stocks leads to a return premium on these assets, in equilibrium.

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Table 1: Domain Specific Descriptive Statistics

The table reports the main descriptive statistics for the overall CSR score (*OA*) and the following six CSR domains: Business Behavior (*BB*), Corporate Governance (*CG*), Community Involvement Global (*CIN*), Environment (*ENV*), Human Resources (*HR*), Human Rights (*HRT*).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
CSR Domain (d)	*Mean*	*Min*	*Max*	*P50*	*St.dev*	*Skew*	*Kurt*	*P10*	*P20*	*P30*	*P40*	*P60*	*P70*	*P80*	*P90*	*N*
OA	41.01	30.00	76.00	39.00	8.38	0.70	2.76	31.00	33.00	35.00	37.00	42.00	45.00	49.00	53.00	10576
BB	42.60	0.00	82.00	42.00	10.66	0.31	3.03	30.00	34.00	37.00	39.00	45.00	48.00	51.00	57.00	10576
CG	52.07	0.00	100.00	53.00	14.35	-0.34	3.12	33.00	41.00	46.00	49.00	56.00	60.00	64.00	70.00	10576
CIN	38.02	0.00	94.00	36.00	16.05	0.41	2.85	19.00	24.00	29.00	33.00	41.00	46.00	52.00	61.00	10576
ENV	38.33	0.00	86.00	38.00	14.11	0.09	2.78	20.00	26.00	30.00	34.00	42.00	46.00	50.00	57.00	10576
HR	33.58	2.00	81.00	31.00	14.00	0.55	2.75	17.00	21.00	25.00	28.00	36.00	40.00	46.00	54.00	10576
HRT	42.13	0.00	86.00	41.00	12.40	0.46	2.97	27.00	31.00	35.00	38.00	44.00	48.00	53.00	59.00	10576

Table 2: Average Monthly Excess Returns, Yearly Responsibility Measures and Number of firms for the Value Weighted CSR Decile Portfolios

At the end of June of each year stocks are sorted over all the CSR domain (d) using only the scores available until to June of year t and the distribution deciles as cut-offs for portfolio composition. Value weighted monthly excess returns for the CSR decile portfolios are calculated from July of year t to the following June. Each portfolio has a time series of 142 observations. Average monthly excess return and average yearly responsibility measures are computed across all the sample period. *Worst* is the portfolio composed by firms with the lowest CSR scores and *Best* is the portfolio composed by firms with the highest CSR scores. *Diff* is the difference portfolio built as difference between the *Worst* and *Best* portfolios (*Diff* = *Worst* - *Best*). Domain specific t-statistic (τ^d) on the difference in average returns between the *Worst* and *Best* portfolios are in square brackets.

Panel A

Avg. Monthly Excess Returns for Single Portfolio (%)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CSR Domain (d)	*Worst*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*Best*	*Diff*
OA	0.73	0.75	0.43	0.59	0.55	0.46	0.45	0.43	0.36	0.03	0.70
[τ^{OA}]											[1.06]
BB	0.62	0.40	0.63	0.59	0.53	0.48	0.33	0.20	0.38	0.37	0.25
[τ^{BB}]											[0.39]
CG	0.41	0.40	0.55	0.49	0.48	0.60	0.37	0.36	0.38	0.20	0.21
[τ^{CG}]											[0.35]
CIN	0.72	0.47	0.49	0.65	0.70	0.50	0.36	0.47	0.26	0.25	0.46
[τ^{CIN}]											[0.75]
ENV	0.64	0.64	0.56	0.56	0.52	0.58	0.40	0.36	0.35	0.27	0.37
[τ^{ENV}]											[0.59]
HR	0.78	0.72	0.48	0.57	0.55	0.26	0.39	0.33	0.31	0.08	0.70
[τ^{HR}]											[1.01]
HRT	0.65	0.84	0.49	0.60	0.55	0.44	0.37	0.32	0.34	0.23	0.42
[τ^{HRT}]											[0.71]

Panel B

Avg. Yearly Responsibility Scores for Single Portfolio

CSR Domain (d)	*Worst*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*Best*
OA	30.69	32.85	34.98	37.21	39.45	41.83	44.43	47.75	51.95	58.46
BB	25.91	32.58	36.17	39.10	41.93	44.62	47.48	50.82	55.00	63.27
CG	25.56	37.45	43.20	47.30	50.89	54.44	58.36	63.01	68.08	76.09
CIN	13.60	22.77	28.17	32.66	37.24	41.44	45.86	50.92	57.68	69.90
ENV	14.95	24.11	29.10	33.05	36.82	40.62	44.39	48.67	54.51	64.38
HR	14.45	20.69	24.74	28.11	31.55	35.31	39.56	44.50	51.01	61.94
HRT	24.89	31.42	35.04	38.27	41.18	44.22	47.60	51.91	57.22	66.96

Panel C

Avg. Yearly Number of Firms Single Portfolio

CSR Domain (d)	*Worst*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*Best*
OA	104.08	88.42	88.00	86.08	78.00	77.67	83.50	83.58	81.83	75.67
BB	95.75	84.50	92.25	91.50	79.17	81.25	82.42	78.92	84.25	76.83
CG	90.75	87.08	86.83	85.42	87.00	80.92	84.33	90.25	75.75	78.50
CIN	93.33	86.08	85.75	86.83	85.00	87.92	80.58	78.75	85.33	77.25
ENV	92.67	85.58	90.83	80.58	86.83	86.67	78.25	86.42	82.33	76.67
HR	94.42	89.17	83.92	84.17	84.75	83.08	79.17	85.25	83.08	79.83
HRT	98.50	82.08	93.08	83.58	77.50	85.75	81.67	83.08	83.58	78.00

Table 3: Average Monthly Excess Returns and Average Yearly Responsibility Scores and Number of firms for the 3x3 Value Weighted CSR Test Portfolios

At the end of June of each year stocks are sorted over each CSR domains (d) and size (ME) dimension using for the CSR domains only the scores available until to June of year t and the 30^{th} and 70^{th} percentile as cut-offs for the portfolio composition. Value weighted monthly excess returns for the CSR test portfolios are calculated from July of year t to the following June. Each portfolio has a time series of 142 observations. Average monthly excess returns, average yearly responsibility scores and number of firms are computed across all the sample period. *Worst* is the portfolio composed by firms with the lowest CSR scores, *Best* is the portfolio composed by firms with the highest CSR scores and *Intermediate (Int.)* is the portfolio composed by firms with CSR scores higher than those in the Worst portfolio and lower then those in the Best portfolio. *Diff* is the difference portfolio built as difference between the *Worst* and *Best* row portfolios (*Diff* = *Worst* - *Best*). Domain specific t-statistic (τ^d) on the difference in average returns between the *Worst* and *Best* portfolios are in square brackets.

		Avg. Monthly Excess Return for Single Portfolio (%)			Avg. Yearly Responsibility Score for Single Portfolio			Avg. Yearly Number of Firms for Single Portfolio		
	CSR Domain (d)	*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.51	0.65	0.65	32.60	32.63	33.14	99.25	122.50	58.75
	Intermediate	0.55	0.46	0.50	40.50	40.56	40.97	104.08	128.17	92.42
	Best	0.50	0.46	0.23	51.23	52.39	53.0	50.75	88.08	102.83
	Diff = *Worst* - *Best*	0.00	0.18	0.43						
	[τ^{OA}]	[0.01]	[0.29]	[0.71]						
BB	*Worst*	0.50	0.51	0.55	30.77	31.71	32.40	106.67	105.75	60.08
	Int.	0.50	0.54	0.45	42.92	43.15	43.38	90.58	136.92	106.25
	Best	0.61	0.52	0.27	55.37	56.18	56.64	56.83	96.08	87.67
	Diff	-0.11	0.00	0.28						
	[τ^{BB}]	[-0.15]	[-0.01]	[0.46]						
CG	*Worst*	0.54	0.44	0.44	34.21	34.90	36.33	84.50	113.75	61.58
	Int.	0.56	0.69	0.47	52.89	52.62	52.29	86.83	134.25	121.17
	Best	0.50	0.41	0.31	69.16	68.73	68.39	82.75	90.75	71.25
	Diff	0.05	0.03	0.13						
	[τ^{CG}]	[0.06]	[0.05]	[0.24]						
CIN	*Worst*	0.58	0.56	0.57	20.92	21.29	22.49	97.58	114.25	53.33
	Int.	0.50	0.56	0.52	38.63	39.00	39.95	103.50	133.75	102.42
	Best	0.37	0.45	0.30	58.28	58.28	60.70	53.00	90.75	98.25
	Diff	0.22	0.11	0.27						
	[τ^{CIN}]	[0.29]	[0.17]	[0.48]						
ENV	*Worst*	0.51	0.59	0.60	22.11	22.53	23.83	95.67	118.08	52.83
	Int.	0.56	0.54	0.49	38.16	38.57	39.19	105.17	131.00	98.67
	Best	0.47	0.41	0.30	54.24	55.85	55.95	53.25	89.67	102.50
	Diff	0.03	0.17	0.30						
	[τ^{ENV}]	[0.05]	[0.26]	[0.49]						
HR	*Worst*	0.44	0.63	0.69	20.22	19.84	19.28	83.75	110.83	72.33
	Int.	0.70	0.54	0.41	33.44	33.47	33.77	103.50	132.67	95.58
	Best	0.45	0.38	0.19	50.45	52.37	53.51	66.83	95.25	86.08
	Diff	-0.01	0.24	0.50						
	[τ^{HR}]	[-0.01]	[0.37]	[0.81]						
HRT	*Worst*	0.51	0.57	0.71	29.75	30.41	31.12	103.67	109.17	60.83
	Int.	0.47	0.51	0.46	42.70	42.61	43.23	100.42	139.75	88.33
	Best	0.66	0.51	0.24	57.77	58.43	58.86	50.00	89.83	104.83
	Diff	-0.15	0.06	0.47						
	[τ^{HRT}]	[-0.21]	[0.10]	[0.83]						

Table 4: FF3 Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

We estimated the three-factor Fama-French model ($FF3$) for each CSR test portfolio included into the pairwise combinations among each CSR domain and the ME dimension:

$$R^d_{p,t} - R_{f,t} = \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + u^d_{p,t} \quad (FF3)$$

where $R^d_{p,t} - R_{f,t}$ is the excess return of the CSR test portfolio p in domain d and month t; α^d_p is the pricing anomaly of portfolio p in domain d; $R_{m,t}$ is the excess return of the stock market index used as benchmark in month t; SMB_t is the size risk factor in month t; HML_t is the value risk factor in month t and $u^d_{p,t}$ is the error term for portfolio p in domain d and month t. For other variables definition see Table 3.
In **bold** appear the alphas of CSR test portfolios not correctly priced by the model according to a $p - value < 0.05$.

