

**Title: 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 an extensive panel data sample of 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. CS is also associated with higher resistance to stock market crashes. Our results show that when using the corporate sustainability concept as a process-based measurement of firms' internal efforts to address sustainability issues, responsible firm behavior pays off.

**JEL classification:** G14, G32, M14

**Keywords:** corporate sustainability, shareholder wealth, sustainable corporate finance, corporate financial performance, socially responsible investing, financial crisis

## **1. Introduction**

In recent years, sustainable investment practices 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 (Lacy et al., 2010). Ninety-five percent of the 250 largest companies in the world now report on their corporate responsibility (CR) activities (KPMG, 2011). The Global Reporting Initiative (GRI) attempts to provide voluntary guidance for corporations that generate stand-alone sustainability reports. Almost 1,200 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 (UN, 2012). Stock market data show that sustainable investments reached US\$13.6 trillion globally by December 31, 2011, with Europe's share at 64.5% (GSIA, 2012). Assets engaged in sustainable and responsible investing practices currently represent 27.7% of all assets under management in Europe (Eurosif, 2012) and 11.3% in the US (USsif, 2012).

The natural environment could create a serious constraint on firms' attempts to create sustainable competitive advantage. The natural resource-based view (NRBV) argues that there are three key strategic capabilities in the above area: pollution prevention, product stewardship, and sustainable development (Hart, 1995). Each of these has different driving forces, different key resources, and different possible sources of competitive advantage (Hart and Dowell, 2011).

Pollution prevention includes voluntary eco-efficient practices for reducing energy and waste. These practices require incremental or radical changes in existing processes and operations. Increases in a firm's resource productivity should be associated with lower costs and higher economic value of products or services (Orsato, 2006; Porter and van der Linde, 1995). Other tangible advantages include elimination of non-effective processes, an increase in savings due to a reduced amount of waste, and lower weighted average costs of capital. Nandy and Lodh (2012) find that the US banking sector incorporates firms' environment consciousness in their corporate lending decisions, and more eco-friendly companies get favorable loan contracts.

Product stewardship expands the scope of pollution prevention to the entire value chain of the firm's products systems. It includes a vast range of activities organizations use to monitor environmental performance and manage stakeholder relations. These activities include, but are not limited to, environmental impact assessment, supplier audit, operational compliance, and systems assessment (Bebbington and Gray, 2001). Ensuring that an organization's environmental management system is functioning as designed and that environmentally irresponsible inputs are eliminated from the supply chain can reduce the required inputs and compliance and liability costs (Fuller and Ottman, 2004). The effective management of relationships with key stakeholders on environmental issues should also contribute to the marketplace success of a given firm. Such management can enhance productivity and revenues by attracting and retaining employees (Rowley and Berman, 2000), attaining environmentally aware consumers (Reinhart, 1998; Elfenbein and McManus, 2010), creating better access to certain markets (Ambec and Lanoie, 2008), and gaining additional capital sources from sustainable-oriented investors and socially responsible investment (SRI) funds (Kempf and Osthoff, 2007).

Finally, a sustainable development strategy has a multidimensional perspective. It incorporates social, environmental, and economic issues simultaneously (Hillman and Keim, 2001). Sustainable development strategy must recognize the linkages between a reduction in environmental burden and social inconsistency and the economic benefits of a firm's activities from it. In order to turn sustainability into above-average profitability, the concept must become a matter of corporate management and core business strategy. Each company must be able to select those aspects of it that intersect with its particular business. All movement in that area should be undertaken carefully and present an opportunity to create shared value and substantial benefits for a business in a given period (Przychodzen and Przychodzen, 2013). Thus, this paper's objective is to examine the impact of the combination of the proper management of all major areas of firms' activities (i.e. financial, social, and environmental) at the same time on its stock market performance.

The relationship between the implementation of a sustainable development concept into corporate strategy and market valuation carries considerable potential importance for managers and investors. This is even more pronounced in times of the current turmoil in global financial markets. If corporate sustainability (CS) has wealth-protective effects that manifest during stock market busts, then it would make sustainable companies' stocks highly desirable investment assets. 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 (Modigliani and Miller, 1958). 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 (2007) show that in the presence of market imperfections, the 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 asset tastes (i.e. using a firm's environmental and social performance as a selection criterion for portfolio construction) account for substantial invested wealth. If so, investment decisions based on sustainable performance can provide additional gains to investors which do not base their decisions solely on monetary returns. Thus, the adoption of the sustainable development concept into core business strategy can influence stock market performance and its volatility.

The remainder of this study is structured as follows. Section 2 discusses existing evidence in the relation between various aspects of corporate sustainability and financial performance. Section 3 provides the theoretical framework upon which this empirical work is based and research hypotheses. Section 4 contains details of the methodological process that is implemented. Section 5 describes the data and sample selection procedure. Section 6 presents and discusses our empirical results. Section 7 draws conclusions and makes suggestions for future research.

## **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 proper balance between them and the company's relationship with various dimensions of profitability and shareholder gains.

