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Corporate Sustainability and Shareholder Wealth—Evidence from British Companies and Lessons from the Crisis

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Abstract: This study examines the impact of corporate sustainability (CS) on stock market returns for FTSE 350 companies over the period 2006–2012. We find that an investment strategy that bought shares in companies with balanced financial, social, and environmental activities would have earned an annual four-factor alpha for a value-weighted portfolio of 3.54% per year during the sample period and 2.98% above industry benchmarks. In addition, we find that CS is negatively correlated with stock return volatility, and investing in companies with CS not only generates higher returns during peak phases, but also diminishes shareholders' losses during bear phases. We have also carried out an additional, out-of-the-sample analysis for the years 2013–2015 which confirmed our results.

Keywords: corporate financial performance; corporate sustainability; shareholder wealth; socially responsible investing; sustainable corporate finance

1. Introduction

In recent years, sustainable oriented activities have become increasingly important for firms, customers, employees, the financial community, regulators, policymakers, and non-governmental organizations (NGOs). According to a recent survey, 93% of CEOs regard sustainability as important, or very important, to the future success of their companies; 96% believe sustainability issues should be fully integrated into the strategy and operations of a company; and 73% see this as a way of strengthening their brand, trust, reputation, and financial performance [1]. Ninety-five percent of the 250 largest companies in the world now report on their corporate social responsibility (CSR) activities [2]. The Global Reporting Initiative (GRI) attempts to provide voluntary guidance for corporations that generate stand-alone sustainability reports. Almost 1200 institutional investors from around the world have signed the Principles for Responsible Investment (PRI) agreement, which aims to understand the implications of business sustainability and support signatories in incorporating environmental, social, and governance (ESG) issues in their investment decision-making and ownership practices [3]. Stock market data show that sustainable investments reached US\$13.6 trillion globally by 31 December 2011, with Europe's share at 64.5% [4]. Assets engaged in sustainable and responsible investing practices currently represent 27.7% of all assets under management in Europe [5] and 11.3% in the US [6].

In this paper, we introduce a less touched than CSR or responsible investment topic, namely "corporate sustainability". A sustainable company can be seen as a business unit that considers its long-term health as a combination of the proper management of all major areas of its activities (e.g., financial, social, and environmental) at the same time [7]. Corporate sustainability implies the creation of long-term shareholder wealth by adopting sustainable development into business strategy and operations, which is presented in the form of self-generated, stakeholder-engaged, and independently

verified reporting. Thus, CSR can be regarded as a sub-area of CS, since it includes mostly short-term activities in which shareholder wealth is not a critical factor [8]. Furthermore, the balance between social, environmental, and financial goals is an intermediate stage in CSR and the ultimate goal in CS [9].

Various reasons have been given for the growing interest in sustainability issues in the business world. These include:

- (1) an increase in the productivity of a firm's resources [10] and savings due to a reduced amount of waste [11];
- (2) the elimination of non-effective processes [12];
- (3) a reduction of required inputs and compliance and liability costs [13];
- (4) higher economic value of products or services due to consumer demand for green and socially responsible goods [14–16];
- (5) less public and community pressure [17];
- (6) revenue enhancement by attracting and retaining employees [18,19].

All beyond-compliance, sustainability-oriented activities should enable a firm to build competitive advantage. An obvious research question arises from this: Are the above activities connected to any benefits for shareholders? If so, are the achievable gains from them in terms of increased wealth sufficient to justify these activities?

The relationship between sustainability-oriented activities and financial performance carries considerable potential importance for managers and investors. Although numerous studies have empirically examined the above connection, they have not addressed the issue of the combination of the influence of increased social and environmental performance on shareholder value and the mediating effect of the current global financial crisis (GFC). If corporate sustainability has wealth-protective effects that manifest during stock market busts, then it would make sustainable companies' stocks highly desirable investment assets.

This paper sets out to address this problem by examining the simultaneous impact of the combined proper management of all major areas of firms' activities (e.g., financial, social, and environmental) on its stock market performance for a panel data sample of FTSE 350 companies in the years 2006–2012. These activities were analyzed based on content analysis of voluntary corporate social and environmental, as well as obligatory financial disclosures. The above approach examines whether, and how, a firm's multidimensional approach to the sustainable development concept, incorporating social, environmental, and economic issues, simultaneously relates to various aspects of shareholder wealth creation during current financial and economic crisis and its aftermath. In particular, this paper addresses the following questions: Does a multidimensional approach to sustainable development issues during economic slowdowns affect a company's stock market returns and their volatility? Does the incorporation of a proper mix of voluntary beyond-compliance sustainability-oriented activities influence the level of equity price resistance to a stock market crash?

Our results consistently indicate that firms with CS enhance their long-term efficiency, which ultimately results in an overall increase in shareholder wealth. The results also show a higher resistance to stock market crash among companies meeting our criteria of corporate sustainability.

This study is motivated by several considerations and makes several potential contributions. First, it contributes to the literature on the link between corporate social and financial performance by developing a new method for assessing corporate sustainability. It also adds to the debate surrounding the possible effects of balanced financial, social, and environmental activities presented in the form of self-generated, voluntary reporting. Second, the results of the study showing that sustainable firms generate superior long-term returns may be useful to investors in their deliberations on ways to achieve additional returns by holding well-diversified portfolios during a GFC.

The study is structured as follows: first an overview of the literature on the link between corporate social performance and financial performance will be presented. Second, the theory on the concept of corporate sustainability will be provided and hypotheses developed. Next, the results of the empirical

study will be presented. Finally, the key findings will be discussed, conclusions drawn and the limitations outlined.

2. Corporate Social Performance and Financial Performance: the Existing Evidence

The academic literature on the link between sustainable development strategies and firm performance is fragmented. It tends to focus on a single aspect of sustainability, either the social, environmental, or financial aspect, rather than a balance between them and the company's relationship with various dimensions of profitability and shareholder gains. Previous studies that have attempted to relate increasing social and environmental performance to financial performance have also yielded conflicting results, which makes it extremely difficult to draw any general conclusions.

Hillman and Kelm [20] report that proper management of relationships with primary stakeholders (customers, employees, local communities, and capital providers) is directly tied to additional value creation, while active participation in secondary social issues may not lead to the above result. Gardberg and Fombrun [21] and Scholtens and Zhou [22] suggest that only certain types of CSR activities, reflecting a balance between legitimation and differentiation, can generate shareholder wealth. Harrison *et al.* [23] report that a nuanced understanding of stakeholders' needs increases stakeholders' willingness to cooperate with a firm, thus enhancing its growth prospects and competitiveness. Artiach *et al.* [24] propose that the relation between social responsibility and financial performance is also sensitive to the specification of proxy for profitability.

Different aspects of corporate social performance seem to be associated in a complex manner with shareholder wealth creation. This is probably why Margolis and Elfenbien [25], in their survey of management literature, found only a very small positive correlation between sound corporate social behavior and good financial results. Some studies [26–28] even suggested that CSR activities might adversely affect financial results through their detrimental influence on future cash flows, which would thus impose a direct cost on shareholders. Existing meta-analysis studies suggest measurement methodology as an important casual variable behind the great variety of results regarding the relation social-financial performance [29,30]. Particularly, the sampling and measurement errors along with stakeholders mismatch are three possible sources of cross-study variation of correlations [30]. Voluntary environmental over-compliance and better environmental reputation can also affect financial performance in a complex and ambiguous way [17]. Aragon-Correa *et al.* [31] report that firms with the most proactive environmental practices, requiring the complex coordination of several human and technical skills and heterogeneous resources, exhibited a significantly positive financial performance. Derwall *et al.* [32] used a firm's eco-efficiency indicator as a selection criterion and constructed different portfolios with high- and low-ranked companies. The authors found a positive relationship between eco-efficiency and stock market performance. Graham *et al.* [33] are also among the proponents of a win-win environmental management paradigm. They argue that accurate voluntary environmental disclosures reduce companies' information risk and the weighted average cost of capital. Clarkson *et al.* [34] provide evidence those companies engaging more deeply in voluntary disclosure of environmental information report improvements in environmental performance. This, in turn, increases the probability of obtaining external rewards for environmentally oriented activities, which can be positively related to stock market returns [35].

On the other hand, Jones *et al.* [36] report that environmental disclosure is negatively associated with longer-term market valuation. Zaho [37] notes that environmental investments appear to conflict with maximization of shareholder value. The results of the statistical analysis used in the above study indicate that the registration of ISO 14001 environmental management systems has led to lower profitability. Fisher-Vanden and Thorburn [38] also provide evidence on the negative effects of voluntary corporate environmental initiatives on shareholder wealth. They suggest companies announcing membership in environmental programs experience significantly negative abnormal stock returns.

Both approaches presented above highlight the selectiveness of the market in reacting to environmental performance and difficulties encountered with the profitable inclusion of environmental

aspects into corporate strategy and decision-making processes. There seems to be a necessity to incorporate a proper combination of different types of activities, instead of simply maximizing the intensity of any existing environmental protection *per se* [39–41].

Sustainability in the discipline of corporate finance is a definitely less-established concept. Although this area is relatively new, the concept has attracted a growing body of literature. Sustainability is often interpreted as a financial policy that cares for future generations [42]. This single corporate objective does not say anything about enhancing profits and shareholder gains in the long term [43]. Sustainability in finance definitely requires a multidimensional approach. This finding is reflected in Soppé's [44,45] theory, which defines sustainable finance as a financial policy that strives for triple bottom-line performance measurements with human actors that opt to maximize multidimensional preference functions.