		Panel A			Panel B		
			$\hat{\alpha}^d_p$			$\tau[\hat{\alpha}^d_p]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		Small	Medium	Big	Small	Medium	Big
OA	Worst	0.21	0.05	0.06	[-1.37]	[0.54]	[0.51]
	Intermediate	-0.22	**-0.23**	-0.03	[-1.18]	[-2.31]	[-0.25]
	Best	-0.25	-0.26	**-0.41**	[-1.09]	[-1.78]	[-3.86]
BB	Worst	-0.24	-0.12	-0.03	[-1.44]	[-1.26]	[-0.23]
	Int.	-0.27	-0.12	-0.08	[-1.47]	[-1.33]	[-0.92]
	Best	-0.14	-0.19	**-0.40**	[-0.73]	[-1.50]	[-3.51]
CG	Worst	-0.17	-0.23	-0.10	[-0.90]	[-1.94]	[-0.95]
	Int.	-0.22	0.01	-0.12	[-1.20]	[0.12]	[-1.32]
	Best	-0.26	**-0.25**	**-0.30**	[-1.21]	[-2.01]	[-2.65]
CIN	Worst	-0.15	-0.09	0.03	[-0.95]	[-0.92]	[0.20]
	Int.	-0.26	-0.11	-0.09	[-1.47]	[-1.20]	[-0.81]
	Best	-0.41	-0.22	**-0.29**	[-1.50]	[-1.77]	[-3.13]
ENV	Worst	-0.24	-0.07	-0.04	[-1.40]	[-0.67]	[-0.27]
	Int.	-0.19	-0.12	-0.05	[-1.09]	[-1.28]	[-0.50]
	Best	-0.29	**-0.29**	**-0.33**	[-1.17]	[-2.09]	[-3.50]
HR	Worst	-0.29	0.01	0.12	[-1.58]	[0.11]	[0.88]
	Int.	-0.06	-0.10	-0.13	[-0.36]	[-1.07]	[-1.41]
	Best	-0.31	**-0.37**	**-0.47**	[-1.42]	[-2.29]	[-3.75]
HRT	Worst	-0.24	-0.06	**0.22**	[-1.35]	[-0.57]	[2.35]
	Int.	-0.29	-0.15	-0.12	[-1.84]	[-1.55]	[-1.15]
	Best	-0.08	-0.21	**-0.41**	[-0.37]	[-1.70]	[-4.03]
			$\hat{\beta}^d_{pmk}$			$\tau[\hat{\beta}^d_{pmk}]$	
CSR Domain (d)		Small	Medium	Big	Small	Medium	Big
OA	Worst	1.17	1.00	1.03	[34.29]	[50.82]	[35.89]
	Int.	1.27	1.17	0.93	[30.10]	[52.37]	[40.68]
	Best	1.23	1.21	1.12	[23.39]	[37.01]	[47.07]
BB	Worst	1.22	1.08	1.02	[32.02]	[49.29]	[31.36]
	Int.	1.25	1.12	0.94	[30.62]	[54.94]	[46.07]
	Best	1.21	1.18	1.16	[28.62]	[41.58]	[45.68]
CG	Worst	1.15	1.10	0.95	[27.57]	[41.94]	[40.85]
	Int.	1.30	1.14	1.04	[31.05]	[52.32]	[49.46]
	Best	1.24	1.11	1.07	[25.46]	[39.36]	[41.59]
CIN	Worst	1.20	1.10	0.97	[34.68]	[48.51]	[32.23]
	Int.	1.24	1.14	1.06	[31.11]	[53.39]	[42.56]
	Best	1.24	1.12	1.04	[20.27]	[39.11]	[50.30]
ENV	Worst	1.22	1.09	1.09	[32.10]	[48.94]	[35.27]
	Int.	1.23	1.11	0.94	[31.26]	[53.54]	[44.22]
	Best	1.23	1.18	1.10	[22.33]	[38.05]	[51.83]
HR	Worst	1.20	1.04	1.00	[28.87]	[46.14]	[32.81]
	Int.	1.24	1.08	0.94	[33.30]	[49.47]	[43.71]
	Best	1.23	1.26	1.17	[25.31]	[34.96]	[40.94]
HRT	Worst	1.22	1.07	0.88	[30.00]	[47.14]	[42.39]
	Int.	1.24	1.12	1.02	[34.97]	[50.18]	[44.46]
	Best	1.20	1.20	1.14	[24.73]	[42.82]	[49.71]

Table 4 (continued): FF3 Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

		Panel A			Panel B		
			$\hat{\beta}^{d}_{ps}$			$\tau[\hat{\beta}^{d}_{ps}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.49	0.22	-0.20	[4.62]	[3.52]	[-2.20]
	Int.	0.42	0.13	-0.27	[3.16]	[1.85]	[-3.81]
	Best	0.53	0.16	-0.34	[3.26]	[1.59]	[-4.66]
BB	*Worst*	0.47	0.14	-0.21	[3.98]	[2.13]	[-2.12]
	Int.	0.52	0.14	-0.31	[4.07]	[2.16]	[-4.96]
	Best	0.41	0.24	-0.31	[3.10]	[2.71]	[-3.97]
CG	*Worst*	0.52	0.27	-0.31	[4.00]	[3.30]	[-4.34]
	Int.	0.40	0.12	-0.29	[3.10]	[1.78]	[-4.42]
	Best	0.52	0.11	-0.25	[3.46]	[1.21]	[-3.18]
CIN	*Worst*	0.40	0.13	-0.34	[3.68]	[1.79]	[-3.65]
	Int.	0.53	0.10	-0.22	[4.26]	[1.56]	[-2.90]
	Best	0.58	0.29	-0.32	[3.06]	[3.24]	[-4.99]
ENV	*Worst*	0.41	0.19	-0.04	[3.46]	[2.69]	[-0.43]
	Int.	0.49	0.18	-0.31	[4.01]	[2.86]	[-4.63]
	Best	0.58	0.13	-0.33	[3.40]	[1.39]	[-5.08]
HR	*Worst*	0.52	0.13	-0.33	[4.06]	[1.92]	[-3.46]
	Int.	0.45	0.24	-0.19	[3.92]	[3.47]	[-2.90]
	Best	0.42	0.13	-0.39	[2.78]	[1.15]	[-4.37]
HRT	*Worst*	0.48	0.04	-0.30	[3.83]	[0.61]	[-4.67]
	Int.	0.49	0.21	-0.25	[4.48]	[3.05]	[-3.47]
	Best	0.41	0.25	-0.34	[2.74]	[2.83]	[-4.74]
			$\hat{\beta}^{d}_{ph}$			$\tau[\hat{\beta}^{d}_{ph}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.16	0.00	-0.05	[1.77]	[-0.08]	[-0.67]
	Int.	0.34	0.14	0.16	[2.94]	[2.32]	[2.67]
	Best	0.46	0.25	0.09	[3.25]	[2.87]	[1.37]
BB	*Worst*	0.10	0.01	0.13	[0.94]	[0.12]	[1.51]
	Int.	0.44	0.10	0.04	[4.01]	[1.78]	[0.80]
	Best	0.40	0.27	0.09	[3.49]	[3.52]	[1.34]
CG	*Worst*	0.46	0.11	0.05	[4.10]	[1.61]	[0.73]
	Int.	0.20	0.14	0.14	[1.75]	[2.35]	[2.52]
	Best	0.20	0.12	0.05	[1.56]	[1.53]	[0.66]
CIN	*Worst*	0.10	0.04	0.03	[1.09]	[0.69]	[0.42]
	Int.	0.33	0.13	0.16	[3.11]	[2.25]	[2.39]
	Best	0.58	0.19	0.07	[3.50]	[2.48]	[1.19]
ENV	*Worst*	0.29	0.13	-0.02	[2.86]	[2.23]	[-0.21]
	Int.	0.26	0.02	0.07	[2.49]	[0.42]	[1.17]
	Best	0.38	0.23	0.13	[2.55]	[2.76]	[2.36]
HR	*Worst*	0.12	0.08	0.05	[1.06]	[1.24]	[0.60]
	Int.	0.32	0.01	0.08	[3.17]	[0.13]	[1.31]
	Best	0.47	0.32	0.15	[3.55]	[3.24]	[1.89]
HRT	*Worst*	0.27	0.03	-0.09	[2.48]	[0.53]	[-1.67]
	Int.	0.23	0.14	0.07	[2.43]	[2.27]	[1.17]
	Best	0.43	0.19	0.21	[3.26]	[2.54]	[3.42]

Table 5: FFC Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

We estimated the four-factor Fama-French-Carhart model (FFC) for each CSR test portfolio included into the pairwise combinations among each CSR domain and the ME dimension:

$$R^d_{p,t} - R_{f,t} = \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + \beta^d_{pm} MoM_t + u^d_{p,t} \quad (FFC)$$

where $R^d_{pt} - R_{ft}$ is the excess return of the CSR test portfolio p in domain d and month t; α^d_p is the pricing anomaly of portfolio p in domain d; $R_{m,t}$ is the excess return of the stock market index used as benchmark in month t; SMB_t is the size risk factor in month t; HML_t is the value risk factor in month t; MoM_t is the momentum risk factor in month t and $u^d_{p,t}$ is the error term for portfolio p in domain d and month t. For other variables definition see Table 3.
In **bold** appear the alphas of CSR test portfolios not correctly priced by the model according to a $p - value < 0.05$.