Research has yielded mixed results regarding the link between corporate social responsibility (CSR) and financial performance. Margolis and Elfenbien (2008) studied the link between CSR and profitability in their survey of management literature. They found that there is little evidence stating that CSR negatively affects performance. However, the authors also point out there is only a very small positive correlation between corporate behavior and good financial results, which could be the result of reverse causality, in which a history of strong financial performance gives companies a better ability to contribute to society. Also,

Surroca, Tribó, and Waddock (2010) indicate there is no direct relationship between corporate responsibility and financial performance – an increase in performance in the former area is translated into an improvement in the latter only if the new firm's intangible resources are developed parallel to it. McWilliams and Siegel (2001) point out that adoption of CSR may or may not lead to improvement in corporate performance. This is because firms with CSR have higher costs and profits, while firms without it incur lower costs and profits. As a result, in both situations, firms earn the same rate of profit. Only in the case of disequilibrium, are firms keen to change their social responsibility approach in order to earn higher profits. Manescu (2011) provides evidence that human rights and product safety indicators might be value relevant, but are not incorporated efficiently into stock prices.

Scholtens and Zhou (2008) found that the different components of stakeholder relationships appear to be associated in a complex manner with shareholder performance. Renneboog et al. (2008) also suggested that existing studies do not unequivocally demonstrate that socially responsible investments (SRI) have a positive impact on shareholder value. Harrison et al. (2009) reported that nuanced understanding of stakeholders' needs increases stakeholders' willingness to cooperate with the firm, thus enhancing its growth prospects and competitiveness. The other aspect of CSR, corporate philanthropy, and its impact on sales growth were examined by Baruch et al. (2010). They determined that charitable contributions are significantly associated with future revenue, whereas reverse causality is marginally significant. Elfenbein and McManus (2010) suggested that consumers consistently express a willingness to favor socially responsible companies, and tend to pay more for products linked to charitable activities. De Luque et al. (2008) reported that CEOs who have socially responsible values were more effective leaders and that their firms, in turn, had superior financial performance.

In their study, Boyle et al. (1997) suggested that CSR activities may adversely affect financial results through their detrimental influence on future cash flows. Brammer et al. (2006) pointed to a negative link between corporate social performance and firm profitability. Interestingly, the authors found that considerable positive abnormal returns are available from holding a portfolio of the socially least desirable stocks. Kahn et al. (1997) also agreed that managers who entail corporate resources to social issues impose a direct cost on shareholders. Different results from the above-mentioned empirical studies show the difficulties in testing the relationship between company social performance and company financial performance. They can be attributed mainly to the wide range of CSR indicators applied and the methodological approaches.

Several empirical studies have been undertaken in the area of corporate environmental performance and profitability; of these, three major streams have been identified. The first points out a positive, the second points out a negative, and the third no significant link between different measures of pro-environmental activities and financial performance

Aragon-Correa et al. (2008) 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. (2005) used a firm's eco-efficiency indicator as a selection criterion, and constructed different portfolios with high- and low-ranked companies. They found a positive relationship between eco-efficiency and stock market performance. Graham et al. (2005) are also among the proponents of a win-win environmental management paradigm. They argued that accurate environmental disclosures reduce companies' information risk and the weighted average cost of capital. Oikonomou et al. (2012) reported that environmental concerns are positively and strongly related to systematic risk for S&P500 firms, with the opposite relation being not so unequivocal. Yin and Schmeidler (2009) provided evidence that companies which integrate

ISO 14001 standards into their daily operations report improvements in environmental and financial performance.

On the other hand, Jones et al. (2007) report that environmental disclosure is negatively associated with longer-term market valuation. Zaho (2008) noted 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 (2011) also provided evidence on the negative effects of voluntary corporate environmental initiatives on shareholder wealth. They suggested that companies announcing membership of environmental programs experience significantly negative abnormal stock returns. Jacobs et al. (2010) analyzed the effects of environmental performance on shareholder value. They found that the market is selective in reacting to announcements of environmental performance, with certain types of activities, such as voluntary emission reductions, valued negatively.

Cohen et al. (1997) showed that investors receive neither a premium nor a penalty for investing in environmental leaders, by constructing a high and a low polluter portfolio using nine different measures of environmental performance. Elsayed and Paton (2005) also found that environmental performance has a neutral impact on firm performance. Bauer et al. (2005) made similar findings, and indicated there is no evidence of significant differences in risk-adjusted returns between environmental and conventional investment funds. Based on the studies that have been undertaken to date, it is difficult to determine exactly what the relationship is between environmental performance and shareholder benefits. There seems to be no consensus in the relevant literature.

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 (Williams, 2007). This single corporate objective does not say anything about enhancing profits and shareholder gains in the long term. Managers may also over invest in responsible financial activities for their private benefit (i.e. to gain stakeholders' support and lower the probability of their replacement) at the expense of owners (Barnea and Rubin, 2010).

Sustainability in finance requires a multidimensional approach. This finding is reflected in Sophe's (2004, 2011) 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 (2003) suggested that sustainability in corporate finance is strictly connected to socially responsible investing (SRI). Benson and Humphrey (2008) showed that SRI fund flows are less sensitive to returns than conventional funds. The authors also found out that the flow is persistent, and SRI investors are more likely to invest in a fund they already own relative to conventional investors. The above results reflect the possible difficulties SRI investors may face in finding alternative investments that meet their non-financial goals. Renneboog et al. (2011) reported that social attributes of socially responsible mutual funds weaken the relation between money inflows and past positive returns. However, money flows into funds with environmental screens are much more sensitive to past positive returns than conventional fund flows are. The existing studies do not demonstrate unequivocally that socially responsible investments have a positive impact on shareholder value (Margolis and Walsh, 2003).

The multidimensional approach to socially responsible investment activities complicates financial modeling and results in unacceptable methodological difficulties. This is probably the reason why the linkages between corporate sustainable finance and widely

perceived performance have not yet captured the proper attention of contemporary academic literature.