In a related theoretical work, Johnsen [46] suggested that sustainability in corporate finance is strictly connected to socially responsible investing (SRI). It can be defined as a synthesis of conventional and sustainable investment optimization, aimed at achievement of superior social and environmental performance while maintaining the financial excess return [47]. The existing studies do not demonstrate unequivocally that SRI have a positive impact on shareholder wealth [48,49]. On the one hand, Lo and Sheu [50] report that companies with remarkable sustainable development strategies, appreciated by their inclusion to the Dow Jones Sustainability Index, are rewarded by investors with a higher stock market valuation. On the other hand, Lopez *et al.* [51] showed that these companies are actually penalized by the market with negative performance. The most important problem is the multidimensional approach to socially responsible investment activities, which complicates financial modeling and results in many methodological difficulties.

Different results from the above-mentioned empirical studies show the difficulties in testing the relationship between a company's social performance and its financial performance. These difficulties can be attributed mainly to the wide range of CSR indicators applied and the methodological approaches. Apart from that, if investors are to penalize or award firms for being socially and environmentally oriented, such activities must be available to the public in the form of self-generated reporting or third party analyses [52]. Furthermore, independent external actors must verify the presented engagement to ensure a minimum level of credibility and unselfishness. This raises the issue of social and environmental reporting and its possible influence on shareholder wealth [53]. The existing literature on the above matter is largely inconclusive [54].

Despite such heightened interest in the literature concerning possible relations between various aspects of corporate social, and financial performance, only a few studies have addressed the influence of exogenous economic crises as mediating factors with regard to the above. Jones *et al.* [55] found that firm's strong reputation for CSR results in higher resistance to valuation losses during stock market plunges than other, lower-reputation companies. Schnietz and Epstein [56] observed the same regularity. In addition, Godfrey *et al.* [57] report that participation in CSR activities aimed at firm's secondary stakeholders, who can influence their primary counterparts, creates a form of goodwill that preserves financial performance in times of negative external events. Although the above studies focus on combining sustainability issues, shareholder value, and crises, they do not cover more recent developments, especially the current global financial crisis and its aftermath.

Our study seeks to address a number of substantive limitations of previous works by developing a new method for assessing corporate sustainability as a multidimensional concept, along with each of its major components, and provide an answer as to whether it can lead to additional stock market gains during the current GFC.

3. Theoretical Framework and Development of Hypotheses

The steady increase in sustainability-oriented activities over the past decade suggests managers are beginning to see a business case for corporate sustainability. A company that is consistently socially, environmentally, and financially responsible should ultimately obtain tangible benefits from such

responsibility in the form of: cost reductions through decreased regulatory or litigation risk and higher material and energy efficiency; more stable relations with the financial community and stakeholders; increased productivity through attracting and retaining good employees; more effective business and financial planning; enhanced revenues through attaining socially conscious consumers, access to financial capital from sustainability-oriented investors or process innovation [58–60]. Thus, corporate sustainability has the potential to deliver a broad range of new sources of competitive advantage that affect value creation in both the short term and longer term [61]. In order to serve the above purpose, CS must be consistent with a firm's strategy, be financially sustainable, and influence the decisions of the firm's stakeholders in its own favor [62].

According to the assumptions of perfect capital markets, there is complete agreement among investors about probability distributions of future payoffs on assets, and they choose asset holdings based solely on them [63]. Thus, socially and environmentally responsible investors, who also consider nonfinancial criteria in their investment decisions, do not get utility beyond the utility derived from relying only on financial characteristics (risk and return). Fama and French [64] show that in the presence of market imperfections, tastes for assets as consumption goods can affect asset prices, and the distortions of expected returns (*i.e.*, deviations from traditional asset pricing models) can be large when investors with a taste for assets (*i.e.*, using a firm's environmental and social performance as a selection criterion for portfolio construction) account for a substantial amount of invested wealth. If so, investment decisions based on corporate sustainability can provide additional gains to investors who do not base their decisions solely on monetary returns. Thus, the adoption of the CS concept can influence stock market performance and its volatility.

Existing theoretical models of the relationship between corporate social performance and stock market returns relax the assumption of perfect capital markets by allowing differences in investor preferences [64–67], incomplete information [68,69] and imperfect markets in general [70,71]. Sustainability-oriented investors, who consider both financial and non-financial criteria in their investment decisions, can get utility above that traditional investors achieve by basing their choices solely on financial criteria. Therefore, management of social, environmental, and financial issues and its voluntary disclosure in the form of self-generated, stakeholder engaged, and independently verified reporting can be positively priced in financial markets. If CS affects company performance, and this relationship is fully incorporated by the market, then a stock price should quickly adjust to a relevant change in the corporate management and business strategy. This is highly unlikely because the implementation of sustainability at the micro level requires a systematic and long-term approach, and expected stock returns would not only be affected within the event window. As such, realized returns on the stock would differ systematically from equivalent securities. All of the above arguments can be summarized in the following hypothesis:

Hypothesis 1: Companies with CS earn higher than average stock market returns.

Business strategy that incorporates social, environmental, and economic issues at the same time and proper voluntary reporting can lead to reductions of the operational and financial risks a company faces. It can also promote more conservative risk behavior in group decision making [72]. Suitable corporate sustainable performance may be considered as a sign of superior management skills and more effective business and financial planning [73]. Improved environmental, social, and financial risk management reduces the probability of sustainable crisis that could negatively affect a firm's expected cash flows (*e.g.*, lawsuits, cleanup costs in the case of environmental accidents, consumer boycotts, employee strikes over unsafe working conditions, potential fines, loss of reputation, and NGOs' attacks) and can generate additional capital or goodwill, which mitigates possible negative assessments of future corporate actions [57,74]. A company's intensified internal efforts and responses to sustainability issues can also improve organizational information flow [75] and equip firms that have greater capabilities in implementing sustainable processes with the tools necessary to reap additional benefits accruing from the adoption of best practices [76]. All of these beneficial implications, due to their link to qualitative risk categories, can lead to more stable cash flows and a substantial reduction in

the costs of potential financial distress. Thus, a firm with balanced financial, social, and environmental activities and stakeholder engaged voluntary reporting is likely to achieve lower volatility on stock returns than other companies. This leads to our second hypothesis:

Hypothesis 2: The relation between corporate sustainability and stock return volatility is negative and substantial.

Periods of high risk aversion and low risk premium are generally associated with times of financial distress and high market volatility—periods of economic contractions and substantial decreases in consumption levels [77–79]. Investors then direct more attention towards companies with sound environmental, social, and financial management. This makes sustainable firms' stocks highly desirable investment assets during turmoil in financial markets, because of their relatively better image and more stable future prospects. This leads to excess demand for financially, socially, and environmentally responsible stocks and a deficit demand for financially, socially, and environmentally irresponsible stocks [80]. In turn, although investment in sustainable companies should not exhibit any anti-cyclical patterns within the usual stock market cycle, the implementation of CS into corporate strategy should lead to greater resistance to economic crisis and wealth-protective effects that are captured in the corporations' stock market valuations. The above arguments lead to our third hypothesis:

Hypothesis 3: Companies with CS are characterized by a higher than average resistance to a stock market crash.

4. Method

Information about social and environmental companies' activities has been derived from voluntary disclosures submitted on companies' Internet websites. Voluntary disclosures are defined here as pieces of information outside and beyond the mandatory requirements [81]. The literature describes two main approaches to the content analysis of environmental and social reporting: mechanistic and interpretative.

Mechanistic approaches typically focus on word counting [77], sentence counting [82], page proportions [83], frequency of disclosure [84], and high/low disclosure ratings [85]. Interpretative studies focus on quality and content richness. Their main aim is to understand and interpret contained information [86] and its effects on readers [87].

In this paper, a combination of the mechanistic and interpretive approaches has been applied. On the one side, the paper has considered the frequency and regularity of voluntary disclosures in the form of environmental and social reports. On the other side, we have conducted deep content analysis of all information, according to the interpretive approach.

4.1. Measuring Social Aspects of Corporate Sustainability

The management literature has acknowledged social responsibility as an important corporate duty for a long time [88,89]. CSR generally refers to "the firm's consideration of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm . . . in a manner that will accomplish social benefits along with the traditional economic gains which the firms seeks" [90] (pp. 312–313). If so, the company's CSR activities should be strategic and embrace a wide range of simultaneous activities in different areas (e.g., community, diversity, employee relations, product design, human rights, corporate governance), which support the firm's competitive advantage [91,92].

Corporate social responsibility concerns the management of a firm's internal resources (including shareholders' expectations), which simultaneously contribute to the welfare of other stakeholders. For CSR to contribute to sustainable development, it must also embrace the company's ability to sustain desirable financial performance and shareholder value creation processes over the long term [93]. Thus, CSR that serves sustainability must incorporate externalities and reputational risks that potentially harm the firm's future financial and stock market performance into business strategy and decision-making processes.

Integrating sustainability management into social responsibility requires not only an examination of the impacts of undertaken initiatives on financial outcomes, but also a deep understanding of the impacts of given products, services, processes, and other activities on both the external and internal environments [94]. It includes cyclical, long-term, multidimensional actions consistent with the overall idea of sustainable development that leverage unique resources and expertise and promote a code of compliance throughout the entire management system and stakeholder dialogue.