		Panel A			Panel B		
			$\hat{\alpha}^d_p$			$\tau[\hat{\alpha}^d_p]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.11	0.07	0.11	[-0.78]	[0.84]	[0.90]
	Intermediate	-0.11	-0.14	-0.01	[-0.63]	[-1.63]	[-0.14]
	Best	-0.12	-0.18	**-0.37**	[-0.52]	[-1.30]	[-3.54]
BB	*Worst*	-0.14	-0.07	0.00	[-0.87]	[-0.77]	[-0.01]
	Int.	-0.14	-0.07	-0.10	[-0.83]	[-0.79]	[-1.09]
	Best	-0.04	-0.10	**-0.32**	[-0.23]	[-0.83]	[-3.02]
CG	*Worst*	-0.11	-0.18	-0.09	[-0.61]	[-1.55]	[-0.83]
	Int.	-0.13	0.08	-0.10	[-0.71]	[0.84]	[-1.10]
	Best	-0.09	-0.17	**-0.25**	[-0.47]	[-1.42]	[-2.27]
CIN	*Worst*	-0.06	-0.05	0.06	[-0.42]	[-0.55]	[0.46]
	Int.	-0.17	-0.04	-0.08	[-0.99]	[-0.46]	[-0.68]
	Best	-0.20	-0.15	**-0.25**	[-0.80]	[-1.21]	[-2.78]
ENV	*Worst*	-0.12	-0.02	0.02	[-0.76]	[-0.20]	[0.12]
	Int.	-0.11	-0.05	-0.05	[-0.65]	[-0.58]	[-0.48]
	Best	-0.15	-0.21	**-0.28**	[-0.63]	[-1.59]	[-3.09]
HR	*Worst*	-0.15	0.06	0.17	[-0.89]	[0.60]	[1.28]
	Int.	0.03	-0.05	-0.13	[0.21]	[-0.52]	[-1.34]
	Best	-0.21	-0.27	**-0.43**	[-1.01]	[-1.79]	[-3.42]
HRT	*Worst*	-0.10	-0.01	**0.22**	[-0.63]	[-0.14]	[2.41]
	Int.	-0.19	-0.08	-0.10	[-1.26]	[-0.86]	[-1.00]
	Best	-0.01	-0.14	**-0.35**	[-0.06]	[-1.19]	[-3.60]
			$\hat{\beta}^d_{pmk}$			$\tau[\hat{\beta}^d_{pmk}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	1.13	0.99	1.01	[33.71]	[48.61]	[34.32]
	Int.	1.22	1.13	0.92	[29.20]	[55.64]	[38.66]
	Best	1.16	1.17	1.10	[22.49]	[35.93]	[45.10]
BB	*Worst*	1.17	1.05	1.00	[31.34]	[48.17]	[29.72]
	Int.	1.19	1.09	0.95	[30.38]	[54.31]	[44.50]
	Best	1.17	1.13	1.12	[27.47]	[42.18]	[45.97]
CG	*Worst*	1.12	1.08	0.95	[26.10]	[40.30]	[38.82]
	Int.	1.26	1.11	1.03	[29.94]	[52.59]	[47.10]
	Best	1.16	1.07	1.04	[25.46]	[39.39]	[40.02]
CIN	*Worst*	1.16	1.08	0.95	[33.68]	[46.61]	[30.58]
	Int.	1.20	1.11	1.05	[29.98]	[55.23]	[40.45]
	Best	1.15	1.08	1.02	[19.86]	[38.62]	[48.40]
ENV	*Worst*	1.17	1.07	1.07	[31.88]	[47.56]	[33.73]
	Int.	1.19	1.08	0.94	[29.94]	[54.95]	[42.15]
	Best	1.17	1.15	1.08	[21.36]	[37.15]	[50.40]
HR	*Worst*	1.14	1.02	0.98	[28.98]	[44.74]	[31.32]
	Int.	1.20	1.06	0.94	[32.34]	[48.76]	[41.61]
	Best	1.19	1.22	1.15	[24.04]	[34.14]	[39.17]
HRT	*Worst*	1.16	1.05	0.87	[30.21]	[45.53]	[40.31]
	Int.	1.20	1.08	1.01	[34.60]	[51.48]	[42.27]
	Best	1.17	1.17	1.11	[23.35]	[41.93]	[48.90]

Table 5 (continued): FFC Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

		Panel A			Panel B		
			$\hat{\beta}^d_{ps}$			$\tau[\hat{\beta}^d_{ps}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.49	0.22	-0.20	[4.92]	[3.56]	[-2.25]
	Int.	0.41	0.13	-0.27	[3.33]	[2.12]	[-3.81]
	Best	0.53	0.16	-0.34	[3.45]	[1.66]	[-4.74]
BB	*Worst*	0.47	0.14	-0.21	[4.22]	[2.22]	[-2.13]
	Int.	0.51	0.14	-0.31	[4.41]	[2.27]	[-4.96]
	Best	0.41	0.24	-0.31	[3.21]	[2.97]	[-4.31]
CG	*Worst*	0.52	0.27	-0.31	[4.04]	[3.37]	[-4.33]
	Int.	0.40	0.12	-0.29	[3.23]	[1.91]	[-4.44]
	Best	0.52	0.11	-0.25	[3.85]	[1.31]	[-3.26]
CIN	*Worst*	0.40	0.13	-0.34	[3.85]	[1.82]	[-3.68]
	Int.	0.53	0.10	-0.22	[4.43]	[1.73]	[-2.90]
	Best	0.58	0.29	-0.32	[3.38]	[3.45]	[-5.10]
ENV	*Worst*	0.41	0.19	-0.04	[3.75]	[2.78]	[-0.44]
	Int.	0.49	0.18	-0.31	[4.13]	[3.15]	[-4.61]
	Best	0.58	0.13	-0.33	[3.58]	[1.45]	[-5.26]
HR	*Worst*	0.52	0.13	-0.33	[4.50]	[1.98]	[-3.54]
	Int.	0.45	0.23	-0.19	[4.11]	[3.65]	[-2.89]
	Best	0.42	0.13	-0.39	[2.86]	[1.21]	[-4.45]
HRT	*Worst*	0.48	0.04	-0.30	[4.24]	[0.62]	[-4.66]
	Int.	0.49	0.21	-0.25	[4.81]	[3.36]	[-3.47]
	Best	0.41	0.24	-0.34	[2.77]	[2.97]	[-4.99]
			$\hat{\beta}^d_{ph}$			$\tau[\hat{\beta}^d_{ph}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.02	-0.04	-0.12	[0.23]	[-0.78]	[-1.54]
	Int.	0.18	0.01	0.15	[1.52]	[0.18]	[2.26]
	Best	0.25	0.14	0.03	[1.78]	[1.55]	[0.51]
BB	*Worst*	-0.06	-0.07	0.08	[-0.57]	[-1.13]	[0.92]
	Int.	0.25	0.02	0.07	[2.34]	[0.36]	[1.16]
	Best	0.26	0.13	-0.02	[2.21]	[1.76]	[-0.37]
CG	*Worst*	0.38	0.04	0.03	[3.20]	[0.60]	[0.44]
	Int.	0.06	0.04	0.11	[0.48]	[0.71]	[1.89]
	Best	-0.05	-0.01	-0.03	[-0.38]	[-0.17]	[-0.35]
CIN	*Worst*	-0.02	-0.01	-0.02	[-0.24]	[-0.22]	[-0.22]
	Int.	0.20	0.02	0.14	[1.81]	[0.34]	[1.96]
	Best	0.27	0.07	0.01	[1.67]	[0.95]	[0.24]
ENV	*Worst*	0.12	0.06	-0.10	[1.17]	[1.02]	[-1.13]
	Int.	0.15	-0.08	0.07	[1.35]	[-1.48]	[1.08]
	Best	0.17	0.12	0.07	[1.13]	[1.37]	[1.16]
HR	*Worst*	-0.09	0.00	-0.03	[-0.87]	[0.08]	[-0.34]
	Int.	0.18	-0.08	0.07	[1.78]	[-1.27]	[1.11]
	Best	0.33	0.18	0.08	[2.41]	[1.81]	[0.97]
HRT	*Worst*	0.06	-0.03	-0.11	[0.61]	[-0.51]	[-1.78]
	Int.	0.08	0.02	0.05	[0.82]	[0.42]	[0.78]
	Best	0.33	0.09	0.13	[2.38]	[1.16]	[2.02]

Table 5 (continued): FFC Pricing Anomalies and Risk Factors Betas the 3x3 Value Weighted CSR Test Portfolios

		Panel A			Panel B		
			$\hat{\beta}^{d}_{pm}$			$\tau[\hat{\beta}^{d}_{pm}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.20	-0.06	-0.10	[-4.48]	[-2.04]	[-2.62]
	Int.	-0.23	-0.18	-0.02	[-4.04]	[-6.72]	[-0.69]
	Best	-0.29	-0.16	-0.08	[-4.20]	[-3.68]	[-2.34]
BB	*Worst*	-0.22	-0.11	-0.07	[-4.37]	[-3.63]	[-1.48]
	Int.	-0.27	-0.11	0.03	[-5.10]	[-4.08]	[1.18]
	Best	-0.20	-0.20	-0.17	[-3.48]	[-5.46]	[-5.03]
CG	*Worst*	-0.12	-0.10	-0.02	[-2.01]	[-2.77]	[-0.73]
	Int.	-0.20	-0.14	-0.04	[-3.58]	[-4.83]	[-1.41]
	Best	-0.36	-0.18	-0.10	[-5.86]	[-5.02]	[-2.88]
CIN	*Worst*	-0.18	-0.08	-0.08	[-3.80]	[-2.54]	[-1.80]
	Int.	-0.19	-0.16	-0.03	[-3.56]	[-5.85]	[-0.81]
	Best	-0.44	-0.17	-0.07	[-5.73]	[-4.45]	[-2.61]
ENV	*Worst*	-0.25	-0.10	-0.11	[-5.05]	[-3.33]	[-2.68]
	Int.	-0.17	-0.15	0.00	[-3.09]	[-5.58]	[-0.06]
	Best	-0.30	-0.16	-0.09	[-4.06]	[-3.95]	[-3.30]
HR	*Worst*	-0.30	-0.10	-0.11	[-5.72]	[-3.26]	[-2.68]
	Int.	-0.19	-0.12	-0.01	[-3.89]	[-4.06]	[-0.31]
	Best	-0.20	-0.20	-0.10	[-2.94]	[-4.10]	[-2.43]
HRT	*Worst*	-0.30	-0.09	-0.02	[-5.74]	[-2.97]	[-0.63]
	Int.	-0.22	-0.16	-0.03	[-4.73]	[-5.63]	[-0.91]
	Best	-0.14	-0.15	-0.12	[-2.09]	[-3.91]	[-3.96]

Table 6: FF5 Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

We estimated the five-factor Fama-French model ($FF5$) for each CSR test portfolio included into the pairwise combinations among each CSR domain and the ME dimension:

$$R_{p,t}^{d} - R_{f,t} = \alpha_{p}^{d} + \beta_{pmk}^{d} R_{m,t} + \beta_{ps}^{d} SMB_{t} + \beta_{ph}^{d} HML_{t} + \beta_{pr}^{d} RMW_{t} + \beta_{pc}^{d} CMA_{t} + u_{p,t}^{d} \quad (FF5)$$

where $R_{p,t}^{d} - R_{f,t}$ is the excess return of the CSR test portfolio p in domain d and month t; α_{p}^{d} is the pricing anomaly of portfolio p in domain d; $R_{m,t}$ is the excess return of the stock market index used as benchmark in month t; SMB_{t} is the size risk factor in month t; HML_{t} is the value risk factor in month t; RMW_{t} is the profitability risk factor in month t, CMA_{t} is the investment risk factor in month t and $u_{p,t}^{d}$ is the error term for portfolio p in domain d and month t. For other variables definition see Table 3.
In **bold** appear the alphas of CSR test portfolios not correctly priced by the model according to a $p-value < 0.05$.