In summary, the extant literature on the effect of corporate sustainability on shareholder wealth creation is sparse, problematic, and fragmented. It tends to treat the environmental, social, and financial aspects of CS separately, and existing studies are often not able to quantify them unequivocally, especially in the area of sustainable corporate finance. Our study seeks to address a number of the 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.

### **3. Theoretical Framework and Development of Hypotheses**

A number of conceptual arguments, mostly emanating from instrumental stakeholder theory (Donaldson and Preston, 1995; Jones, 1995), suggests that the effective management of relationships with key stakeholders contributes positively to corporate financial performance. It could be argued that a company which is consistently socially, environmentally, and financially responsible should, in the course of time, obtain tangible benefits from it 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; increased productivity through attracting and retaining good employees; more effective business and financial planning; enhanced revenues through attaining socially conscious consumers or access to financial capital from sustainability-oriented investors (Brammer and Millington, 2008; Etzion, 2007; Funk, 2003). However, in the absence of market imperfections, only systematic risk is priced and sustainability-oriented investors will not receive any additional returns from holding stocks of socially, environmentally, and financially responsible firms. Thus, rational investors hold well diversified portfolios and investment decisions based on sustainable

performance that are not totally based on anticipated payoffs is an apparent violation of this assumption (Fama and French, 2007).

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 (Heinkel et al., 2001; Fama and French, 2007; Mackey et al., 2007; Bouslah et al., 2013), incomplete information (Merton, 1987; Lee and Faff, 2009) and imperfect markets (Mao, 1971; Klapper and Love, 2004). These models assume differences in investor preferences. 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, proper management of social, environmental, and financial issues 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 core 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 that adopt sustainability into their core business strategies and decision-making processes earn higher than average stock market returns.

Sustainable development strategy that incorporates social, environmental, and economic issues at the same time can lead to reductions of the operational and financial risks a company faces. Suitable corporate sustainable performance may be considered as a sign of superior management skills and more effective business and financial planning (Waddock and Graves, 1997). 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, clean-up 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 (Fernando et al., 2010; Godfrey et al., 2009). A company's intensified internal efforts and responses to sustainability issues can also improve organizational information flow (Bansal et al., 2004) 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 (Christmann, 2000). All of these beneficial implications 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 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 (Campbell et al., 1999; Rosenberg et al. 2002; Giambona et al. 2009). 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 (Oikonomou et al., 2012). In turn, although investment in sustainable companies should not exhibit any anti-cyclical patterns within the

usual stock market cycle, the implementation of sustainability 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 that adopt sustainability into their core business strategies and decision-making processes are characterized by a higher than average resistance to a stock market crash.

## **4. Methodology**

### **4.1 Measuring social aspects of corporate sustainability**

The management literature has acknowledged social responsibility as an important corporate duty for a long time (Bowen, 1953; Quinn et al., 1987). 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” (Davis, 1973: 312-313). If so, the company’s CSR activities should be strategic and embrace a wide range of simultaneous activities in different areas (i.e., community, diversity, employee relations, product design, human rights, corporate governance), which support the competitive advantage of the firm (Carroll 1991; Husted, 2003).

Corporate social responsibility is connected to the management of a firm’s internal resources (including shareholders’ expectations), which simultaneously contributes to the welfare of other stakeholders. In order for it 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 (Hediger, 2010). 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 (Lee and Saen, 2012). 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:

- integration of social activities into core business strategy and decision-making process;
- 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);
- active engagement of independent third-party actors in the preparation and verification of CSR reports;
- gaining at least three social responsibility awards given by external institutions and organizations based on objective and publicly available criteria.

#### **4.2 Measuring environmental aspects of corporate sustainability**

In recent years, corporate sector views on better environmental management have changed radically. Nowadays the pro-environmental reorientation of a business is increasingly seen as a factor enhancing the creation of shareholder value and strengthening corporate competitiveness (Marcus et al., 1999; Porter and van der Linde, 1995). 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 of an effective pro-environmental strategy (Bansal and Clelland, 2004; Delmas, 2001).

Proactive environmental strategies require a complex interaction among different skills and resources (Ramus and Steger, 2000). They are intangible managerial innovations and routines requiring organizational commitment towards preserving the natural environment, and are not required by law (Hart, 1995). 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 (Darnall et al., 2010).

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 at least three of the following requirements since 2006:

- in the area of reporting: regularly issued own-designed environmental reports or reports meeting the requirements of Global Reporting Initiative (GRI) guidelines;
- in the area of procurement, manufacturing, distribution, research and development, and service: an environmental management system designed at the whim of the organization's management or developed in line with established voluntary guidelines of the International Organization for Standardization (ISO) 14001 standard;
- in the area of infrastructure: Leadership in Energy and Environmental Design (LEED) certification of any kind of at least one of its buildings;
- 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 as to which environmental obligations must be fulfilled.

### **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 (Lang et al., 1996). 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 (Wu, 2012).

Cui et al. (2007) 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 (Higgins, 1977):

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

where:

$p_m$  - profit margin (net income after tax/revenue),

$a_t$  - asset turnover (revenue/assets),

$f_l$  - financial leverage (assets/equity),

$e_{rr}$  - 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) which 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, 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 in-depth content analysis of annual CSR reports, environmental reports, public documents, corporate Web sites, and evaluations of corporate social responsibility from knowledgeable external sources.