In order to meet our criteria of the social aspects of corporate sustainability, a company must have implemented or achieved the following requirements since 2006:

- (1) Integration of social activities into business strategy and decision-making processes. Here, the robustness of the information provided has been taken into account. The recognized relationship between internal (companies) and external (stakeholders) values combine and focus the business-oriented view and stakeholder perspective on social performance [95].
- (2) Publishing of profound CSR reports documenting a wide range of activities related to ongoing social responsibility (in the area of community involvement, social contribution, human resources, customer relations, corporate governance, and diversity). These reports need to be characterized by good “quality,” which means they must contain both numerical and narrative information [96]. Apart from the above, they not only need to contain main objectives (in this case social objectives), but also activities and strategies to achieve them [97].
- (3) Active engagement of independent third party actors in the preparation and verification of CSR reports. This criterion meets the requirement of verifiable information [98], as well as linkage of the organization’s activities to key social issues with active stakeholder engagement, which ensure a high quality of voluntary disclosures.
- (4) Gaining at least three social responsibility awards given by external institutions and organizations based on objective and publicly available criteria. Verification and appreciation of voluntary actions increase its usefulness and its importance for the decision-making process [99].

4.2. *Measuring Environmental Aspects of Corporate Sustainability*

The “ecologisation” of a company refers to the inclusion of environmental management in its operations and strategy. This makes environmental leadership, the implementation of voluntary eco-efficient practices, and proper external stakeholder management necessary conditions for an effective pro-environmental strategy [75,100].

Proactive environmental strategies require complex interaction among different skills and resources [101]. They are intangible managerial innovations and routines requiring organizational commitment towards preserving the natural environment, and are not required by law [11]. They involve formal systems that integrate procedures, processes, monitoring, and reporting of environmental performance targeted at minimizing ecological burdens imposed on a firm’s internal and external stakeholders [102].

To meet our criteria for including environmental aspects into existing management systems in terms of procurement, manufacturing, distribution, marketing, service, research and development, public relations, and infrastructure, a company must have implemented or achieved all of the following requirements since 2006:

- (1) In the area of reporting: regularly issued own-designed environmental reports or reports meeting the requirements of Global Reporting Initiative (GRI) guidelines. An appropriate, reliable and standardized system of environmental control, along with a modern cost-accounting system, is essential to calculate the quantitative effects of implementing various environmental business activities [39].
- (2) In the area of procurement, manufacturing, distribution, research and development, and service: an environmental management system (EMS) designed at the whim of the organization’s management or developed in line with the established voluntary guidelines of the International

Organization for Standardization (ISO) 14001 standard. EMS implementation shows that environmental issues are an important part of day-to-day business, and operations are conducted in a way that reduces their potentially negative environmental impact [103].

- (3) In the area of infrastructure: Leadership in Energy and Environmental Design (LEED) certification of any kind of at least one of its buildings. Green building demonstrates a company's commitment to more efficient use of resources and the provision of a conducive indoor environmental quality for its occupants [104].
- (4) In the area of public relations and marketing: attaining at least three environmental awards granted by third parties and based on specified and publicly accessible criteria that instruct the destination managers which environmental obligations must be fulfilled. Verifiable information not only improves the quality of environmental voluntary disclosures [98], but also ensures a higher level of precision, relevance, and usefulness for decision makers [99].

4.3. Measuring Financial Aspects of Corporate Sustainability

Companies experiencing an excessively fast or negative growth of assets or revenues are usually characterized by greater financial risk through the liquidity effect [105]. The former have fewer discretionary funds available to finance growth, so they are more likely to rely on more expensive external sources of financing. The latter can experience a higher probability of bankruptcy and lower general ability to raise funds. The trade-offs between more growth and higher financial risk might also negatively affect internal corporate governance stability [106].

Cui *et al.* [107] examined the relationship between corporate growth and financial risk and found that the probability that a company will experience financial distress increases dramatically when its growth rate is excessive. The authors also report an insignificant relationship between the probability of financial distress and the real growth rate of non-excessively growing companies.

We interpret sustainability in finance as the autonomy of the growth of the firm. It is strictly connected with the mutual compatibility between growth objectives and established operating and financial policies in the long run. To test the above-mentioned consistency, we introduce the concept of the sustainable rate of growth g^* , which is calculated using the following formula [108]:

$$g^* = p_m \times a_t \times f_l \times e_{rr} \quad (1)$$

where: p_m : profit margin (net income after tax/revenue), a_t : asset turnover (revenue/assets), f_l : financial leverage (assets/equity), and e_{rr} : earnings retention ratio (net income after tax—dividends plus buybacks/net income after tax).

The sustainable rate of growth formula is based on beginning of the year equity and assets. It shows the maximum rate of growth of revenue (or assets) that the company can finance internally, without changing the financial leverage ratio and acquiring additional internal equity capital.

The situation in which a company permanently over performs its sustainable rate of growth shows that the given entity does not provide enough capital to ensure financing of investment needs. If the actual growth rate underperforms the sustainable growth rate in the longer-term perspective, the company has more than enough capital to meet its investment needs. The former is much more difficult to deal with, and requires a more sophisticated approach (*i.e.*, reducing dividends, improving operating performance, increasing leverage, new equity increases or actual growth rate reductions); however, the latter should also be considered as a challenge connected with the obligation to determine a proper way to use excess cash (*i.e.*, new value-creating investment expenditures, mergers and acquisitions, common share repurchases, and increase in dividends). Only growth paths that are balanced with a corporation's operating and financial policies will enable the firm to sustain its market position in the longer-term perspective.

5. Data and Sample Selection

Our initial sample consists of all the companies listed in the FTSE 350 index, which includes 350 of the largest companies by capitalization with a primary listing on the London Stock Exchange (LSE). This translates into a panel data set of 29,400 firm-month observations from 2006 to 2012. We obtain detailed balance sheets, income statements, and cash flow statements for the above-mentioned firms from the Infinancials (INF) database, which served as our main financial data source. A supplementary source from which missing data were derived was the Yahoo Finance Web site. All social and environmental performance data have been retrieved from content analysis of annual CSR reports, environmental reports, public documents, corporate Web sites, and evaluations of corporate social responsibility from knowledgeable external sources.

For each of these companies, we measured the adoption of the corporate sustainability concept into business strategy and operations with the Corporate Sustainability Index (CSI). The construction of the index was based on the work by Tagesson *et al.* [109]. CSI was defined as a sum of nine binary variables, which valued 1 if the relevant disclosure criterion was satisfied and 0 if otherwise:

$$CSI = \sum_{i=1}^9 X_i \quad (2)$$

where: X1—social activities in business strategy and decision-making process, X2—CSR reports, X3—-independent third-party actors in the preparation and verification of CSR reports, X4—at least three external social responsibility awards, X5—environmental reports, X6—environmental management system, X7—Leadership in Energy and Environmental Design (LEED) certification, X8—at least three external environmental awards, and X9—financial sustainability.

There are numerous rating agencies and other sources that provide independent social performance evaluations (e.g., MSCI ESG STATS, Innovest, Vigeo, Ethical Investment Research Information Service (EIRIS), and Canadian Social Investment Database (CSID)). Many researchers used measures constructed by the above entities in their analyses of relations between various aspects of corporate social and financial performance [28,110–112].

Although corporate responsibility measures provided by social monitors are very popular in the academic literature, they have many drawbacks. As Fombrun [113] points out, the surveys and used criteria are either biased in both the companies they rate and the respondents they survey. Furthermore, the used criteria are not systematically articulated. As the result, any possible generalization is problematic. The main specific weaknesses mentioned by some authors are the following [110,111,113,114]: KLD completely excludes companies with poor environmental records; Innovest combines more than 120 and EIRIS over 300 performance indicators which makes them highly complicated and difficult to implement and understand; Vigeo's rating system is not fully credible on the criteria of objectivity and transparency; and CSID focuses solely on the Canadian stock exchange, which significantly limits its geographic scope.

Our CSI index is designed to embrace a variety of different perspectives with the use of a variety of different measures [115]. The biggest advantage of the proposed measure, which uses binary variables, is its parsimonious character, which allows easy application and replication. All data necessary to construct CSI index can be easily and freely obtained from publicly available sources (contrary to expensive, private databases). Although this method does not capture incremental differences across different dimensions of sustainability, it is much better suited for the purpose of our research than the usage of continuous variables. Firstly, we want to select the sample of sustainable companies and not distinguish between top and bottom performers in the above area. Secondly, comparison of the rates of returns on different portfolios requires clear division of analyzed companies into sub-samples, which makes the implementation of binary variables necessary.

From the original list of 350 companies, we first restricted our sample to 207, which met first four criteria that constituted our CSI (X1 to X4). Secondly, we further reduced the number to 141 entities that

also met second four criteria of corporate sustainability index (X5 to X8). Finally, we reduced the sample to 65 firms that were also able to meet last CSI criterion (X9)—were able to achieve mutual compatibility between growth objectives and established operating and financial policies in the long run. In order to meet this goal of financial sustainability, the company's average annual difference between the real rate of revenue growth and the sustainable growth rate, determined by using Formula (1), did not exceed plus and minus 10% in the years of 2006–2012 (For the whole sample of 350 companies 171 under- and 179 over-performed their sustainable rate of growth, with a Chi-square statistic for the above distribution of 5.70, showing that those firms were equal in frequency at the 0.05 level). Firms eliminated from the sample at this stage were equally distributed between those under- and over-performing its g^* and different industries, and thus did not create a bias.