		Panel A			Panel B		
			$\hat{\alpha}_{p}^{d}$			$\tau[\hat{\alpha}_{p}^{d}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.18	0.08	0.11	[-1.07]	[0.83]	[0.80]
	Intermediate	-0.16	**-0.21**	-0.12	[-0.79]	[-1.98]	[-1.12]
	Best	-0.22	-0.25	**-0.47**	[-0.86]	[-1.55]	[-4.14]
BB	*Worst*	-0.23	-0.14	0.05	[-1.22]	[-1.37]	[0.30]
	Int.	-0.17	-0.10	**-0.25**	[-0.87]	[-1.06]	[-2.71]
	Best	-0.15	-0.13	**-0.44**	[-0.71]	[-0.98]	[-3.59]
CG	*Worst*	-0.20	-0.14	-0.14	[-0.97]	[-1.13]	[-1.25]
	Int.	-0.24	0.01	-0.18	[-1.20]	[0.09]	[-1.76]
	Best	-0.12	-0.27	**-0.38**	[-0.50]	[-1.95]	[-3.14]
CIN	*Worst*	-0.06	-0.05	-0.08	[-0.35]	[-0.44]	[-0.52]
	Int.	-0.22	-0.10	-0.11	[-1.13]	[-0.99]	[-0.94]
	Best	-0.44	-0.21	**-0.36**	[-1.48]	[-1.51]	[-3.62]
ENV	*Worst*	-0.24	-0.03	-0.01	[-1.29]	[-0.32]	[-0.09]
	Int.	-0.09	-0.10	-0.19	[-0.48]	[-1.03]	[-1.91]
	Best	-0.32	-0.28	**-0.33**	[-1.21]	[-1.88]	[-3.24]
HR	*Worst*	-0.29	0.05	0.12	[-1.43]	[0.44]	[0.79]
	Int.	0.04	-0.14	**-0.24**	[0.20]	[-1.39]	[-2.42]
	Best	-0.30	-0.30	**-0.52**	[-1.27]	[-1.71]	[-3.75]
HRT	*Worst*	-0.18	-0.08	0.17	[-0.90]	[-0.72]	[1.69]
	Int.	-0.23	-0.10	**-0.23**	-1.36	[-0.91]	[-2.11]
	Best	-0.11	-0.20	**-0.41**	[-0.48]	[-1.46]	[-3.80]
			$\hat{\beta}_{pmk}^{d}$			$\tau[\hat{\beta}_{pmk}^{d}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	1.17	0.98	0.99	[26.77]	[39.18]	[27.38]
	Int.	1.24	1.15	0.96	[22.99]	[40.54]	[33.76]
	Best	1.20	1.21	1.12	[17.94]	[28.91]	[37.52]
BB	*Worst*		1.06	1.00	[24.75]	[38.86]	[24.18]
	Int.	1.21	1.12	0.98	[23.23]	[43.31]	[40.73]
	Best	1.23	1.15	1.16	[22.73]	[31.86]	[36.01]
CG	*Worst*	1.16	1.07	0.98	[21.73]	[32.08]	[33.22]
	Int.	1.31	1.13	1.05	[24.53]	[40.68]	[39.37]
	Best	1.17	1.11	1.06	[19.03]	[30.78]	[33.55]
CIN	*Worst*	1.19	1.08	1.00	[27.21]	[37.43]	[26.33]
	Int.	1.22	1.12	1.05	[23.90]	[41.37]	[33.27]
	Best	1.23	1.11	1.05	[15.71]	[30.32]	[40.44]
ENV	*Worst*	1.23	1.07	1.06	[25.23]	[37.71]	[27.04]
	Int.	1.19	1.09	0.99	[23.73]	[41.53]	[38.01]
	Best	1.23	1.19	1.08	[17.42]	[29.95]	[40.37]
HR	*Worst*	1.19	1.03	1.01	[22.40]	[35.91]	[25.85]
	Int.	1.19	1.06	0.95	[25.25]	[40.05]	[36.39]
	Best	1.25	1.25	1.18	[20.04]	[27.23]	[32.32]
HRT	*Worst*	1.20	1.09	0.88	[22.93]	[38.09]	[33.68]
	Int.	1.23	1.08	1.06	[26.99]	[38.58]	[37.02]
	Best	1.20	1.17	1.11	[19.36]	[33.09]	[38.87]

Table 6 (continued): FF5 Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

		Panel A			**Panel B**		
			$\hat{\beta}^{d}_{ps}$			$\tau[\hat{\beta}^{d}_{ps}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.48	0.20	-0.23	[4.27]	[3.05]	[-2.48]
	Int.	0.38	0.11	-0.22	[2.74]	[1.57]	[-2.97]
	Best	0.51	0.16	-0.32	[2.96]	[1.47]	[-4.16]
BB	*Worst*	0.46	0.14	-0.25	[3.67]	[2.05]	[-2.38]
	Int.	0.46	0.13	-0.24	[3.47]	[1.99]	[-3.86]
	Best	0.42	0.21	-0.30	[3.01]	[2.23]	[-3.63]
CG	*Worst*	0.53	0.22	-0.29	[3.90]	[2.62]	[-3.78]
	Int.	0.42	0.12	-0.27	[3.04]	[1.64]	[-3.89]
	Best	0.44	0.11	-0.23	[2.80]	[1.21]	[-2.81]
CIN	*Worst*	0.36	0.10	-0.29	[3.21]	[1.38]	[-2.96]
	Int.	0.50	0.09	-0.22	[3.85]	[1.31]	[-2.70]
	Best	0.59	0.28	-0.29	[2.93]	[2.96]	[-4.36]
ENV	*Worst*	0.41	0.17	-0.06	[3.30]	[2.28]	[-0.63]
	Int.	0.44	0.17	-0.23	[3.40]	[2.52]	[-3.50]
	Best	0.59	0.14	-0.34	[3.29]	[1.33]	[-4.98]
HR	*Worst*	0.52	0.12	-0.32	[3.81]	[1.59]	[-3.24]
	Int.	0.40	0.24	-0.15	[3.29]	[3.51]	[-2.25]
	Best	0.42	0.10	-0.37	[2.66]	[0.84]	[-3.93]
HRT	*Worst*	0.45	0.06	-0.28	[3.35]	[0.82]	[-4.14]
	Int.	0.47	0.17	-0.19	[4.00]	[2.43]	[-2.57]
	Best	0.43	0.23	-0.34	[2.68]	[2.52]	[-4.69]
			$\hat{\beta}^{d}_{ph}$			$\tau[\hat{\beta}^{d}_{ph}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.12	0.02	0.07	[0.98]	[0.34]	[0.68]
	Int.	0.38	0.21	0.15	[2.58]	[2.68]	[1.90]
	Best	0.51	0.23	0.19	[2.77]	[2.00]	[2.25]
BB	*Worst*	0.13	0.14	0.08	[1.00]	[1.91]	[0.71]
	Int.	0.48	0.04	0.16	[3.38]	[0.62]	[2.41]
	Best	0.33	0.31	0.19	[2.21]	[3.16]	[2.16]
CG	*Worst*	0.47	0.13	-0.02	[3.17]	[1.45]	[-0.25]
	Int.	0.17	0.19	0.21	[1.15]	[2.46]	[2.88]
	Best	0.26	0.14	0.22	[1.56]	[1.41]	[2.50]
CIN	*Worst*	-0.01	0.05	0.06	[-0.12]	[0.58]	[0.56]
	Int.	0.37	0.20	0.24	[2.64]	[2.67]	[2.81]
	Best	0.70	0.21	0.15	[3.23]	[2.04]	[2.07]
ENV	*Worst*	0.26	0.17	0.09	[1.92]	[2.22]	[0.86]
	Int.	0.30	0.11	0.09	[2.15]	[1.53]	[1.30]
	Best	0.47	0.19	0.23	[2.40]	[1.69]	[3.09]
HR	*Worst*	0.15	0.04	0.01	[1.04]	[0.54]	[0.12]
	Int.	0.38	0.20	0.23	[2.90]	[2.77]	[3.12]
	Best	0.38	0.24	0.18	[2.21]	[1.90]	[1.81]
HRT	*Worst*	0.30	-0.05	-0.04	[2.07]	[-0.63]	[-0.56]
	Int.	0.21	0.21	0.08	[1.71]	[2.70]	[1.01]
	Best	0.49	0.31	0.33	[2.84]	[3.17]	[4.23]