From the original list of 350 companies, we first restricted our sample to 207, which comprised those firms that integrated their social activities into core business strategy and decision-making processes, had published profound CSR reports continuously since 2006, ensured active engagement of independent third-party actors into their preparation and verification, and had gained at least three social responsibility awards from external institutions. Secondly, we further reduced the number to 141 environmentally oriented entities in terms of procurement, manufacturing, distribution, marketing, service, research and development, public relations, and infrastructure. Finally, we reduced the sample to 65 firms that were able to achieve mutual compatibility between growth objectives and established operating and financial policies in the long run. In order to meet the criteria 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<sup>1</sup>. 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 with balanced financial, social, and environmental activities 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.

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<sup>1</sup> For the whole sample of 350 companies 171 under- and 179 overperformed 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.

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	19,4%	10	15,4%
Consumer Staples	26	7,4%	7	10,8%
Energy	15	4,3%	5	7,7%
Financials	111	31,7%	11	16,9%
Health Care	9	2,6%	0	0,0%
Industrials	53	15,1%	17	26,2%
Information Technology	24	6,9%	6	9,2%
Materials	25	7,1%	3	4,6%
Telecommunications Services	7	2,0%	2	3,1%
Utilities	12	3,4%	4	6,2%

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 core 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 overperforming their  $g^*$ ), while for the former it exceeded 8,4% (140 underperforming- and 145 overperforming their  $g^*$ ). Corporations that implemented CS had significantly higher Tobin’s q indicators (measured as total book value of assets minus book

**Table 2 Summary Statistics**

	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 (millions of GBP)	30944,286	1391,000	74285,653	3000,800	20591,025	1177,396	53694,628 <sup>***</sup>	1823,405 <sup>***</sup>
Rate of growth of revenue	0,194	0,077	0,087	0,066	0,229	0,083	-0,142 <sup>***</sup>	-0,017 <sup>***</sup>
Sustainable rate of growth of revenue	0,133	0,100	0,087	0,089	0,145	0,100	-0,057 <sup>*</sup>	-0,011
Retention ratio	0,747	0,736	0,618	0,595	0,779	0,797	-0,161 <sup>***</sup>	-0,202 <sup>***</sup>
Free cash flow (millions of GBP)	145943,238	37522,500	182068,288	57800,000	135867,900	33250,000	46200,388 <sup>*</sup>	24550,000 <sup>*</sup>
R&D to sales ratio	0,016	0,010	0,008	0,008	0,018	0,015	-0,011 <sup>***</sup>	-0,006 <sup>***</sup>
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 <sup>***</sup>	0,065 <sup>***</sup>
Concentration of shareholdings (fraction owned by the five largest shareholders)	0,272	0,099	0,118	0,069	0,306	0,117	-0,189 <sup>***</sup>	-0,047 <sup>***</sup>

<sup>\*</sup>, <sup>\*\*</sup>, and <sup>\*\*\*</sup> denote significance at the 10%, 5%, and 1% level, respectively

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.

## **6. Empirical results**

### **6.1. Corporate sustainability and returns**

In this subsection, we examine the relationship between the implementation of sustainability into corporate strategy and subsequent returns. This will enable us to empirically test the two competing views on ESG 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 ESG 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 excesses returns on the four factors from Carhart's (1997) model, given by the following equation:

$$R_{it} - R_{ft} = \alpha_{it} + \beta_{it} * RMRF_t + \chi_{it} * SMB_t + \delta * HML_t + \phi * UMD_t + \varepsilon_{it}, \quad (2)$$

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  $\varepsilon_{it}$  is the stochastic error. We interpret  $\alpha_{it}$  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.

**Table 3 Performance-Attribution Regressions for Sustainable Companies Portfolio (equally weighted)**

We estimate four-factor regressions (equation (2) 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 January 1, 2006 through December 31, 2012. Standard errors are reported in parentheses and significance at the ten-percent, five-percent and one-percent levels is indicated by \*, \*\* and \*\*\* respectively.

Panel A: Excess returns over market portfolio				
$\alpha$	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 <sup>2</sup> = 0,610535				
Panel B: Excess return over industry				
$\alpha$	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 <sup>2</sup> = 0,634672				

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 January 1, 2006 for value-weighted returns would have grown to \$1.48 by December 31, 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.

We then re-estimate the regressions for the four Carhart (1997) 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)**

We estimate four-factor regressions (equation (2) 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 January 1, 2006 through December 31, 2012. Standard errors are reported in parentheses and significance at the ten-percent, five-percent and one-percent levels is indicated by \*, \*\* and \*\*\* respectively.

Panel A: Excess returns over market portfolio				
$\alpha$	RMRF	SMB	HML	UMD
0,0029*** (0,0004)	-0,7285*** (0,0929)	0,8674*** (0,1337)	-0,2811** (0,1393)	0,1035 (0,0787)
Adjusted R <sup>2</sup> = 0,571642				
Panel B: Excess return over industry				
$\alpha$	RMRF	SMB	HML	UMD
0,0025*** (0,0010)	-0,2423*** (0,0714)	0,7798*** (0,1603)	0,0116*** (0,0038)	0,1214* (0,066)
Adjusted R <sup>2</sup> = 0,583457				

All the results of the above subsection are statistically and economically significant, confirming our hypothesis that companies that adopt sustainability into their core 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 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**