Table 1 illustrates the sample of 65 firms that adopted CS concept into business strategy and operations (with the value of CSI equal to 9) distribution by industry affiliation. The sectors of industrials, financials, consumer discretionary, and consumer staples are most strongly represented in the sample of sustainable companies, while the telecommunication services, materials, and utilities sectors are not well represented. The health care sector is not represented at all. Overall, our sample of sustainable corporations is not concentrated only in the sectors generally acknowledged as “dirtier”—characterized by high negative environmental impact and high capital intensity.

Table 1. Distribution of sustainable companies by Global Industry Classification Standard (GICS) sectors.

GICS Sector	FTSE 350 Companies	Percentage of All FTSE 350 Companies	65 Sampled Companies	Percentage of Sample
Consumer Discretionary	68	19.40%	10	15.40%
Consumer Staples	26	7.40%	7	10.80%
Energy	15	4.30%	5	7.70%
Financials	111	31.70%	11	16.90%
Health Care	9	2.60%	0	0.00%
Industrials	53	15.10%	17	26.20%
Information Technology	24	6.90%	6	9.20%
Materials	25	7.10%	3	4.60%
Telecommunications Services	7	2.00%	2	3.10%
Utilities	12	3.40%	4	6.20%

Table 2 presents a summary of selected statistics for our samples of sustainable corporations and other companies listed in the FTSE 350 index, which did not meet our CS criteria. Several features are worth noting. Firms that adopted sustainability into their business strategies and decision-making processes are generally much larger than other companies when it comes to the book value of their assets. This suggests that larger publicly listed firms exhibit higher probability of socially, environmentally, and financially responsible behavior than smaller publicly listed firms. Compared with unsustainable firms, the growth paths of sustainable firms were much more balanced with their operating and financial policies. The average difference between real rate of growth of revenues and sustainable rate of growth for the latter in the years 2006–2012 was very slight (with 31 firms underperforming and 34 over-performing their g^*), while for the former it exceeded 8.4% (140 underperforming and 145 over-performing their g^*). Corporations that implemented CS had significantly higher Tobin's q indicators (measured as total book value of assets minus book value of equity plus market value of equity over book value of assets) than their unsustainable counterparts, suggesting that firms with better performance are generally more active in sustainable-oriented activities. Our data also confirm that unsustainable corporations were characterized by lower dividend yields, higher research and development (R&D) intensity, and higher systematic risk (measured by levered beta). They also had significantly higher ownership concentration ratios, which may suggest they are less plausible to serve their stakeholders than sustainable corporations.

Table 2. Summary statistics.

Category	Full sample (N = 350)		A: Sustainable Companies (N = 65)		B: Unsustainable Companies (N = 285)		Test of Difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total asset (thousands of GBP)	30,944,286	1,391,000	74,285,653	3,000,800	20,591,025	1,177,396	53,694,628 ***	1,823,405 ***
Rate of growth of revenue	0.194	0.077	0.087	0.066	0.229	0.083	−0.142 ***	−0.017 ***
Sustainable rate of growth of revenue	0.133	0.100	0.087	0.089	0.145	0.100	−0.057 *	−0.011
Retention ratio	0.747	0.736	0.618	0.595	0.779	0.797	−0.161 ***	−0.202 ***
Free cash flow (thousands of GBP)	145,943,238	37,522,500	182,068,288	57,800,000	135,867,900	33,250,000	46,200,388 *	24,550,000 *
R&D to sales ratio	0.016	0.010	0.008	0.008	0.018	0.015	−0.011 ***	−0.006 ***
Levered beta	1.009	0.960	1.000	0.939	1.019	0.981	−0.019	−0.042
Tobin's q	1.557	1.269	1.582	1.315	1.447	1.250	0.135 ***	0.065 ***
Concentration of shareholdings (fraction owned by the five largest shareholders)	0.272	0.099	0.118	0.069	0.306	0.117	−0.189 ***	−0.047 ***

* and *** denote significance at the 10% and 1% level, respectively.

6. Empirical Results

6.1. Corporate Sustainability and Returns

In this subsection, we examine the relationship between the implementation of corporate sustainability and subsequent returns. This will enable us to empirically test the two competing views on CS issues' incorporation into investment decisions—the stakeholder value maximization view and the shareholder expense view. According to the former, the above activities have a positive effect on shareholder wealth because focusing on the interests of stakeholders increases their willingness to support a firm's operations, which increases shareholder wealth. According to the latter, concentration on CS issues has a negative effect on shareholder wealth because of overinvestment of productive resources on unprofitable projects connected with social and environmental responsibility. CS implementation at the micro level requires a holistic and long-term approach and should affect stock prices long after the given event window. If so, returns realized on sustainable companies' portfolios would differ systematically from equivalent securities.

We first compare the long-term stock returns on equally weighted portfolios of companies with CS and all FTSE 350 index constituents for each calendar month from 2006 to 2012. We keep these firms in the above portfolios for the whole period of 84 months. An investment of \$1 in the portfolio of companies with CS on 1 January 2006, when our data began, would have grown to \$1.63 by 31 December 2012. In contrast, a \$1 investment in the FTSE 350 index constituents would have grown to \$1.09 over the same period. This is equivalent to annualized returns of 7.18% for the sustainable portfolio and 1.24% for the market portfolio, a difference of more than 5.94% annually. In order to find out how much of the above-mentioned disparity in performance was driven by differences in the level of systematic risk or sensitivity to size, book-to-market value of equity, and immediate past returns factors of the two portfolios, we regressed excess returns on the four factors from Carhart's [116] model, given by the following equation:

$$R_{it} - R_{ft} = \alpha_i + \beta_i \times RMRF_t + \chi_i \times SMB_t + \delta_i \times HML_t + \varphi_i \times UMD_t + \varepsilon_{it} \quad (3)$$

where $R_{it} - R_{ft}$ is the excess return from the risk-free rate of the sustainable companies' portfolio in month t , $RMRF_t$ is the market excess return in month t , SMB_t is the difference between the returns on portfolios of "small" and "big" capitalization stocks for month t , HML_t is the difference between the returns on portfolios of "high" and "low" book-to-market stocks for month t , UMD_t is the difference between the returns on portfolios of high and low prior return stocks for month t , and ε_{it} is the stochastic error. We interpret α_i as the abnormal return in excess of what could have been achieved by passive investments.

Panel A of Table 3 reports the long-term abnormal stock returns of the equally weighted sustainable corporations' portfolio. As hypothesized, the portfolio of companies with CS generates significant returns over the stock market portfolio. The alpha parameter is 0.35% monthly (4.25% annually). To ensure that any outperformance of the sustainable companies' portfolio does not result from industry affiliation factors (sector specific risks and returns) we also calculated $R_{it} - R_{ft}$ after controlling for industry using the 10 Global Industry Classification Standard (GICS) sectors, among which FTSE 350 companies were distributed. The alpha parameter after controlling for industries was 0.28% monthly (3.61% annually). The above results are presented in Panel B of Table 3.

Next, we compare the long-term stock returns on value-weighted portfolios of companies with CS and all FTSE 350 index constituents. We do so to eliminate possible anomalies connected with the share of tiny stocks in the total amount of stocks and their high possible dispersion of anomaly variables. An investment of \$1 in the portfolio of companies with CS on 1 January 2006 for value-weighted returns would have grown to \$1.48 by 31 December 2012. In contrast, the same investment in the FTSE 350 index constituents would have grown to \$1.07 over the same period. This is equivalent to annualized

returns of 5.73% for the sustainable portfolio and 0.98% for the market portfolio, a difference of more than 4.75% annually.

Table 3. Performance-attribution regressions for sustainable companies portfolio (equally weighted).

Panel A: Excess Returns Over Market Portfolio				
α	RMRF	SMB	HML	UMD
0.0035 *	−0.3082 ***	0.2240 ***	0.0073	0.0014
(0.0027)	(0.0818)	(0.0728)	(0.0446)	(0.0638)
Adjusted $R^2 = 0.610535$				
Panel B: Excess return over industry				
α	RMRF	SMB	HML	UMD
0.0028 ***	−0.1873 ***	0.2189 ***	0.0186 ***	0.0009
(0.0012)	(0.0634)	(0.0813)	(0.0031)	(0.0526)
Adjusted $R^2 = 0.634672$				

* and *** denote significance at the 10% and 1% level, respectively. We estimate four-factor regressions (Equation (3) from the text) of monthly returns for portfolio of sustainable companies. The table contains the results of investment strategy that bought firms with CS. The explanatory variables are RMRF, SMB, HML, and UMD. These variables are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively. The sample period is from 1 January 2006 through 31 December 2012. Standard errors are reported in parentheses.

We then re-estimate the regressions for the four Carhart [116] factors using the value-weighted portfolios. Panels A and B of Table 4 report the results. We find that in this case the portfolio of companies with CS also exhibits significant positive abnormal returns in comparison with the market portfolio. For value-weighted returns, the alpha parameter is 0.29% monthly (3.54% annually), and 0.25% monthly (2.98% annually) after controlling for industry affiliation.

Table 4. Performance-attribution regressions for sustainable companies portfolio (value weighted).