Table 6 (continued): FFC Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

		Panel A			**Panel B**		
			$\hat{\beta}^{d}_{pr}$			$\tau[\hat{\beta}^{d}_{pr}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.11	-0.04	0.03	[-0.64]	[-0.41]	[0.18]
	Int.	-0.08	0.04	0.20	[-0.37]	[0.34]	[1.73]
	Best	-0.02	-0.05	0.24	[-0.07]	[-0.29]	[1.99]
BB	*Worst*	0.00	0.19	-0.23	[0.01]	[1.67]	[-1.39]
	Int.	-0.17	-0.09	0.49	[-0.80]	[-0.87]	[4.99]
	Best	-0.05	-0.07	0.20	[-0.22]	[-0.50]	[1.53]
CG	*Worst*	0.07	-0.17	0.02	[0.34]	[-1.22]	[0.19]
	Int.	0.02	0.06	0.20	[0.09]	[0.51]	[1.79]
	Best	-0.26	0.06	0.35	[-1.03]	[0.40]	[2.72]
CIN	*Worst*	-0.32	-0.10	0.25	[-1.78]	[-0.80]	[1.63]
	Int.	-0.05	0.05	0.14	[-0.25]	[0.42]	[1.10]
	Best	0.20	-0.02	0.24	[0.61]	[-0.13]	[2.28]
ENV	*Worst*	-0.03	-0.03	0.06	[-0.17]	[-0.26]	[0.40]
	Int.	-0.19	0.06	0.35	[-0.91]	[0.53]	[3.24]
	Best	0.18	-0.06	0.10	[0.61]	[-0.36]	[0.92]
HR	*Worst*	0.03	-0.12	-0.04	[0.13]	[-0.99]	[-0.22]
	Int.	-0.15	0.28	0.40	[-0.76]	[2.63]	[3.69]
	Best	-0.11	-0.23	0.14	[-0.42]	[-1.23]	[0.92]
HRT	*Worst*	-0.12	-0.04	0.16	[-0.57]	[-0.36]	[1.51]
	Int.	-0.15	-0.05	0.26	[-0.79]	[-0.42]	[2.22]
	Best	0.14	0.09	0.14	[0.56]	[0.64]	[1.21]
			$\hat{\beta}^{d}_{pc}$			$\tau[\hat{\beta}^{d}_{pc}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.03	-0.10	-0.27	[0.17]	[-1.12]	[-2.13]
	Int.	-0.18	-0.14	0.18	[-0.94]	[-1.43]	[1.78]
	Best	-0.14	0.02	-0.06	[-0.61]	[0.11]	[-0.57]
BB	*Worst*	-0.09	-0.19	-0.04	[-0.53]	[-2.05]	[-0.32]
	Int.	-0.22	0.06	0.07	[-1.24]	[0.70]	[0.86]
	Best	0.13	-0.16	-0.09	[0.69]	[-1.30]	[-0.85]
CG	*Worst*	0.04	-0.16	0.17	[0.20]	[-1.42]	[1.71]
	Int.	0.08	-0.08	-0.02	[0.44]	[-0.84]	[-0.27]
	Best	-0.33	-0.02	-0.16	[-1.54]	[-0.12]	[-1.48]
CIN	*Worst*	0.05	-0.08	0.12	[0.34]	[-0.77]	[0.92]
	Int.	-0.12	-0.13	-0.10	[-0.71]	[-1.43]	[-0.93]
	Best	-0.15	-0.05	-0.02	[-0.54]	[-0.39]	[-0.26]
ENV	*Worst*	0.06	-0.12	-0.22	[0.35]	[-1.19]	[-1.62]
	Int.	-0.21	-0.17	0.18	[-1.21]	[-1.84]	[2.04]
	Best	-0.08	0.07	-0.15	[-0.34]	[0.50]	[-1.64]
HR	*Worst*	-0.06	-0.01	0.06	[-0.33]	[-0.06]	[0.46]
	Int.	-0.25	-0.26	-0.08	[-1.53]	[-2.87]	[-0.83]
	Best	0.13	0.01	0.01	[0.60]	[0.09]	[0.09]
HRT	*Worst*	-0.15	0.17	-0.01	[-0.81]	[1.70]	[-0.11]
	Int.	-0.06	-0.21	0.17	[-0.39]	[-2.15]	[1.69]
	Best	-0.04	-0.21	-0.19	[-0.20]	[-1.76]	[-1.96]

Table 7: CSR Risk Factor Construction and Main Descriptive Statistics

At the end of June of each year stocks are sorted over the ME dimension and all the CSR domains using only the scores available until to June of year t and the 50^{th} percentile as cut-offs for the portfolio composition. $S(mall)$ and $B(ig)$ are the two size groups while $W(orst)$ and $B(est)$ are the two responsibility groups for each domain. Intersection among the two size and responsibility groups create the building blocks for the computation of domain specific CSR risk factors. Value weighted monthly returns for the CSR factors portfolios are calculated from July of year t to the following June. Each portfolio has a time series of 142 observations. Average monthly return and standard deviation are computed across all the sample period.

Panel A: CSR Risk Factors Construction

W(orst) Minus B(est) Overall	WMB^{OA}	=	$(WS^{OA}+WB^{OA})/2$ - $(BS^{OA}+BB^{OA})/2$
W(orst) Minus B(est) Business Behavior	WMB^{BB}	=	$(WS^{BB}+WB^{BB})/2$ - $(BS^{BB}+BB^{BB})/2$
W(orst) Minus B(est) Corporate Governance	WMB^{CG}	=	$(WS^{CG}+WB^{CG})/2$ - $(BS^{CG}+BB^{CG})/2$
W(orst) Minus B(est) Community Involvement	WMB^{CIN}	=	$(WS^{CIN}+WB^{CIN})/2$ - $(BS^{CIN}+BB^{CIN})/2$
W(orst) Minus B(est) Environment	WMB^{ENV}	=	$(WS^{ENV}+WB^{ENV})/2$ - $(BS^{ENV}+BB^{ENV})/2$
W(orst) Minus B(est) Human Resource	WMB^{HR}	=	$(WS^{HR}+WB^{HR})/2$ - $(BS^{HR}+BB^{HR})/2$
W(orst) Minus B(est) Human Rights	WMB^{HTR}	=	$(WS^{HTR}+WB^{HTR})/2$ - $(BS^{HTR}+BB^{HTR})/2$

Panel B: Risk Factors Avg. Monthly Returns and Standard Deviation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	R_m	SMB	HML	MoM	RMW	CMA	WMB^{OA}	WMB^{BB}	WMB^{CG}	WMB^{CIN}	WMB^{ENV}	WMB^{HR}	WMB^{HTR}
$Avg.$	0.58	0.06	0.02	0.33	0.26	0.11	0.21	0.13	0.05	0.19	0.10	0.25	0.13
$St.dev$	4.54	1.43	1.67	3.56	1.07	1.38	1.23	0.97	1.14	0.97	1.03	1.55	1.11

Panel C: Risk Factors Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	R_m	SMB	HML	MoM	RMW	CMA	WMB^{OA}	WMB^{BB}	WMB^{CG}	WMB^{CIN}	WMB^{ENV}	WMB^{HR}	WMB^{HTR}
R_m	1.00												
SMB	0.12	1.00											
HML	0.21	0.01	1.00										
MoM	-0.34	-0.04	-0.39	1.00									
RMW	-0.35	-0.21	-0.52	0.34	1.00								
CMA	-0.43	-0.20	0.40	0.20	-0.12	1.00							
WMB^{OA}	-0.34	0.05	-0.31	0.31	0.13	0.02	1.00						
WMB^{BB}	-0.41	0.03	-0.24	0.35	0.24	0.02	0.68	1.00					
WMB^{CG}	-0.12	0.06	0.05	0.16	-0.09	0.16	0.17	-0.05	1.00				
WMB^{CIN}	-0.06	-0.06	-0.17	0.19	0.04	0.03	0.69	0.52	0.11	1.00			
WMB^{ENV}	-0.24	0.04	-0.20	0.22	0.18	0.03	0.70	0.43	-0.13	0.45	1.00		
WMB^{HR}	-0.30	0.06	-0.20	0.15	0.15	0.00	0.78	0.63	-0.21	0.47	0.58	1.00	
WMB^{HTR}	-0.46	-0.03	-0.37	0.26	0.31	0.08	0.74	0.63	-0.12	0.47	0.63	0.73	1.00

Table 8: RFFC Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

We estimated the responsible Fama-French-Carhart model ($RFFC$) for each CSR test portfolio included into the pair-wise combinations among each CSR domain and the ME dimension:

$$R^d_{p,t} - R_{f,t} = \alpha^d_p + \beta^d_{pmk} R_{m,t} + \beta^d_{ps} SMB_t + \beta^d_{ph} HML_t + \beta^d_{pm} MoM_t + \beta^d_{pw} WMB^d_t + u^d_{p,t} \quad (RFFC)$$

where $R_{p,t} - R_{f,t}$ is the excess return of the CSR test portfolio p in month t; α_p is the pricing error of the model used to price the portfolio; $R_{m,t}$ is the excess return of the stock market index used as benchmark in month t; SMB_t is the size risk factor in month t; HML_t is the value risk factor in month t; MoM_t is the momentum risk factor in month t, WMB^d_t is the domain specific CSR risk factor in the domain d and month t; $u_{p,t}$ is the error term for the test portfolio p in month t. For other variables definition see Table 3.
In **bold** appear the alphas of CSR test portfolios not correctly priced by the model according to a $p - value < 0.05$.

		Panel A			Panel B		
			$\hat{\alpha}^d_p$			$\tau[\hat{\alpha}^d_p]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.03	0.00	-0.04	[-0.23]	[-0.01]	[-0.32]
	Intermediate	0.11	-0.11	-0.08	[0.69]	[-1.29]	[-0.84]
	Best	0.18	0.05	**-0.22**	[0.95]	[0.43]	[-2.52]
BB	*Worst*	-0.08	-0.08	-0.15	[-0.51]	[-0.79]	[-1.13]
	Int.	-0.02	-0.03	-0.11	[-0.11]	[-0.40]	[-1.18]
	Best	0.17	0.03	**-0.23**	[1.12]	[0.25]	[-2.35]
CG	*Worst*	-0.15	-0.21	-0.11	[-0.94]	[-2.27]	[-1.13]
	Int.	-0.13	0.08	-0.11	[-0.72]	[0.84]	[-1.16]
	Best	-0.06	-0.14	**-0.23**	[-0.33]	[-1.39]	[-2.34]
CIN	*Worst*	0.01	-0.11	-0.07	[0.08]	[-1.12]	[-0.53]
	Int.	-0.02	0.01	-0.14	[-0.14]	[0.08]	[-1.28]
	Best	0.11	0.01	-0.15	[0.51]	[0.11]	[-1.92]
ENV	*Worst*	-0.07	-0.06	-0.06	[-0.44]	[-0.66]	[-0.50]
	Int.	-0.01	-0.03	-0.08	[-0.08]	[-0.32]	[-0.83]
	Best	0.01	-0.11	**-0.22**	[0.05]	[-1.00]	[-2.75]
HR	*Worst*	-0.14	-0.05	-0.02	[-0.81]	[-0.61]	[-0.21]
	Int.	0.24	0.01	-0.16	[1.79]	[0.16]	[-1.60]
	Best	0.12	-0.01	**-0.23**	[0.70]	[-0.13]	[-2.36]
HRT	*Worst*	-0.02	-0.07	0.14	[-0.12]	[-0.72]	[1.61]
	Int.	-0.07	-0.02	-0.13	[-0.48]	[-0.19]	[-1.25]
	Best	0.29	0.00	**-0.23**	[1.72]	[0.02]	[-2.77]
			$\hat{\beta}^d_{pm}$			$\tau[\hat{\beta}^d_{pm}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	1.10	1.01	1.05	[32.60]	[50.97]	[39.48]
	Int.	1.16	1.12	0.94	[30.86]	[53.60]	[39.64]
	Best	1.07	1.10	1.05	[23.87]	[43.58]	[51.95]
BB	*Worst*	1.14	1.06	1.07	[29.15]	[45.26]	[33.79]
	Int.	1.14	1.08	0.95	[28.89]	[51.08]	[42.01]
	Best	1.07	1.08	1.09	[28.43]	[43.33]	[45.03]
CG	*Worst*	1.14	1.10	0.96	[30.44]	[51.15]	[43.25]
	Int.	1.26	1.11	1.03	[29.76]	[52.18]	[47.20]
	Best	1.14	1.06	1.03	[26.85]	[44.86]	[44.77]
CIN	*Worst*	1.17	1.08	0.95	[34.53]	[47.95]	[33.81]
	Int.	1.20	1.11	1.05	[32.64]	[56.91]	[41.74]
	Best	1.16	1.09	1.02	[24.24]	[48.45]	[55.93]
ENV	*Worst*	1.15	1.09	1.09	[31.70]	[49.96]	[37.57]
	Int.	1.16	1.07	0.95	[31.43]	[54.51]	[43.17]
	Best	1.11	1.11	1.05	[22.90]	[42.25]	[55.03]
HR	*Worst*	1.13	1.06	1.04	[27.71]	[50.24]	[39.77]
	Int.	1.13	1.04	0.95	[34.94]	[47.71]	[40.52]
	Best	1.09	1.14	1.08	[27.33]	[42.36]	[46.09]
HRT	*Worst*	1.12	1.08	0.92	[27.23]	[44.21]	[42.22]
	Int.	1.13	1.05	1.02	[32.04]	[47.81]	[39.43]
	Best	1.01	1.09	1.05	[23.68]	[42.29]	[50.10]