	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

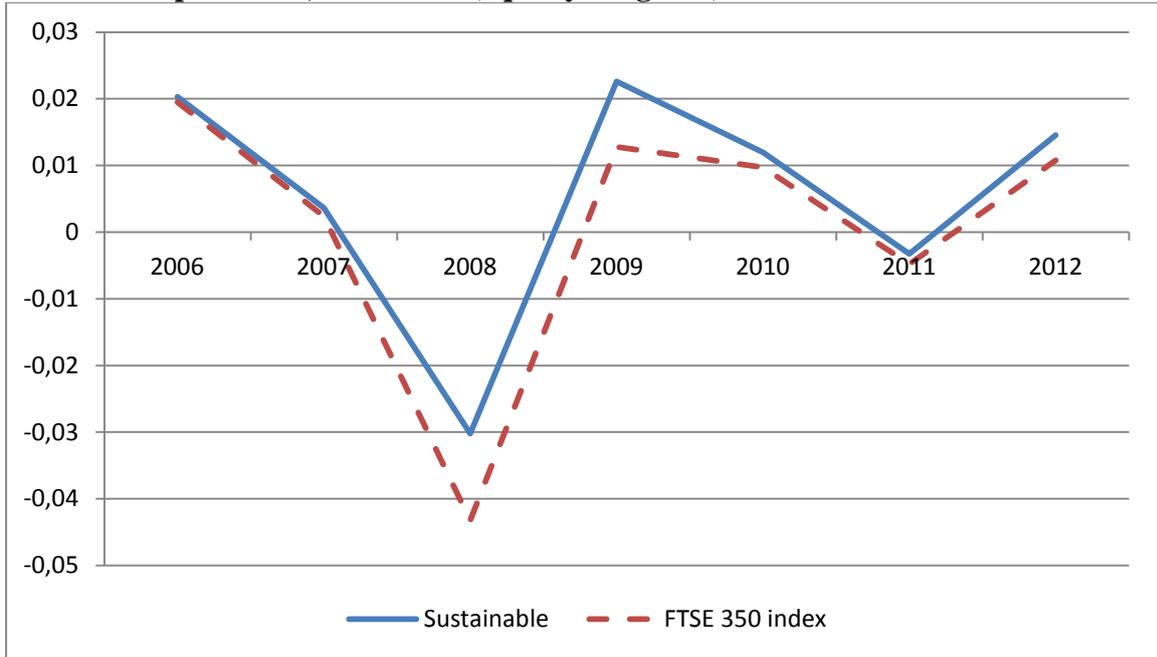
The results reveal a substantial and negative relationship between corporate sustainability and stock return volatility. Several values of the distributions of annual standard deviation from monthly stock returns for the entire stock market portfolio are often two times, or more, greater than those estimated 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, which was lower for the sustainable companies' portfolio. This indicates that there were much fewer outliers among the firms with balanced financial, social, and environmental activities. 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

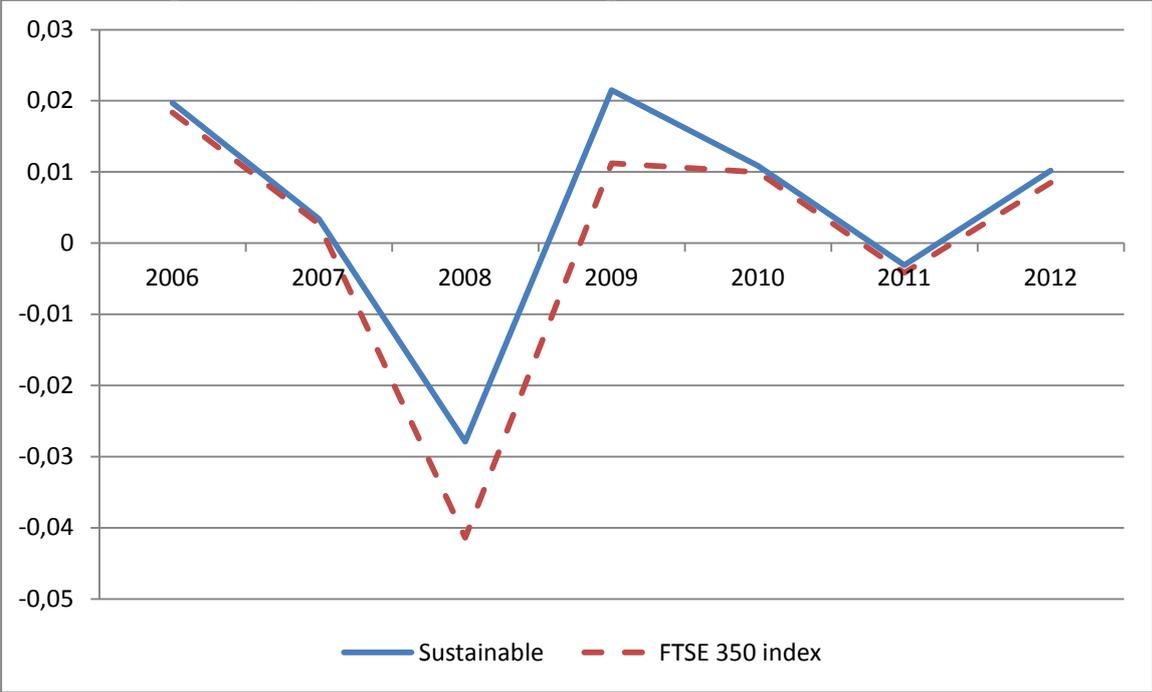
Measuring features of stock market cycles for sustainable corporations is of potential interest for both investors and managers. If the adoption of sustainability into core business strategy and decision-making process is characterized by higher than average resistance to general swings in stock market 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 January 1, 2006 to December 31, 2012. We do so to assess the possible importance of corporate sustainability as a factor diminishing investment risk in times of economic and financial turbulence. The average monthly returns for both portfolios for the years during the sample period are illustrated in Figure 1 and Figure 2.