Panel A: Excess Returns Over Market Portfolio				
α	RMRF	SMB	HML	UMD
0.0029 ***	−0.7285 ***	0.8674 ***	−0.2811 **	0.1035
(0.0004)	(0.0929)	(0.1337)	(0.1393)	(0.0787)
Adjusted $R^2 = 0.571642$				
Panel B: Excess return over industry				
α	RMRF	SMB	HML	UMD
0.0025 ***	−0.2423 ***	0.7798 ***	0.0116 ***	0.1214 *
(0.0010)	(0.0714)	(0.1603)	(0.0038)	(0.066)
Adjusted $R^2 = 0.583457$				

*, ** and *** denote significance at the 10%, 5% and 1% level, respectively. We estimate four-factor regressions (Equation (3) from the text) of monthly returns for portfolio of sustainable companies. The table contains the results of investment strategy that bought firms with CS. The explanatory variables are RMRF, SMB, HML, and UMD. These variables are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively. The sample period is from 1 January 2006 through 31 December 2012. Standard errors are reported in parentheses.

All the results of the above subsection are statistically and economically significant, confirming our hypothesis that companies that adopt sustainability into their business strategies and decision-making processes earn higher than average stock market returns.

6.2. Corporate Sustainability and Stock Return Volatility

This paper's hypothesis is that firms with balanced financial, social, and environmental activities and its voluntary, stakeholder engaged, disclosure are likely to experience lower volatility on stock

returns than other companies. To provide direct evidence on this channel, we use the annual standard deviation from monthly stock returns over the years 2006–2012. Table 5 reports the descriptive statistics of the above risk measures for both equally (Panel A) and value weighted (Panel B) sustainable corporations and market portfolios.

Table 5. Descriptive statistics of the annual standard deviations from the monthly stock returns between 2006 and 2012.

Portfolio	Mean	Median	SD	Min	Max	Kurtosis	Skewness
Panel A: Equally weighted portfolios							
Sustainable companies	0.075	0.068	0.025	0.042	0.162	2.458	1.540
Market portfolio	0.090	0.080	0.033	0.055	0.250	5.932	2.126
Panel B: Value weighted portfolios							
Sustainable companies	0.029	0.024	0.015	0.019	0.083	1.602	1.234
Market portfolio	0.082	0.074	0.043	0.030	0.287	5.458	1.836

The results reveal a substantial and negative relationship between corporate sustainability and stock return volatility. Several values of the distributions of annual standard deviation from monthly stock returns for the entire stock market portfolio are often two times, or more, greater than those estimated for sustainable companies' portfolio. For example, the mean standard deviation from the monthly stock returns over the sample period for firms with CS was 20% lower for equally weighted samples and almost three times lower for value-weighted samples. The skewness coefficients were, respectively, 38% and 49% lower, indicating that distribution of stock price volatility was more skewed to the positive side for the stock market portfolio during the period analyzed. Finally, the kurtosis coefficient, which is a measure of the thickness of the tails of the distribution, was 2.4, for equally weighted samples, and 3.4 times, for value-weighted samples, lower for the sustainable companies' portfolio. This indicates that there were much fewer outliers among the firms with balanced financial, social, and environmental activities with its voluntary, stakeholder engaged, disclosures. We also find that sustainable companies tend to have lower monthly return volatility amplitude and lower dispersion, measured by the coefficient of variation, than similar volatilities for the FTSE 350 index.

6.3. Corporate Sustainability and Stock Market Crash Resistance

Measuring features of stock market cycles for sustainable corporations is of potential interest for both investors and managers. If the adoption of corporate sustainability into business strategy and decision-making process is characterized by higher than average resistance to general swings in stock market prices, then the integration of financial objectives with restrictions on environmental and social issues into investment practices can have a positive impact in terms of shareholders' risk-adjusted financial returns. This issue is particularly pronounced in times of current financial turmoil caused by the financial crisis of 2007.

In this section, we examine the selected characteristics of the CS portfolio within stock market cycles. We use average monthly data on stock returns for equally and value-weighted portfolios of sustainable corporations and FTSE 350 index constituents from 1 January 2006 to 31 December 2015. We do so to assess the possible importance of corporate sustainability as a factor diminishing investment risk in times of economic and financial turbulence. Although we explicitly focused all of our previous calculations on the period of the recent global financial crisis (years 2006–2012), we decided to include three additional years here in order to ensure that reported regularities are more systematic and not solely characteristic for recession and recovery periods. The average monthly returns for both portfolios for the years 2006–2015 are illustrated in Figures 1 and 2.

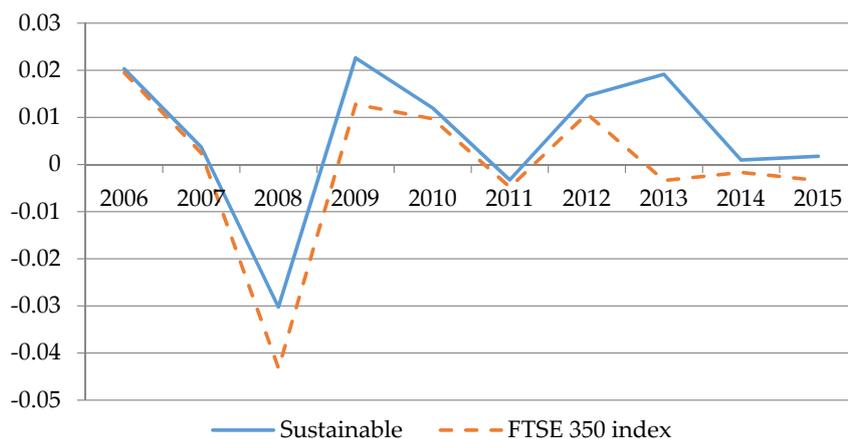


Figure 1. Average monthly returns for sustainable corporations and FTSE 350 constituents portfolios, 2006–2015 (equally weighted).

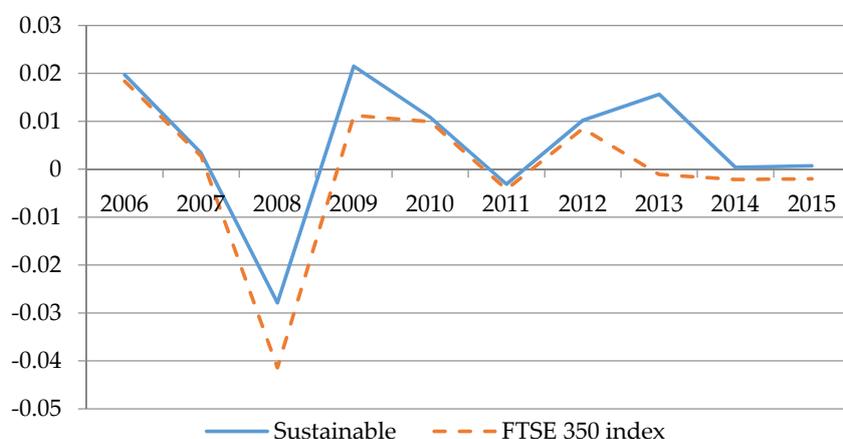


Figure 2. Average monthly returns for sustainable corporations and FTSE 350 constituents portfolios, 2006–2015 (value weighted).

Figures 1 and 2 clearly show that the spread between the rate of return on the sustainable corporations and stock market portfolios jumped in the period immediately following the 2007–2008 sub-prime mortgage financial crisis, which led to the recent global economic downturn, for both equally and value-weighted data. We also see that investment in sustainable companies is more resistant to economic meltdowns—in 2008 and 2011 both groups experienced declines in average monthly returns, however, this decline was much lower for the portfolio of firms with CS. It also constantly outperformed market portfolio since the beginning of economic recovery in 2013. Furthermore, the observed surplus in the stock performance of the sustainable companies increased significantly since the beginning of the global economic crisis. This indicates that more market participants started to pay close attention to companies' long-term environmental, social, and financial policies, and its proper voluntary reporting and sustainable investment practices gained increasing importance in capital markets.

To further test the abnormal performance of equities in the sustainable corporations portfolio compared to the market portfolio during the stock market cycle, we calculated the annual Penalized Internal Rate of Return (PIRR) for the former, given by the following equation [117]:

$$PIRR_t = \mu_t - \left[\frac{(\mu_{mt} - r_{ft})}{\sigma_{mt}} \right] \times \sigma_t \quad (4)$$

where μ_t is the average monthly return on a given portfolio in year t , μ_{mt} is the average monthly return on the market portfolio in year t , r_{ft} is the monthly return on a risk-free asset for year t , σ_{mt} is the standard deviation of the rate of return on the market portfolio for year t , and σ_t is the standard deviation of the rate of return on the given portfolio for year t . We interpret $PIRR_t$ as the reward-to-variability performance measure for total risk.

Table 6 reports $PIRR_t$ differences between sustainable corporations and FTSE 350 (The PIRR for the FTSE 350 portfolio is the monthly return on the risk-free asset, as can be obtained from Formula (4).) portfolios for the equally weighted (Panel A) and value-weighted (Panel B) data over the years 2006–2015 (We decided to make out of the sample analysis for the years 2013–2015 in order to further confirm, that reported pattern of sustainable companies portfolio outperformance in comparison to the market was still present in the additional period and that benefits of CS are incorporated into stock prices over the longer run.). Adjusting the equity return for standard deviation in a linear penalization also shows regularly higher returns for investment in companies with balanced financial, social, and environmental activities. Moreover, the observed surplus in the reward-to-variability stock performance of the sustainable companies has increased during the global financial meltdown.

Table 6. Annual Penalized Internal Rate of Return (PIRR) differences between Sustainable Companies and FTSE 350 portfolio, 2006–2015.