Table 8 (continued): RFFC Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

		Panel A			Panel B		
			$\hat{\beta}^d_{ps}$			$\tau[\hat{\beta}^d_{ps}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	0.51	0.19	-0.24	[5.27]	[3.37]	[-3.15]
	Int.	0.48	0.14	-0.29	[4.47]	[2.26]	[-4.25]
	Best	0.62	0.23	-0.30	[4.79]	[3.16]	[-5.08]
BB	*Worst*	0.49	0.14	-0.26	[4.43]	[2.18]	[-2.98]
	Int.	0.56	0.15	-0.32	[5.04]	[2.49]	[-4.99]
	Best	0.48	0.28	-0.28	[4.57]	[4.01]	[-4.19]
CG	*Worst*	0.45	0.22	-0.34	[4.07]	[3.48]	[-5.23]
	Int.	0.40	0.12	-0.30	[3.17]	[1.91]	[-4.55]
	Best	0.57	0.15	-0.22	[4.52]	[2.08]	[-3.17]
CIN	*Worst*	0.38	0.14	-0.31	[3.78]	[2.05]	[-3.74]
	Int.	0.49	0.09	-0.21	[4.51]	[1.60]	[-2.80]
	Best	0.51	0.25	-0.34	[3.62]	[3.78]	[-6.26]
ENV	*Worst*	0.43	0.17	-0.07	[4.02]	[2.67]	[-0.84]
	Int.	0.53	0.19	-0.32	[4.88]	[3.34]	[-4.92]
	Best	0.64	0.17	-0.31	[4.51]	[2.22]	[-5.54]
HR	*Worst*	0.53	0.10	-0.39	[4.49]	[1.62]	[-5.21]
	Int.	0.52	0.26	-0.20	[5.61]	[4.09]	[-3.02]
	Best	0.53	0.21	-0.32	[4.62]	[2.75]	[-4.79]
HRT	*Worst*	0.49	0.04	-0.30	[4.38]	[0.59]	[-5.15]
	Int.	0.50	0.21	-0.25	[5.20]	[3.57]	[-3.51]
	Best	0.43	0.25	-0.33	[3.72]	[3.62]	[-5.79]
			$\hat{\beta}^d_{ph}$			$\tau[\hat{\beta}^d_{ph}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.03	0.00	-0.03	[-0.31]	[0.05]	[-0.43]
	Int.	0.03	-0.01	0.19	[0.34]	[-0.13]	[2.98]
	Best	0.07	0.00	-0.06	[0.56]	[-0.05]	[-1.13]
BB	*Worst*	-0.08	-0.07	0.14	[-0.77]	[-1.10]	[1.67]
	Int.	0.21	0.01	0.07	[2.04]	[0.15]	[1.21]
	Best	0.18	0.09	-0.06	[1.84]	[1.33]	[-0.88]
CG	*Worst*	0.29	-0.02	-0.01	[2.79]	[-0.39]	[-0.24]
	Int.	0.05	0.04	0.10	[0.43]	[0.71]	[1.70]
	Best	0.02	0.04	0.03	[0.20]	[0.69]	[0.42]
CIN	*Worst*	-0.05	0.01	0.03	[-0.54]	[0.12]	[0.38]
	Int.	0.14	0.00	0.16	[1.40]	[0.02]	[2.36]
	Best	0.15	0.01	-0.02	[1.13]	[0.21]	[-0.46]
ENV	*Worst*	0.09	0.09	[-0.05]	[0.87]	[1.52]	[-0.60]
	Int.	0.09	-0.09	0.09	[0.85]	[-1.75]	[1.44]
	Best	0.07	0.05	0.03	[0.54]	[0.75]	[0.58]
HR	*Worst*	-0.10	0.05	0.05	[-0.89]	[0.92]	[0.75]
	Int.	0.09	-0.10	0.08	[1.07]	[-1.76]	[1.29]
	Best	0.19	0.07	0.00	[1.78]	[0.96]	[-0.06]
HRT	*Worst*	-0.02	0.02	-0.02	[-0.19]	[0.38]	[-0.38]
	Int.	-0.04	-0.04	0.08	[-0.44]	[-0.64]	[1.16]
	Best	0.02	-0.05	0.01	[0.19]	[-0.81]	[0.12]

Table 8 (continued): RFFC Pricing Anomalies and Risk Factors Betas for the 3x3 Value Weighted CSR Test Portfolios

		Panel A			Panel B		
			$\hat{\beta}^{d}_{pm}$			$\tau[\hat{\beta}^{d}_{pm}]$	
		(1)	(2)	(3)	(4)	(5)	(6)
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.18	-0.07	-0.14	[-4.13]	[-2.77]	[-3.91]
	Int.	-0.18	-0.18	-0.04	[-3.62]	[-6.45]	[-1.21]
	Best	-0.23	-0.11	-0.04	[-3.84]	[-3.34]	[-1.60]
BB	*Worst*	-0.20	-0.11	-0.12	[-3.95]	[-3.60]	[-2.85]
	Int.	-0.23	-0.10	0.03	[-4.48]	[-3.64]	[1.03]
	Best	-0.13	-0.16	-0.14	[-2.58]	[-4.87]	[-4.40]
CG	*Worst*	-0.17	-0.14	-0.05	[-3.39]	[-4.91]	[-1.72]
	Int.	-0.21	-0.14	-0.05	[-3.59]	[-4.73]	[-1.63]
	Best	-0.31	-0.15	-0.07	[-5.42]	[-4.59]	[-2.16]
CIN	*Worst*	-0.16	-0.09	-0.10	[-3.50]	[-3.00]	[-2.73]
	Int.	-0.16	-0.15	-0.04	[-3.16]	[-5.57]	[-1.26]
	Best	-0.38	-0.13	-0.05	[-5.81]	[-4.35]	[-2.09]
ENV	*Worst*	-0.23	-0.11	-0.14	[-4.86]	[-3.90]	[-3.51]
	Int.	-0.14	-0.14	-0.01	[-2.82]	[-5.39]	[-0.37]
	Best	-0.25	-0.14	-0.08	[-3.94]	[-3.88]	[-3.06]
HR	*Worst*	-0.30	-0.10	-0.11	[-5.70]	[-3.67]	[-3.32]
	Int.	-0.19	-0.12	-0.01	[-4.64]	[-4.21]	[-0.31]
	Best	-0.20	-0.20	-0.10	[-3.83]	[-5.68]	[-3.15]
HRT	*Worst*	-0.29	-0.09	-0.02	[-5.82]	[-3.13]	[-0.79]
	Int.	-0.22	-0.16	-0.03	[-4.94]	[-5.80]	[-0.94]
	Best	-0.13	-0.14	-0.12	[-2.48]	[-4.44]	[-4.53]
			$\hat{\beta}^{d}_{pw}$			$\tau[\hat{\beta}^{d}_{pw}]$	
CSR Domain (d)		*Small*	*Medium*	*Big*	*Small*	*Medium*	*Big*
OA	*Worst*	-0.34	0.32	0.64	[-2.71]	[4.30]	[6.50]
	Int.	-0.96	-0.12	0.30	[-6.91]	[-1.55]	[3.41]
	Best	-1.28	-0.98	-0.66	[-7.62]	[-10.37]	[-8.74]
BB	*Worst*	-0.37	0.02	0.93	[-2.00]	[0.22]	[6.29]
	Int.	-0.78	-0.21	0.07	[-4.24]	[-2.17]	[0.63]
	Best	-1.39	-0.78	-0.54	[-7.87]	[-6.68]	[-4.82]
CG	*Worst*	0.95	0.72	0.47	[6.68]	[8.92]	[5.60]
	Int.	0.07	-0.01	0.12	[0.42]	[-0.10]	[1.39]
	Best	-0.76	-0.62	-0.56	[-4.75]	[-6.94]	[-6.43]
CIN	*Worst*	-0.42	0.31	0.72	[-2.75]	[3.08]	[5.72]
	Int.	-0.83	-0.26	0.36	[-5.04]	[-3.03]	[3.22]
	Best	-1.73	-0.89	-0.56	[-8.08]	[-8.84]	[-6.79]
ENV	*Worst*	-0.45	0.37	0.68	[-2.88]	[3.96]	[5.52]
	Int.	-0.85	-0.19	0.28	[-5.43]	[-2.28]	[2.96]
	Best	-1.36	-0.86	-0.51	[-6.58]	[-7.67]	[-6.28]
HR	*Worst*	-0.03	0.36	0.64	[-0.27]	[6.19]	[8.67]
	Int.	-0.69	-0.20	0.09	[-7.62]	[-3.36]	[1.36]
	Best	-1.08	-0.84	-0.63	[-9.71]	[-11.24]	[-9.66]
HRT	*Worst*	-0.46	0.31	0.46	[-2.73]	[3.07]	[5.11]
	Int.	-0.65	-0.33	0.15	[-4.45]	[-3.67]	[1.40]
	Best	-1.67	-0.78	-0.65	[-9.48]	[-7.34]	[-7.51]

Table 9: Cross-sectional Tests

For each pairwise combinations between each CSR domain and the ME dimension, are reported: the GRS statistic, the average absolute value of the estimated pricing anomalies defined as $A|\hat{\alpha}_p|$, the average standard error of the estimated pricing anomalies and defined as $A|S(\hat{\alpha}_p)|$, the Sharpe ratio for the intercept defined as $SR(\hat{\alpha}_p)$ and the average time series R^2.
In **bold** appear the GSR statistics with a $p-value < 0.05$.