**Figure 1 Average Monthly Returns for Sustainable Corporations and FTSE 350 constituents portfolios, 2006-2012 (equally weighted)**



**Figure 2 Average Monthly Returns for Sustainable Corporations and FTSE 350 constituents portfolios, 2006-2012 (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 current 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. 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 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 (Gómez-Bezares and Gómez-Bezares, 2012):

$$PIRR_t = \mu_t - \left[ \frac{(\mu_{mt} - r_{ft})}{\sigma_{mt}} \right] * \sigma_t, \quad (3)$$

where:  $\mu_t$  is the average monthly return on a given portfolio in year  $t$ ,  $\mu_{mt}$  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  $t$ ,  $\sigma_{mt}$  is the standard deviation of the rate of return on the market portfolio for year  $t$ , and  $\sigma_t$  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<sup>2</sup> portfolios for the equally weighted (Panel A) and value-weighted (Panel B) data over the years 2006-2012. 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 since the beginning of the global financial meltdown.

**Table 6 Annual Penalized Internal Rate of Return (PIRR) differences between Sustainable Companies and FTSE 350 portfolio, 2006-2012**

Panel A: Equally weighted portfolio							
2006	2007	2008	2009	2010	2011	2012	Average
0,0215	0,0391	0,0402	0,0399	0,0695	0,0648	0,0546	0,0471
Panel B: Value weighted portfolio							
2006	2007	2008	2009	2010	2011	2012	Average
0,0206	0,0308	0,0344	0,0366	0,0482	0,0540	0,0498	0,0392

## 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

<sup>2</sup> The  $PIRR$  for the FTSE 350 portfolio is the monthly return on the risk-free asset, as can be obtained from formula (3).

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, 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 core 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 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.

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.

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.

## 8. References

- Ambec, S., Lanoie, P., 2008. Does it pay to be green? A systematic overview, *Academy of Management Perspectives*, 22(4), 45-62.
- Aragon-Correa, A. J., Hurtado-Torres, N., Sharma, S., Garcia-Morales V. J., 2008. Environmental strategy and performance in small firms: A resource-based perspective, *Journal of Environmental Management* 86, 88-103.
- Bansal, P., Clelland, I., 2004. Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, 47(1), 93-103.
- Baruch, L., Petrovits, C., and Radhakrishnan, S., 2010. Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strategic Management Journal*, 31 (2), 182-200.
- Barnea, A., Rubin, A., 2010. Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics* 97, 71-86.
- Bauer, R., Koedijk, K., Otten, R., 2005. International Evidence on Ethical Mutual Fund Performance and Investment Style, *Journal of Banking and Finance* 29, 1751-1767.
- Bebbington, J., Gray, R., 2001. An Account of Sustainability: Failure, Success and a Reconceptualization, *Critical Perspectives on Accounting*, Vol. 12, No. 5, 557-588.
- Benson, K. L., Humphrey, J. E., 2008. Socially responsible investment funds: Investor reaction to current and past returns, *Journal of Banking and Finance* Vol. 32, No. 9, 1850-1859.
- Bouslah, K., Kryzanowski, L., M'Zali, B., 2013. The impact of the dimensions of social performance on firm risk, *Journal of Banking & Finance* 37, 1258-1273.
- Bowen, H., 1953. *Social responsibility of the businessman*, New York, Harper and Row.

- Boyle, E.J., Higgins, M.M., and Rhee, S.G., 1997. Stock market reaction to ethical initiatives of defense contractors: theory and evidence. *Critical perspectives in accounting*, 8 (6), 541-561.
- Brammer, S., Brooks, C., Pavelin, S., 2006. Corporate Social Performance and Stock Returns: UK Evidence from Disaggregate Measures, *Financial Management* 35, 97-116.
- Brammer, S., Millington, A., 2008. Does it pay to be different? An analysis of the relationship between corporate social and financial performance. *Strategic Management Journal*, 29, 1325-1343.
- Campbell, J.Y. Cochrane, J.H., 1999. By Force of Habit: A Consumption-Based Explanation of Aggregate Stock Market Behavior, *Journal of Political Economy* 107, 205-251.
- Carroll, A.B., 1991. The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders, *Business Horizons*, Vol. 34, No. 4, 39-48.
- Christmann, P., 2000. Effects of best practices of environmental management on cost advantage: the role of complementary assets. *Academy of Management Journal* 43, 663-680.
- Cohen, M. A., Fenn, S. A., Konar, S., 1997. *Environmental and financial performance: Are they related?* (Working paper). Nashville, TN: Vanderbilt University Press.
- Cui, X.G., Wang, L.Y., Xu, H., 2007. High-speed growth, financial crisis and risk forecasting. *Accounting Research* Vol. 12, No. 1, 55-62.
- Darnall, N., Henriques, I., Sadowsky, P., 2010. Adopting Proactive Environmental Strategy: The Influence of Stakeholders and Firm Size, *Journal of Management Studies*, Vol. 47, No. 6, 1072-1093.
- Davis, K., 1973. The case for and against business assumption of social responsibilities, *Academy of Management Journal*, Vol. 16, No. 2, 312-322.