Panel A: Equally Weighted Portfolio										
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
0.0215	0.0391	0.0402	0.0399	0.0695	0.0648	0.0546	0.0301	0.0227	0.0116	0.0394
Panel B: Value Weighted Portfolio										
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
0.0206	0.0308	0.0344	0.0366	0.0482	0.054	0.0498	0.0264	0.0209	0.0101	0.0332

7. Conclusions

This study investigates the relationship between corporate sustainability and various aspects of shareholder wealth creation for a panel data sample of FTSE 350 companies between the years 2006 and 2012. Using our CS criteria, which cover all major areas of a company's activities (social, environmental, and financial) at the same time, we find that sustainable firms generate superior long-term returns in the times of current global financial crisis, even when controlling for market factor risk, market capitalization, book-to-market value, immediate past returns, and industry affiliation. These results suggest that firms that adopt sustainability into their business strategies and decision-making processes engage in investment activities that enhance their long-term efficiency, which ultimately results in an overall increase in shareholder wealth and corporate value. The results also imply that corporate sustainable performance investment screens may improve overall investors' returns and lead to clear utility gains. It seems that CS is incorporated into stock prices gradually over time.

Using various distributions of annual standard deviation from monthly stock returns measurers, we find that a firm's engagement in financially, environmentally, and socially responsible behavior and voluntary, stakeholder engaged, and independently verified self-reporting on it has a positive impact on overall risk. It appears that CS is priced by the market and leads to generally higher levels of stock price volatility for companies that do not incorporate sustainability issues into their business operations. These findings imply that the market incorporates for firms with CS, at least to some extent, superior management skills and more effective business and financial planning into stocks valuations.

We also find that investment in companies with CS not only generates higher returns during the peak phase, but also diminishes shareholders' losses during the stock market crash. It shows that the importance of CS generally becomes more pronounced among investors, regardless of the current stock market phase. However, the wealth-protective effects of corporate sustainability have become more pivotal since the beginning of the current turmoil in financial markets, which started after the

U.S. sub-prime mortgage financial crisis of 2007–2008. This makes the economic crisis of 2007 a turning point for closer integration of investors' financial objectives, with restrictions on financial, ecological, and social issues, as well as its proper, voluntary reporting.

The results of this paper are consistent with the stakeholder value maximization view of a firm's socially, environmentally, and financially responsible activities. They can have important implications for investors and corporate managers. As for investors, our results should facilitate portfolio construction by taking additional sustainability-oriented dimensions into account. As for firm managers, our results should facilitate strategic business decisions oriented at maximization of stakeholder value by implementing a proper combination of sustainability-oriented activities and stakeholder engaged, independently verified self-reporting.

The chosen methodology has some limitations. Our sample was restricted to the British financial market. Therefore, conclusions should not automatically be generalized to other markets. Our study's implications for abnormal returns and stock price volatility are unclear. The observed wealth-generating effects of CS assumed weak prediction in that area by the market. If CS screening becomes common practice, there is no reason to expect substantial abnormal long-term returns from its implementation. In addition, we analyzed only a selected group of financial, social, and environmental activity aspects. Hence, it is possible that our results are driven by some unobservable or unconsidered company characteristics. These multiple possible causal explanations have different corporate policy and investment strategy implications and stand as a challenge for future research. It might also be fruitful for future research to examine the CS-risk relation using other measures and to extend our study to non-British firms and different periods.

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References

1. Lacy, P.; Cooper, T.; Hayward, R.; Neuberger, L. A New Era of Sustainability-UN Global Compact-Accenture CEO Study 2010. Available online: http://www.uncsd2012.org/content/documents/Accenture_A_New_Era_of_Sustainability_CEO_Study.pdf (accessed on 20 January 2016).
2. KPMG. International Survey of Corporate Responsibility Reporting 2011. Available online: <https://www.kpmg.com/PT/pt/IssuesAndInsights/Documents/corporate-responsibility2011.pdf> (accessed on 9 March 2016).
3. United Nations Environmental Program (UNEP). Principles for Responsible Investments. Available online: <http://www.unpri.org/> (accessed on 1 November 2013).
4. Global Sustainable Investment Alliance (GSIA). 2012 Global Sustainable Investment Review. Available online: <http://gsiareview2012.gsi-alliance.org/> (accessed on 9 March 2016).
5. European Social Investment Forum (Eurosif). European SRI Study 2012. Available online: <http://www.eurosif.org/publication/view/european-sri-study-2012/> (accessed on 9 March 2013).
6. US Social Investment Forum (US SIF). 2012 Report on Sustainable and Responsible Investing Trends in the United States (PDF). Available online: http://www.ussif.org/store_product.asp?prodid=4 (accessed on 9 March 2016).
7. Przychodzen, J.; Przychodzen, W. Corporate Sustainability and Shareholder Wealth. *J. Environ. Plann. Man.* **2013**, *56*, 474–493. [CrossRef]
8. Weber, M. The Business Case for Corporate Social Responsibility: A Company-Level Measurement Approach for CSR. *Eur. Manag. J.* **2008**, *26*, 247–261. [CrossRef]
9. Wempe, J.; Kaptein, M. *The Balanced Company: A Theory of Corporate Integrity*; Oxford University Press: Oxford, UK, 2002.
10. Porter, M.E.; van der Linde, C. Green and Competitive: Ending the Stalemate. *Harvard. Bus. Rev.* **1995**, *73*, 120–134.
11. Hart, S.L. A Natural-Resource-Based View of the Firm. *Acad. Manag. Rev.* **1995**, *20*, 986–1014.

12. Hart, S.L.; Dowell, G. A Natural-Resource-Based View of the Firm: Fifteen Years After. *J. Manag.* **2011**, *37*, 1464–1479.
13. Fuller, D.A.; Ottman, J.A. Moderating Unintended Pollution: the Role of Sustainable Product Design. *J. Bus. Res.* **2004**, *57*, 1231–1238. [[CrossRef](#)]
14. Reinhardt, F.L. Environmental Product Differentiation: Implications for Corporate Strategy. *Calif. Manag. Rev.* **1994**, *40*, 43–73. [[CrossRef](#)]
15. Orsato, R. Competitive Environmental Strategies: When does It Pay to be Green? *Calif. Manag. Rev.* **2006**, *48*, 127–143. [[CrossRef](#)]
16. Elfenbein, D.; McManus, B. A Greater Price for a Greater Good? Evidence that Consumers Pay More for Charity-Linked Products. *Am. Econ. J. Econ. Pol.* **2010**, *2*, 28–60. [[CrossRef](#)]
17. Konar, S.; Cohen, M. Does the Market Value Environmental Performance. *Rev Econ. Stat.* **2001**, *83*, 281–289. [[CrossRef](#)]
18. Rowley, T.; Berman, S. A Brand New Brand of Corporate Social Performance. *Bus. Soc.* **2000**, *39*, 397–418. [[CrossRef](#)]
19. Edmans, A. Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices. *J. Financ. Econ.* **2011**, *101*, 621–640. [[CrossRef](#)]
20. Hillman, A.J.; Keim, G.D. Shareholder Value, Stakeholder Management, and Social Issues: What's the Bottom Line? *Strategic. Manag. J.* **2001**, *22*, 125–139. [[CrossRef](#)]
21. Gardberg, N.A.; Fombrun, C. Corporate Citizenship: Creating Intangible Assets Across Institutional Environments. *Acad. Manag. Rev.* **2006**, *31*, 329–346. [[CrossRef](#)]
22. Scholtens, B.; Zhou, Y. Stakeholder Relations and Financial Performance. *Sustain. Dev.* **2008**, *16*, 213–232. [[CrossRef](#)]
23. Harrison, J.S.; Bosse, D.A.; Phillips, R.A. Managing for Stakeholders, Stakeholder Utility Functions, and Competitive Advantage. *Strategic Manag. J.* **2010**, *31*, 58–74. [[CrossRef](#)]
24. Artiach, T.; Lee, D.; Nelson, D.; Alker, J. The Determinants of Corporate Sustainability Performance. *Account. Financ.* **2010**, *50*, 31–51. [[CrossRef](#)]
25. Margolis, J.; Elfenbien, H. Do Well by Doing Good: Don't Count on It. *Harvard Bus Rev.* **2008**, *86*, 19–20.
26. Boyle, E.J.; Higgins, M.M.; Rhee, S.G. Stock Market Reaction to Ethical Initiatives of Defense Contractors: Theory and Evidence. *Critic. Perspect. Account.* **1997**, *8*, 541–561. [[CrossRef](#)]
27. Kahn, N.R.; Lekander, C.; Leimkuhler, T. Just Say No? The Investment Implications of Tobacco Divestiture. *J. Invest.* **1997**, *6*, 62–70. [[CrossRef](#)]
28. Brammer, S.; Brooks, C.; Pavelin, S. Corporate Social Performance and Stock Returns: UK Evidence from Disaggregate Measures. *Financ. Manag.* **2006**, *35*, 97–116. [[CrossRef](#)]
29. Roman, R.M.; Hayibor, S.; Agle, B.R. The Relationship between Social and Financial Performance: Repainting a Portrait. *Bus. Soc.* **1999**, *38*, 109–125. [[CrossRef](#)]
30. Orlitzky, M.; Schmidt, F.L.; Rynes, S.L. Corporate Social and Financial Performance: A Meta-analysis. *Organ. Stud.* **2003**, *24*, 403–441. [[CrossRef](#)]
31. Aragon-Correa, A.J.; Hurtado-Torres, N.; Sharma, S.; Garcia-Morales, V.J. Environmental Strategy and Performance in Small Firms: A Resource-Based Perspective. *J. Environ. Manag.* **2008**, *86*, 88–103. [[CrossRef](#)] [[PubMed](#)]
32. Derwall, J.; Guenster, N.; Bauer, R.; Koedijk, K. The Eco-Efficiency Premium Puzzle. *Financ. Anal. J.* **2005**, *61*, 51–63. [[CrossRef](#)]
33. Graham, J.R.; Harvey, C.R.; Rajgopal, S. The Economic Implications of Corporate Financial Reporting. *J. Account. Econ.* **2005**, *40*, 3–73. [[CrossRef](#)]
34. Clarkson, P.; Overell, M.; Chapple, L. Environmental Reporting and Its Relation to Corporate Environmental Performance. *J. Account. Financ. Bus. Stud.* **2011**, *47*, 27–60. [[CrossRef](#)]
35. Klassen, R.; McLaughlin, C. The Impact of Environmental Management on Firm Performance. *Manag. Sci.* **1996**, *42*, 1199–1214. [[CrossRef](#)]
36. Jones, S.; Frost, G.; Loftus, J.; van Der Laan, S. An Empirical Investigation of the Market Returns and Financial Performance of Entities Engaged in Sustainability Reporting. *Aust. Account. Rev.* **2007**, *17*, 78–87. [[CrossRef](#)]
37. Zaho, J. The Effect of the ISO 14001 Environmental Management System on Corporate Financial Performance. *Int. J. Bus. Excell.* **2008**, *1*, 210–230. [[CrossRef](#)]