		(1)	(2)	(3)	(4)	(5)
		GRS	$A\|\hat{\alpha}_p\|$	$A\|S(\hat{\alpha}_p)\|$	$SR(\hat{\alpha}_p)$	R^2
$FF3$	OA	**3.91**	0.19	0.14	4.40	0.91
	BB	**2.37**	0.18	0.13	3.43	0.92
	CG	**2.07**	0.18	0.14	3.20	0.91
	CIN	**2.84**	0.18	0.14	3.76	0.91
	ENV	**2.24**	0.18	0.14	3.34	0.91
	HR	**4.21**	0.21	0.14	4.57	0.91
	HRT	**3.73**	0.20	0.13	4.30	0.92
FFC	OA	**2.54**	0.14	0.13	3.60	0.92
	BB	1.19	0.11	0.13	2.47	0.92
	CG	1.45	0.13	0.13	2.72	0.92
	CIN	1.60	0.12	0.13	2.85	0.92
	ENV	1.43	0.11	0.13	2.70	0.92
	HR	**3.20**	0.17	0.14	4.04	0.91
	HRT	**2.90**	0.14	0.13	3.85	0.93
$FF5$	OA	**3.75**	0.20	0.15	4.73	0.91
	BB	**2.10**	0.18	0.14	3.54	0.92
	CG	**2.40**	0.19	0.15	3.78	0.91
	CIN	**2.97**	0.18	0.15	4.21	0.91
	ENV	**2.06**	0.18	0.15	3.50	0.91
	HR	**4.18**	0.22	0.15	4.99	0.91
	HRT	**2.83**	0.19	0.14	4.11	0.92
$RFFC$	OA	**2.64**	0.09	0.12	3.76	0.94
	BB	1.81	0.10	0.12	3.10	0.94
	CG	1.44	0.13	0.12	2.73	0.93
	CIN	1.53	0.07	0.12	2.86	0.93
	ENV	1.04	0.07	0.12	2.33	0.93
	HR	**3.40**	0.11	0.12	4.27	0.94
	HRT	**3.57**	0.11	0.12	4.37	0.94

Table 10: Fama-MacBeth Monthly Cross-Sectional Regressions for the 3x3 Value Weighted CSR Test Portfolios on Risk Factors Betas

For each pairwise combinations among all the CSR domains and the ME dimension, we estimate the following cross-sectional regression:

$$R^d_{p,t} - R_{f,t} = \lambda^d_{0,t} + \lambda^d_{1,t}\hat{\beta}^d_{pmk} + \lambda^d_{2,t}\hat{\beta}^d_{ps} + \lambda^d_{3,t}\hat{\beta}^d_{ph} + \lambda^d_{4,t}\hat{\beta}^d_{pm} + \lambda^d_{5,t}\hat{\beta}^d_{pr} + \lambda^d_{6,t}\hat{\beta}^d_{pc} + \lambda^d_{7,t}\hat{\beta}^d_{pw} + \epsilon^d_{p,t} \quad (FM)$$

where $R^d_{p,t} - R_{f,t}$ is the monthly excess return of CSR test portfolio p in domain d and month t; $\lambda^d_{0,t}$ is the monthly constant in domain d and month t; $\hat{\beta}^d_{pmk}$, $\hat{\beta}^d_{ps}$, $\hat{\beta}^d_{ph}$, $\hat{\beta}^d_{pm}$,$\hat{\beta}^d_{pr}$, $\hat{\beta}^d_{pc}$ and $\hat{\beta}^d_{pw}$ are the estimated betas from the previous models representing the market, size, value, momentum, profitability, investment and stakeholder risk of portfolio p in the CSR domain d respectively; $\lambda^d_{1,t}$, $\lambda^d_{2,t}$, $\lambda^d_{3,t}$, $\lambda^d_{4,t}$, $\lambda^d_{5,t}$, $\lambda^d_{6,t}$ and $\lambda^d_{7,t}$ are the monthly risk premia for market, size, value, momentum, profitability, investment and stakeholder risk in domain d and month t, while $\epsilon^d_{p,t}$ is the pricing error of portfolio p in domain d and month t. The time-series monthly averages risk premia are reported with their Fama-MacBeth t-stat in square brackets.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		$\bar{\hat{\lambda}}^d_0$	$\bar{\hat{\lambda}}^d_1$	$\bar{\hat{\lambda}}^d_2$	$\bar{\hat{\lambda}}^d_3$	$\bar{\hat{\lambda}}^d_4$	$\bar{\hat{\lambda}}^d_5$	$\bar{\hat{\lambda}}^d_6$	$\bar{\hat{\lambda}}^d_7$	R^2
$FF3$	OA	1.31	-0.72	0.37	-0.25					0.64
		[28.59]	[-13.39]	[22.71]	[-7.75]					
	BB	1.64	-1.09	0.37	0.23					0.62
		[29.37]	[-17.39]	[20.36]	[8.29]					
	CG	-0.02	0.41	-0.03	0.29					0.60
		[-0.36]	[5.74]	[-1.38]	[7.05]					
	CIN	0.83	-0.25	0.23	-0.48					0.61
		[7.81]	[-2.41]	[8.94]	[-12.81]					
	ENV	1.31	-0.69	0.46	-0.58					0.59
		[19.76]	[-9.98]	[24.61]	[-12.77]					
	HR	1.56	-0.99	0.32	0.12					0.65
		[30.12]	[-16.89]	[19.10]	[3.56]					
	HRT	2.81	-2.17	0.56	0.47					0.68
		[49.42]	[-33.58]	[30.49]	[8.91]					
FFC	OA	1.59	-1.06	0.29	-0.34	-0.39				0.72
		[25.59]	[-14.80]	[16.47]	[-9.81]	[-4.87]				
	BB	1.31	-0.75	0.37	0.24	0.39				0.71
		[7.78]	[-4.28]	[20.32]	[8.29]	[2.72]				
	CG	-0.19	0.63	0.05	0.14	0.23				0.75
		[-2.85]	[9.02]	[1.99]	[3.66]	[2.58]				
	CIN	0.96	-0.35	0.29	-0.32	0.62				0.71
		[9.44]	[-3.51]	[11.73]	[-9.77]	[9.31]				
	ENV	1.09	-0.45	0.50	-0.54	0.95				0.69
		[12.51]	[-4.84]	[26.26]	[-12.09]	[10.42]				
	HR	1.85	-1.35	0.25	0.24	-0.49				0.76
		[24.58]	[-15.80]	[13.76]	[7.15]	[-5.20]				
	HRT	2.50	-1.82	0.62	0.37	0.76				0.76
		[42.08]	[-26.57]	[34.07]	[7.26]	[11.12]				
$FF5$	OA	1.97	-1.37	-0.20	0.54		-1.45	0.01		0.81
		[35.39]	[-21.93]	[-7.25]	[13.71]		[-27.42]	[0.49]		
	BB	1.62	-1.03	0.34	0.09		-0.22	0.35		0.80
		[26.52]	[-15.6]7	[18.18]	[3.07]		[-12.93]	[13.62]		
	CG	-0.51	0.86	-0.31	0.56		-0.52	0.32		0.77
		[-6.17]	[10.32]	[-8.75]	[12.03]		[-13.35]	[10.27]		
	CIN	1.31	-0.73	0.05	0.03		-0.40	0.08		0.76
		[10.56]	[-5.98]	[1.23]	[0.50]		[-6.61]	[1.51]		
	ENV	1.66	-1.01	0.47	-0.48		-0.04	-0.08		0.75
		[16.83]	[-10.25]	[25.25]	[-9.30]		[-1.32]	[-3.16]		
	HR	2.40	-1.75	0.18	0.21		-0.80	-0.38		0.83
		[39.01]	[-26.72]	[9.25]	[5.02]		[-41.18]	[-13.72]		
	HRT	2.47	-1.85	0.65	0.18		0.26	0.28		0.81
		[39.75]	[-27.05]	[33.24]	[3.30]		[6.80]	[7.98]		
$RFFC$	OA	0.17	0.32	0.27	0.44	-0.10			0.19	0.80
		[1.75]	[3.17]	[14.81]	[10.05]	[-1.21]			[18.98]	
	BB	-0.51	1.09	0.35	0.40	1.60			0.10	0.81
		[-2.53]	[5.28]	[19.37]	[11.19]	[10.86]			[11.85]	
	CG	-0.57	0.84	-0.32	0.18	-1.14			0.07	0.84
		[-7.88]	[11.61]	[-8.40]	[4.70]	[-7.79]			[8.05]	
	CIN	0.18	0.30	0.20	-0.14	-0.27			0.19	0.81
		[1.84]	[3.15]	[8.14]	[-4.36]	[-3.84]			[24.06]	
	ENV	0.78	-0.19	0.43	-0.19	0.56			0.15	0.79
		[8.72]	[-2.08]	[20.30]	[-5.05]	[5.96]			[17.56]	
	HR	-1.53	2.11	0.45	0.73	1.66			0.34	0.84
		[-15.31]	[19.66]	[25.09]	[20.98]	[16.11]			[28.18]	
	HRT	2.56	-1.86	0.61	0.01	0.81			0.11	0.84
		[42.45]	[-27.05]	[33.32]	[0.14]	[11.76]			[12.15]	

Table 11: Fama-MacBeth Monthly Cross-Sectional Regressions for the 3x3 Value Weighted CSR Test Portfolios on the Market and Innovations Betas