- de Luque, S., Washburn, M., Waldman, D. A., House, R. J., 2008. Unrequited profit: How stakeholder and economic values relate to subordinates' perceptions of leadership and firm performance. *Administrative Science Quarterly*, 53, 626-654.
- Delmas, M., 2001. Stakeholders and Competitive Advantage: The Case of ISO 14001, *Production and Operations Management*, Vol. 10, No. 3, 343-58.
- Derwall, J., Guenster, N., Bauer, R., Koedijk, K., 2005. The eco-efficiency premium puzzle. *Financial Analysts Journal*, 61(2), 51-63.
- Elfenbein, D., McManus, B., 2010. A greater price for a greater good? Evidence that consumers pay more for charity-linked products. *American economic journal: economic policy*, 2(2), 28-60.
- Elsayed, K., Paton, D., 2005. The impact of environmental performance on firm performance: Static and dynamic panel data evidence. *Structural Change and Economic Dynamics*, 16, 395-412.
- European Social Investment Forum (Eurosif), European SRI Study 2012. <http://www.eurosif.org/>.
- Etzion, D., 2007. Research on Organizations and the Natural Environment, 1992-Present: A Review, *Journal of Management*, Vol. 33 No. 4, 637-664.
- Fama, E.F., French, K.R., 2007. Disagreement, tastes and asset prices. *Journal of Financial Economics* 83, 667-689.
- Fernando, C., Sharfman, M., and Uysal, V., 2010. Does greenness matter? The effect of corporate environmental performance on ownership structure, analyst coverage and firm value. Working paper. University of Oklahoma.
- Fisher-Vanden, K. and Thorburn, K., 2011. Voluntary Corporate Environmental Initiatives and Shareholder Wealth. *Journal of Environmental Economics and Management*, Vol. 62, No. 3, 430-445.

- Fuller, D.A., Ottman, J.A., 2004. Moderating unintended pollution: the role of sustainable product design, *Journal of Business Research*, Vol. 57, No. 11, 1231–1238.
- Funk, K., 2003. Sustainability and performance. *MIT Sloan Management Review*, 44(2), 65-70.
- Giambona, E., Golec, J., 2009. Mutual fund volatility timing and management fees, *Journal of Banking & Finance*, Vol. 33, No. 4, 589–599.
- Global Sustainable Investment Alliance (GSIA), 2012 *Global Sustainable Investment Review*.  
<http://www.gsi-alliance.org/>
- Godfrey, P.C., Merrill, C.B., Hansen, J.M., 2009. The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. *Strategic Management Journal* 30, 425–445.
- Gómez-Bezares, F., Gómez-Bezares, F.R., 2012. Classic performance indexes revisited: axiomatic and applications. *Applied Economics Letters*, Vol. 19, No. 5, 467-470.
- Graham, J. R., Harvey, C. R., Rajgopal, S., 2005. The Economic Implications of Corporate Financial Reporting. *Journal of Accounting and Economics*, 40: 3–73.
- Hediger, W., 2010. Welfare and capital-theoretic foundations of corporate social responsibility and corporate sustainability, *The Journal of Socio-Economics*, Vol. 39, No. 4, 518–526.
- Harrison, J. S., Bosse, D. A., Phillips, R. A., 2010. Managing for Stakeholders, Stakeholder Utility Functions, and Competitive Advantage. *Strategic Management Journal*, 31, 58–74.
- Hart, S. L., 1995. A natural-resource-based view of the firm. *Academy of Management Review*, 20, 986-1014.
- Hart, S. L., Dowell, G., 2011. A Natural-Resource-Based View of the Firm: Fifteen Years After, *Journal of Management*, Vol. 37, No. 5, 1464-1479.

- Heinkel, R., Kraus, A., Zechner, J., 2001. The effect of green investment on corporate behavior. *Journal of Financial and Quantitative Analysis* 36, 431–449.
- Higgins, R., 1977. How much growth can a firm afford? *Financial management*, Vol. 6, No. 3, 7–16.
- Hillman, A. J., Keim, G. D., 2001. Shareholder value, stakeholder management, and social issues: What's the bottom line?, *Strategic Management Journal*, 22, 125-129.
- Husted, B.W., 2003. Governance Choices for Corporate Social Responsibility: to Contribute, Collaborate or Internalize?, *Long Range Planning*, Vol.36, No. 5, 481-498.
- Jacobs, B., Singhal V., R., Subramanian, R., 2010. An empirical investigation of environmental performance and the market value of the firm, *Journal of Operations Management*, Vol. 28, No. 5, 430–441.
- Jones, S., Frost, G., Loftus, J., Van Der Laan, S., 2007. An Empirical Investigation of the Market Returns and Financial Performance of Entities Engaged in Sustainability Reporting, *Australian Accounting Review*, 17(1), 78–87.
- Johnsen, B., 2003. Socially Responsible Investing: A Critical Appraisal, *Journal of Business Ethics*, Vol. 43, No.3, 219-222.
- Kahn, N.R., Lekander, C., and Leimkuhler, T., 1997. Just say no? The investment implications of tobacco divestiture. *The journal of investing*, 6 (4), 62-70.
- Kempf, A., Osthoff, P., 2007. The Effect of Socially Responsible Investing on Portfolio Performance, *European Financial Management*, Vol. 13, No. 5, 908–922.
- Klapper, L. F., Love, I., 2004. Corporate governance, investor protection, and performance in emerging markets, *Journal of Corporate Finance*, Volume 10, Issue 5, 703-728
- KPMG, International Survey of Corporate Responsibility Reporting 2011.  
<http://www.kpmg.com/>.