38. Fisher-Vanden, K.; Thorburn, K. Voluntary Corporate Environmental Initiatives and Shareholder Wealth. *J. Environ. Econ. Manag.* **2011**, *62*, 430–445. [[CrossRef](#)]
39. Schaltegger, S.; Figge, F. Environmental Shareholder Value: Economic Success with Corporate Environmental Management. *Eco-Manage Aud.* **2000**, *7*, 29–42. [[CrossRef](#)]
40. Jacobs, B.; Singhal, V.R.; Subramanian, R. An Empirical Investigation of Environmental Performance and the Market Value of the Firm. *J. Oper. Manag.* **2010**, *28*, 430–441. [[CrossRef](#)]
41. Ioppolo, G.; Cucurachi, S.; Salomone, R.; Saija, G.; Shi, L. Sustainable Local Development and Environmental Governance: A Strategic Planning Experience. *Sustainability* **2016**, *8*, 180. [[CrossRef](#)]
42. Williams, G. Some Determinants of the Socially Responsible Investment Decision: A Cross-Country Study. *J. Behav. Financ.* **2007**, *8*, 43–57. [[CrossRef](#)]
43. Barnea, A.; Rubin, A. Corporate Social Responsibility as a Conflict between Shareholders. *J. Bus. Ethics.* **2010**, *97*, 71–86. [[CrossRef](#)]
44. Soppe, A. Sustainable Corporate Finance. *J. Bus. Ethics.* **2004**, *53*, 213–224. [[CrossRef](#)]
45. Soppe, A. Sustainable Finance as a Connection between Corporate Social Responsibility and Social Responsible Investing. *Indian Manag. Res. J.* **2011**, *1*, 13–23.
46. Johnsen, B. Socially Responsible Investing: A Critical Appraisal. *J. Bus. Ethics.* **2003**, *43*, 219–222. [[CrossRef](#)]
47. Peylo, B. A Synthesis of Modern Portfolio Theory and Sustainable Investment. *J. Invest.* **2012**, *21*, 33–46.
48. Margolis, J.; Walsh, J. Misery Loves Companies: Rethinking Social Initiatives by Business. *Admin. Sci. Quart.* **2003**, *48*, 268–305. [[CrossRef](#)]
49. Renneboog, L.; Ter Horst, J.; Zhang, C. Socially Responsible Investments: Institutional Aspects, Performance, and Investor Behavior. *J. Bank Financ.* **2008**, *32*, 1723–1742. [[CrossRef](#)]
50. Lo, S.; Sheu, H. Is Corporate Sustainability a Value-Increasing Strategy for Business? *Corp. Gov. Int. Rev.* **2007**, *15*, 345–358. [[CrossRef](#)]
51. Lopez, M.; Garcia, A.; Rodriguez, L. Sustainable Development and Corporate Performance: A Study Based on the Dow Jones Sustainability Index. *J. Bus. Ethics.* **2007**, *75*, 285–300. [[CrossRef](#)]
52. Christofi, A.; Christofi, P.; Sisaye, S. Corporate Sustainability: Historical Development and Reporting Practices. *Manag. Res. Rev.* **2012**, *35*, 157–172. [[CrossRef](#)]
53. Deegan, C. Environmental Disclosures and Share Prices—A Discussion about Efforts to Study this Relationship. *Account. Forum.* **2004**, *28*, 87–97. [[CrossRef](#)]
54. Murray, A.; Sinclair, D.; Power, D.; Gray, R. Do Financial Markets Care about Social and Environmental Disclosure? Further Evidence and Exploration from the UK. *Account. Aud. Account. J.* **2006**, *19*, 228–255. [[CrossRef](#)]
55. Jones, G.; Jones, B.; Little, P. Reputation as Reservoir: Buffering against Loss in Times of Economic Crisis. *Corp. Reput. Rev.* **2000**, *3*, 21–29. [[CrossRef](#)]
56. Schnietz, K.; Epstein, M. Exploring the Financial Value of a Reputation for Corporate Social Responsibility during a Crisis. *Corp. Reput. Rev.* **2005**, *7*, 327–345. [[CrossRef](#)]
57. Godfrey, P.C.; Merrill, C.B.; Hansen, J.M. The Relationship between Corporate Social Responsibility and Shareholder Value: An Empirical Test of the Risk Management Hypothesis. *Strateg. Manag. J.* **2009**, *30*, 425–445. [[CrossRef](#)]
58. Brammer, S.; Millington, A. Does it Pay to be Different? An Analysis of the Relationship between Corporate Social and Financial Performance. *Strateg. Manag. J.* **2008**, *29*, 1325–1343. [[CrossRef](#)]
59. Etzion, D. Research on Organizations and the Natural Environment. 1992–Present: A Review. *J. Manag.* **2007**, *33*, 637–664. [[CrossRef](#)]
60. Funk, K. Sustainability and Performance. *MIT Sloan Manag. Rev.* **2003**, *44*, 65–70.
61. Berns, M.; Towned, A.; Khayat, Z.; Balagopal, B.; Reeves, M.; Hopkins, M.; Kruschwitz, N. Sustainability and Competitive Advantage. *MIT Sloan Manag. Rev.* **2009**, *51*, 18–26.
62. Carroll, A.B.; Shabana, K.M. The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *Int. J. Manag. Rev.* **2010**, *12*, 85–105. [[CrossRef](#)]
63. Modigliani, F.; Miller, M. The Cost of Capital, Corporation Finance, and the Theory of Investment. *Am. Econ. Rev.* **1958**, *48*, 261–297.
64. Fama, E.F.; French, K.R. Disagreement, Tastes and Asset Prices. *J. Financ. Econ.* **2007**, *83*, 667–689. [[CrossRef](#)]