For each pairwise combinations among ME and all the CSR domains under analysis we estimate the following cross-sectional regression:

$$R^d_{p,t} - R_{f,t} = \lambda^d_{0,t} + \lambda^d_{1,t}\hat{\beta}^d_{pmk} + \lambda^d_{2,t}\hat{\beta}^d_{pdiv} + \lambda^d_{3,t}\hat{\beta}^d_{pterm} + \lambda^d_{4,t}\hat{\beta}^d_{pdef} + \lambda^d_{5,t}\hat{\beta}^d_{pf} + \lambda^d_{6,t}\hat{\beta}^d_{pw} + \epsilon^d_{p,t} \quad (3)$$

where $R^d_{p,t} - R_{f,t}$ is the monthly excess return of CSR test portfolio p in domain d and month t; $\lambda^d_{0,t}$ is the monthly constant in domain d and month t, $\hat{\beta}^d_{pmk}$, $\hat{\beta}^d_{pdiv}$, $\hat{\beta}^d_{pterm}$, $\hat{\beta}^d_{pdef}$,$\hat{\beta}^d_{f}$, $\hat{\beta}^p_{d}$ are estimated the according to model (2) representing the market risk, the exposition to innovations in aggregate dividend yield, term spread, default spread, 1 Month T-Bill and domain specific CSR risk factors for portfolio p in the CSR domain d; $\lambda^d_{1,t}$, $\lambda^d_{2,t}$, $\lambda^d_{3,t}$, $\lambda^d_{4,t}$, $\lambda^d_{5,t}$ and $\lambda^d_{6,t}$ are the monthly risk premia for market, innovations in aggregate dividend yield, term spread, default spread, 1 Month T-Bill and domain specific CSR risk factors for portfolio p in the CSR domain d; $\epsilon^d_{p,t}$ is the pricing error of portfolio p in domain d and month t. The time-series monthly averages risk premia are reported with their Fama-MacBeth t-stat in square brackets.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	$\bar{\hat{\lambda}}^d_0$	$\bar{\hat{\lambda}}^d_1$	$\bar{\hat{\lambda}}^d_2$	$\bar{\hat{\lambda}}^d_3$	$\bar{\hat{\lambda}}^d_4$	$\bar{\hat{\lambda}}^d_5$	$\bar{\hat{\lambda}}^d_6$	R^2
OA	1.15	-0.52	11.34	15.13	-0.80	1.47	0.24	0.84
	[13.15]	[-6.14]	[9.87]	[7.45]	[-2.86]	[4.02]	[1.73]	
BB	2.67	-1.92	12.03	1.59	1.41	-2.96	-1.73	0.89
	[23.75]	[-16.89]	[26.68]	[5.91]	[5.73]	[-7.52]	[-11.22]	
CG	-1.03	1.39	2.86	-2.86	7.21	-3.34	-1.45	0.88
	[-14.15]	[19.09]	[8.26]	[-4.31]	[29.32]	[-9.35]	[-13.88]	
CIN	0.55	-0.02	2.43	-8.57	0.48	-0.40	1.78	0.88
	[5.49]	[-0.17]	[9.28]	[-10.55]	[1.20]	[-1.09]	[17.30]	
ENV	1.27	-0.57	7.41	0.03	-1.79	-3.14	1.10	0.88
	[12.55]	[-5.71]	[12.78]	[0.07]	[-7.49]	[-5.31]	[9.80]	
HR	-2.40	3.18	6.73	12.46	-5.83	-16.85	5.57	0.90
	[-14.55]	[18.47]	[30.45]	[32.85]	[-22.89]	[-20.97]	[22.70]	
HRT	2.74	-2.11	9.12	-2.12	3.19	0.05	-2.63	0.88
	[53.24]	[-35.80]	[18.40]	[-3.17]	[13.07]	[0.15]	[-17.41]	

Table 12: Fama-MacBeth Monthly Cross-Sectional Regressions for the 3x3 Value Weighted CSR Test Portfolios on the Innovations Betas

We estimate the following model at firm level:

$$R_{i,t}^d - R_f = \lambda_{0,t}^d + \lambda_{1,t}^d \hat{\beta}_{imk}^d + \lambda_{2,t}^d \hat{\beta}_{is}^d + \lambda_{3,t}^d \hat{\beta}_{ih}^d + \lambda_{4,t}^d \hat{\beta}_{im}^d + \lambda_{5,t}^d \hat{\beta}_{iw}^d + \lambda_{6,t}^d ln(\overline{ME}_i) + \\ + \lambda_{7,t}^d ln(\overline{BE/ME}_i) + \lambda_{8,t}^d \bar{R}_i(t-2, t-12) + \lambda_{9,t}^d \bar{S}_i^d + \epsilon_{it}^d \quad (4)$$

$R_{i,t}^d - R_f$ is the monthly excess return for firm i in domain d and month t; λ_0^d is the constant; $\hat{\beta}_{imk}^d$, $\hat{\beta}_{is}^d$, $\hat{\beta}_{ih}^d$, $\hat{\beta}_{im}^d$ and $\hat{\beta}_{iw}^d$ are the estimated betas from the $RFFC$ model and representing the market, size, value, momentum and stakeholder risk for firm i in the domain d; $ln(\overline{ME}_i)$ is the natural logarithm of yearly average market value of equity for firm i; $ln(\overline{BE/ME}_i)$ is the natural logarithm of yearly average book-to-market ratio value for firm i; $\bar{R}_i(t-2, t-12)$ is the yearly average return from month -12 to month -2 to control for firm i; $\bar{S}_i^d$ is the yearly average score for firm i; is ϵ_i^d is the pricing error for firm i in the domain d. The time-series monthly averages risk premia are reported with their Fama-MacBeth t-stat in square brackets.

	(1) $\hat{\bar{\lambda}}_0^d$	(2) $\hat{\bar{\lambda}}_1^d$	(3) $\hat{\bar{\lambda}}_2^d$	(4) $\hat{\bar{\lambda}}_3^d$	(5) $\hat{\bar{\lambda}}_4^d$	(6) $\hat{\bar{\lambda}}_5^d$	(7) $\hat{\bar{\lambda}}_6^d$	(8) $\hat{\bar{\lambda}}_7^d$	(9) $\hat{\bar{\lambda}}_8^d$	(10) $\hat{\bar{\lambda}}_9^d$	(11) R^2
Panel A											
OA	0.50					0.29					0.02
	[10.82]					[17.57]					
BB	0.55					0.29					0.01
	[12.08]					[18.52]					
CG	0.43					-0.06					0.01
	[8.83]					[-5.42]					
CIN	0.52					0.24					0.01
	[11.39]					[17.93]					
ENV	0.44					0.10					0.01
	[9.09]					[10.56]					
HR	0.52					0.45					0.02
	[11.10]					[21.04]					
HRT	0.60					0.31					0.01
	[12.97]					[24.80]					
Panel B											
OA	0.19	0.33	0.41	0.06	0.58	0.44					0.03
	[1.81]	[2.39]	[20.75]	[1.68]	[10.38]	[28.20]					
BB	1.39	-0.70	0.24	-0.77	1.11	0.28					0.03
	[15.36]	[-6.03]	[12.84]	[-21.77]	[21.59]	[19.16]					
CG	0.56	-0.13	-0.31	-0.25	-0.37	-0.03					0.03
	[4.81]	[-0.94]	[-10.73]	[-8.67]	[-4.30]	[-1.96]					
CIN	1.95	-1.45	0.54	-0.41	-0.82	0.39					0.03
	[15.99]	[-10.65]	[19.32]	[-12.46]	[-15.10]	[29.13]					
ENV	2.06	-1.61	-0.01	-0.07	-0.73	0.04					0.02
	[13.00]	[-8.81]	[-0.57]	[-1.46]	[-10.98]	[7.26]					
HR	0.28	0.30	0.30	-0.37	0.77	0.54					0.03
	[3.42]	[2.85]	[13.49]	[-9.84]	[15.89]	[23.75]					
HRT	1.40	-0.71	0.15	-0.23	0.73	0.30					0.03
	[13.85]	[-5.88]	[8.64]	[-5.41]	[10.73]	[29.73]					
Panel C											
OA	0.20	-0.49	-0.02	0.15	-0.24	0.13	-0.03	-0.06	6.90		0.06
	[1.63]	[-4.03]	[-0.65]	[4.38]	[-4.14]	[8.04]	[-4.59]	[-4.49]	[73.40]		
BB	0.29	-0.44	-0.10	-0.01	0.35	0.05	-0.04	-0.06	6.92		0.05
	[2.33]	[-4.43]	[-3.20]	[-0.32]	[7.08]	[3.21]	[-5.15]	[-4.67]	[74.20]		
CG	0.59	-0.60	-0.21	-0.03	0.24	0.03	-0.07	-0.08	6.95		0.06
	[5.19]	[-4.93]	[-5.31]	[-1.24]	[2.78]	[2.43]	[-9.20]	[-5.09]	[75.93]		
CIN	0.90	-0.91	-0.03	0.08	-0.15	0.10	-0.06	-0.06	6.91		0.05
	[6.45]	[-7.37]	[-0.80]	[2.60]	[-2.60]	[7.24]	[-7.78]	[-4.29]	[73.30]		
ENV	0.96	-1.39	0.03	-0.31	-0.47	0.03	-0.02	-0.06	7.00		0.05
	[7.35]	[-8.23]	[1.04]	[-7.18]	[-7.23]	[4.97]	[-2.64]	[-4.39]	[76.35]		
HR	0.19	-0.39	-0.04	0.13	-0.07	0.18	-0.04	-0.06	6.86		0.06
	[1.62]	[-4.18]	[-1.35]	[4.13]	[-1.48]	[8.21]	[-4.70]	[-4.28]	[75.12]		
HRT	0.95	-1.01	-0.13	0.28	-0.10	0.06	-0.05	-0.06	6.87		0.06
	[6.96]	[-8.76]	[-4.97]	[6.82]	[-1.59]	[5.77]	[-6.39]	[-4.32]	[73.66]		
Panel D											
OA	0.32	-0.54	-0.08	0.10	-0.30	0.08	-0.03	-0.06	6.89	0.00	0.06
	[2.69]	[-4.42]	[-2.42]	[3.04]	[-5.13]	[4.80]	[-3.54]	[-4.44]	[72.92]	[-6.21]	
BB	0.29	-0.46	-0.09	-0.02	0.34	0.06	-0.04	-0.06	6.92	0.00	0.06
	[2.36]	[-4.30]	[-2.46]	[-0.67]	[7.40]	[2.62]	[-5.62]	[-4.68]	[74.27]	[1.28]	
CG	0.67	-0.46	-0.22	-0.04	0.28	-0.06	-0.07	-0.08	6.96	0.00	0.06
	[5.93]	[-4.53]	[-5.84]	[-1.47]	[3.19]	[-3.60]	[-9.88]	[-5.23]	[75.94]	[-5.70]	
CIN	0.95	-0.94	-0.10	0.07	-0.05	0.05	-0.05	-0.06	6.89	0.00	0.06
	[6.51]	[-7.66]	[-2.18]	[2.37]	[-0.74]	[2.47]	[-7.42]	[-4.29]	[73.81]	[-3.58]	
ENV	0.97	-1.38	0.04	-0.34	-0.45	0.03	-0.02	-0.06	7.00	0.00	0.05
	[7.38]	[-8.28]	[1.08]	[-8.49]	[-7.29]	[5.12]	[-2.01]	[-4.25]	[76.80]	[-2.04]	
HR	0.18	-0.33	-0.11	0.12	-0.06	0.11	-0.03	-0.06	6.85	0.00	0.06
	[1.55]	[-3.52]	[-3.12]	[3.58]	[-1.24]	[4.22]	[-4.22]	[-4.20]	[74.93]	[-7.51]	
HRT	0.94	-1.01	-0.13	0.28	-0.12	0.06	-0.05	-0.06	6.87	0.00	0.06
	[6.87]	[-8.74]	[-4.95]	[6.84]	[-1.84]	[5.74]	[-6.49]	[-4.36]	[73.76]	[1.[illegible]]	