- Lacy, P., Cooper, T., Hayward, R., Neuberger, L., 2010. A New Era of Sustainability – UN Global Compact-Accenture CEO Study 2010.
- Lang, L., Ofek, E., Stulz, R.M., 1996. Leverage, investment, and firm growth. *Journal of Financial Economics* Vol. 40, No. 1, 3–29.
- Lee, D.D., Faff, R.W., 2009. Corporate sustainability performance and idiosyncratic risk: a global perspective. *The Financial Review* 44, 213–237.
- Lee, K.H., Saen, R.F., 2012. Measuring corporate sustainability management: A data envelopment analysis approach, *International Journal of Production Economics*, Vol. 140, No. 1, 219-226.
- Mackey, A., Mackey, T.B., Barney, J.B., 2007. Corporate social responsibility and firm performance: investor preferences and corporate strategies. *Academy of Management Review* 32, 817–835.
- Manescu, C., 2011. Stock returns in relation to environmental, social and governance performance: mispricing or compensation for risk? *Sustainable development*, 19 (2), 95-118.
- Mao, J.C.T., 1971. Security pricing in an imperfect capital market. *Journal of Financial and Quantitative Analysis* 6, 1105–1116.
- Marcus, A., Nichols, M., Tyagi, R., 1999. On the Effects of Downstream Entry, *Management Science*, Vol. 45, No. 1, 59-73.
- Margolis, J., Elfenbien, H., 2008. Do well by doing good: Don't count on it, *Harvard Business Review*, Vol. 86, No. 1, 19-20.
- McWilliams, A., Siegel, D., 2001. Corporate Social Responsibility: A theory of the firm perspective, *Academy of Management Review*, Vol. 26, No. 1, 117-127.
- Merton, R.C., 1987. A simple model of capital market equilibrium with incomplete information. *Journal of Finance* 42, 483–510.

- Nandy, M., Lodh, S., 2012. Do banks value the eco-friendliness of firms in their corporate lending decision? Some empirical evidence, *International Review of Financial Analysis*, Vol.25, 83–93.
- Oikonomou, I., Brooks, C., Pavelin, S., 2012. The impact of corporate social performance on financial risk and utility: a longitudinal analysis. *Financial Management* 41, 483–515.
- Orsato, R., 2006. Competitive environmental strategies: When does it pay to be green? *California Management Review*, 48(2), 127-143.
- Porter, M. E., van der Linde, C., 1995. Green and competitive: Ending the stalemate. *Harvard Business Review*, 73(5): 120-134.
- Przychodzen, J., Przychodzen W., 2013. Corporate sustainability and shareholder wealth, *Journal of Environmental Planning and Management*, Vol. 56, No. 4: 474-493.
- Quinn, J., Mintzberg, H., James, R., 1987. *The strategy process*, Prentice-Hall, Englewood Cliffs, N.J.
- Ramus, C.A., Steger, U., 2000. The roles of supervisory support behaviors and environmental policy in employee “ecoinitiative” at leading-edge European companies. *Academy of Management Journal* Vol. 43, No. 4, 605-626.
- Reinhardt, F.L., 1998. Environmental product differentiation: implications for corporate strategy. *California management review*, 40 (4), 43-73.
- Rosenberg, J.V., Engle, R.F., 2002. Empirical pricing kernels - *Journal of Financial Economics*, Volume 64, No. 3, 341–372.
- Renneboog, L., Ter Horst, J., and Zang, C., 2008. Socially responsible investments: institutional aspects, performance, and investor behavior. *Journal of banking and finance*, 32, 1723-1742.

- Renneboog, L., Ter Horst, J., and Zang, C., 2011. Is ethical money financially smart? Nonfinancial attributes and money flows of socially responsible investment funds, *Journal of Financial Intermediation*, Vol. 20, No. 4, 562–588.
- Rowley, T., Berman, S., 2000. A brand new brand of corporate social performance, *Business and Society*, 39, 397-418.
- Scholtens, B. and Zhou, Y., 2008. Stakeholder relations and financial performance. *Sustainable development*, 16 (3), 213-232.
- Surroca, J., Tribó, J. A., Waddock, S., 2010. Corporate responsibility and financial performance: the role of intangible resources, *Strategic Management Journal*, Vol.31, No. 5, 463- 490.
- Soppe, A., 2004. Sustainable Corporate Finance, *Journal of Business Ethics*, Vol. 53, No. 1-2, 213-224.
- Soppe, A., 2011. Sustainable Finance as a Connection Between Corporate Social Responsibility and Social Responsible Investing, *Indian Management Research Journal*, Vol. 1, No. 3, 13-23.
- United Nations Environmental Program (UNEP), 2012. Principles for Responsible Investments. <http://www.unpri.org/>.
- US Social Investment Forum (Ussif), 2012 Report on Sustainable and Responsible Investing Trends in the United States. <http://www.ussif.org/>.
- Yin, H., and Schmeidler, P., 2009. Why do standardized ISO 14001 environmental management systems lead to heterogeneous environmental outcomes? *Business strategy and the environment*, 18, 469-486.
- Waddock, S.A., Graves, S.B., 1997. The Corporate Social Performance–Financial Performance Link, *Strategic Management Journal* 18, 303-319.

- Williams, G., 2007. Some Determinants of the Socially Responsible Investment Decision: A Cross-Country Study, *Journal of Behavioral Finance*, Vol. 8, No. 1, 43-57.
- Wu, X., 2012. Corporate governance and audit fees: Evidence from companies listed on the Shanghai Stock Exchange, *China Journal of Accounting Research*, Vol. 5, No. 4, 321–342.
- Zaho, J., 2008. The effect of the ISO 14001 environmental management system on corporate financial performance. *International journal of business excellence*, 1 (1-2), 210-230.