65. Heinkel, R.; Kraus, A.; Zechner, J. The Effect of Green Investment on Corporate Behavior. *J. Financ. Quant. Anal.* **2001**, *36*, 431–449. [[CrossRef](#)]
66. Mackey, A.; Mackey, T.B.; Barney, J.B. Corporate Social Responsibility and Firm Performance: Investor Preferences and Corporate Strategies. *Acad. Manag. Rev.* **2007**, *32*, 817–835. [[CrossRef](#)]
67. Bouslah, K.; Kryzanowski, L.; M'Zali, B. The Impact of the Dimensions of Social Performance on Firm Risk. *J. Bank. Financ.* **2013**, *37*, 1258–1273. [[CrossRef](#)]
68. Merton, R.C. A Simple Model of Capital Market Equilibrium with Incomplete Information. *J. Financ.* **1987**, *42*, 483–510. [[CrossRef](#)]
69. Lee, D.D.; Faff, R.W. Corporate Sustainability Performance and Idiosyncratic Risk: A Global Perspective. *Financ. Rev.* **2009**, *44*, 213–237. [[CrossRef](#)]
70. Mao, J.C.T. Security Pricing in an Imperfect Capital Market. *J. Financ. Quant. Anal.* **1971**, *6*, 1105–1116. [[CrossRef](#)]
71. Klapper, L.F.; Love, I. Corporate Governance, Investor Protection, and Performance in Emerging Markets. *J. Corp. Financ.* **2004**, *10*, 703–728. [[CrossRef](#)]
72. Bolton, G.; Ockenfels, A.; Stauf, J. Social Responsibility Promotes Conservative Risk Behavior. *Eur. Econ. Rev.* **2015**, *74*, 109–127. [[CrossRef](#)]
73. Waddock, S.A.; Graves, S.B. The Corporate Social Performance–Financial Performance Link. *Strat. Manag. J.* **1997**, *18*, 303–319. [[CrossRef](#)]
74. Fernando, C.; Sharfman, M.; Uysal, V. Does Greenness Matter? The Effect of Corporate Environmental Performance on Ownership Structure, Analyst Coverage and Firm Value. Available online: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.619.1951&rep=rep1&type=pdf> (accessed on 11 March 2016).
75. Bansal, P.; Clelland, I. Talking Trash: Legitimacy, Impression Management, and Unsystematic Risk in the Context of the Natural Environment. *Acad. Manag. J.* **2004**, *47*, 93–103. [[CrossRef](#)]
76. Christmann, P. Effects of Best Practices of Environmental Management on Cost Advantage: The Role of Complementary Assets. *Acad. Manag. J.* **2000**, *43*, 663–680. [[CrossRef](#)]
77. Campbell, D.J. Intra- and Intersectoral Effects in Environmental Disclosures: Evidence for Legitimacy Theory? *Bus. Strat. Environ.* **2003**, *12*, 357–371. [[CrossRef](#)]
78. Rosenberg, J.V.; Engle, R.F. Empirical Pricing Kernels. *J. Financ. Econ.* **2002**, *64*, 341–372. [[CrossRef](#)]
79. Giambona, E.; Golec, J. Mutual Fund Volatility Timing and Management Fees. *J. Bank. Financ.* **2009**, *33*, 589–599. [[CrossRef](#)]
80. Oikonomou, I.; Brooks, C.; Pavelin, S. The Impact of Corporate Social Performance on Financial Risk and Utility: A Longitudinal Analysis. *Financ. Manag.* **2012**, *41*, 483–515. [[CrossRef](#)]
81. Gray, R.; Javad, M.; Power, D.M.; Sinclair, C.D. Social and Environmental Disclosure and Corporate Characteristics: A Research Note and Extension. *J. Bus. Financ. Account.* **2001**, *28*, 327–356. [[CrossRef](#)]
82. Patten, D.M.; Crampton, W. Legitimacy and the Internet: An Examination of Corporate Webpage Environmental Disclosure. *Adv. Environ. Account. Manag.* **2004**, *2*, 31–57.
83. Unerman, J. Reflections on Quantification in Corporate Social Reporting Content Analysis. *Account. Audit. Accountanility J.* **2000**, *13*, 667–681. [[CrossRef](#)]
84. Ness, K.E.; Mirza, A.M. Corporate Social Disclosure: A Note on a Test of Agency Theory. *Br. Account. Rev.* **1991**, *23*, 211–218. [[CrossRef](#)]
85. Patten, D.M. Exposure, Legitimacy, and Social Disclosure. *J. Account. Publ. Pol.* **1991**, *10*, 297–308. [[CrossRef](#)]
86. Aerts, W. Picking up the Pieces: Impression Management in the Retrospective Attributional Framing of Accounting Outcomes. *Account. Organiz. Soc.* **2005**, *30*, 493–517. [[CrossRef](#)]
87. Tregidga, H.; Milne, M.J. From Sustainable Management to Sustainable Development: A Longitudinal Analysis of Leading New Zealand Environmental Reporters. *Bus. Strat. Environ.* **2006**, *15*, 219–241. [[CrossRef](#)]
88. Bowen, H. *Social Responsibility of the Businessman*; Harper and Row: New York, NY, USA, 1953.
89. Quinn, J.; Mintzberg, H.; James, R. *The Strategy Process*; Prentice-Hall: Englewood Cliffs, NJ, USA, 1987.
90. Davis, K. The Case For and Against Business Assumption of Social Responsibilities. *Acad. Manag. J.* **1973**, *16*, 312–322. [[CrossRef](#)]

91. Carroll, A.B. The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders. *Bus. Horiz.* **1991**, *34*, 39–48. [[CrossRef](#)]
92. Husted, B.W. Governance Choices for Corporate Social Responsibility: To Contribute, Collaborate or Internalize? *Long Range Plann.* **2003**, *36*, 481–498. [[CrossRef](#)]
93. Hediger, W. Welfare and Capital-Theoretic Foundations of Corporate Social Responsibility and Corporate Sustainability. *J. Socio-Econ.* **2010**, *39*, 518–526. [[CrossRef](#)]
94. Lee, K.H.; Saen, R.F. Measuring Corporate Sustainability Management: A Data Envelopment Analysis Approach. *Int. J. Prod. Econ.* **2012**, *140*, 219–226. [[CrossRef](#)]
95. Burrit, R.L.; Schaltegger, R. Sustainability Accounting and Reporting: Fad or Trend? *Account. Aud. Account. J.* **2010**, *23*, 829–846. [[CrossRef](#)]
96. Lang, M.; Lundholm, R. Cross-Sectional Determinants of Analysts Ratings of Corporate Disclosures. *J. Account. Res.* **1993**, *31*, 246–271. [[CrossRef](#)]
97. Loew, T.; Ankele, K.; Braun, S.; Clausen, J. *Bedeutung der Internationalen CSR-Diskussion für Nachhaltigkeits und Die Sich Daraus Ergebenden Anforderungen an Unternehmen mit Fokus Berichterstattung*; Future e.V.: Münster, Germany; Institut Für Ökologische Wirtschaftsforschung (IÖW): Berlin, Germany, 2004. (In Germany)
98. Toms, J.S. Firm Resources, Quality Signals and the Determinants of Corporate Environmental Reputation: Some UK Evidence. *British Account. Rev.* **2002**, *34*, 257–282. [[CrossRef](#)]
99. Cormier, D.; Magnan, M.; van Velthoven, B. Environmental Disclosure Quality in Large German Companies: Economic Incentives, Public Pressure or Institutional Conditions? *Eur. Account. Rev.* **2005**, *14*, 3–39. [[CrossRef](#)]
100. Delmas, M. Stakeholders and Competitive Advantage: The Case of ISO 14001. *Prod. Oper. Manag.* **2001**, *10*, 343–358. [[CrossRef](#)]
101. Ramus, C.A.; Steger, U. The Roles of Supervisory Support Behaviors and Environmental Policy in Employee “Ecoinitiative” at Leading-Edge European Companies. *Acad. Manag. J.* **2000**, *43*, 605–626. [[CrossRef](#)]
102. Darnall, N.; Henriques, I.; Sadorsky, P. Adopting Proactive Environmental Strategy: The Influence of Stakeholders and Firm Size. *J. Manag. Stud.* **2010**, *47*, 1072–1093. [[CrossRef](#)]
103. Wagner, M.; Schaltegger, S. The Effect of Corporate Environmental Strategy Choice and Environmental Performance on Competitiveness and Economic Performance: An Empirical Study of EU Manufacturing. *Eur. Manag. J.* **2004**, *22*, 557–572. [[CrossRef](#)]
104. Ravindu, S.; Rameezdeen, R.; Zuo, J.; Zhou, Z.; Chandratilake, R. Indoor Environmental Quality of Green Buildings: Case Study of an LEED Platinum Certified Factory in Warm Humid Tropical Climate. *Build Environ.* **2015**, *84*, 105–113. [[CrossRef](#)]
105. Lang, L.; Ofek, E.; Stulz, R.M. Leverage, Investment, and Firm Growth. *J. Financ. Econ.* **1996**, *40*, 3–29. [[CrossRef](#)]
106. Wu, X. Corporate Governance and Audit Fees: Evidence from Companies Listed on the Shanghai Stock Exchange. *China J. Account. Res.* **2012**, *5*, 321–342. [[CrossRef](#)]
107. Cui, X.G.; Wang, L.Y.; Xu, H. High-Speed Growth, Financial Crisis and Risk Forecasting. *Account. Res.* **2007**, *12*, 55–62.
108. Higgins, R. How Much Growth can a Firm Afford? *Financ. Manag.* **1997**, *6*, 7–16. [[CrossRef](#)]
109. Tagesson, T.; Blank, V.; Broberg, P.; Collin, S.O. What Explains the Extent and Content of Social and Environmental Disclosures on Corporate Websites: A Study of Social and Environmental Reporting in Swedish Listed Corporations. *Corp. Soc. Responsib. Environ. Manag.* **2009**, *16*, 352–364. [[CrossRef](#)]
110. Ho, F.N.; Wang, H.-M.D.; Vitell, S.J. A Global Analysis of Corporate Social Performance: The Effects of Cultural and Geographic Environments. *J. Bus. Ethics.* **2012**, *107*, 423–443. [[CrossRef](#)]
111. Ernult, J.; Ashta, A. How to Measure Global Sustainability Performance in a Service Enterprise? A Case Study of the Credibility of Vigeo’s Rating of Caisse D’Epargne. *J. Serv. Res.* **2008**, *8*, 101–123.
112. Cellier, A.; Chollet, P. The Effects of Social Ratings on Firm Value. *Res. Int. Bus. Financ.* **2016**, *36*, 656–683. [[CrossRef](#)]
113. Fombrun, C.J. Indices of Corporate Reputation: An Analysis of Media Rankings and Social Monitors’ Ratings. *Corp. Reput. Rev.* **1998**, *1*, 327–334. [[CrossRef](#)]

114. Graves, S.B.; Waddock, S.A. Institutional Owners and Corporate Social Performance. *Acad. Manag. J.* **1994**, *37*, 1034–1046. [[CrossRef](#)]
115. Carroll, A.B. Corporate Social Performance Measurement: A Comment on Methods for Evaluating an Elusive Construct. In *Research in Corporate Social Performance and Policy: A Research Annual*; Post, J.E., Collins, D., Eds.; Elsevier Science Limited: Amsterdam, Dutch, 1991; Volume 12, pp. 385–401.
116. Carhart, M. On Persistence in Mutual Fund Performance. *J. Financ.* **1997**, *52*, 57–82. [[CrossRef](#)]
117. Gómez-Bezares, F.; Gómez-Bezares, F.R. Classic Performance Indexes Revisited: Axiomatic and Applications. *Appl. Econ. Lett.* **2012**, *19*, 467–470. [[CrossRef](#)]



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