

Do Socially Responsible Firms Pay Their Right Part of Taxes? Evidence from the European Union

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This study extends the literature by examining the relationship between the corporate social responsibility (CSR) and tax avoidance. Based on a sample of 614 companies from 15 European-Union countries over the period of 2002-2015, we find that, on average, socially responsible firms are more involved in tax-avoidance activities than the less responsible ones. In addition, we investigate how different CSR activities affect corporate tax avoidance. More interestingly, our results show that a strong activity in the economic, environmental, social and corporate-governance dimensions is associated with a high level of tax avoidance, indicating that CSR and tax avoidance are complementary strategies.

INTRODUCTION

Political-economic authorities are concerned about tax payment as it is the main source of state finance, and as it is an interface directly affecting the economic survival and life quality of billions of people around the world. The availability of tax revenues is crucial for the governments to function, and to ensure a redistribution of wealth to alleviate poverty, and provide a variety of public goods covering education, health care, security, pensions, public transport, potable water, and other services promoting social cohesion and human development. Thus, the payment of tax is considered as part of the corporate social responsibility (Mueller and Kolk, 2015). However, some companies document positive CSR activities but have, at the same time, a higher likelihood of engaging in tax avoidance (Davis et al., 2016).

Tax avoidance has been subject to much attention in recent years. Many scandals have affected large companies identifying themselves as leaders on issues of the CSR. There was a great media coverage of cases, such as the 2015's Swiss Leaks, concerning the secrets of Swiss banks, and 2014's Lux Leaks revealing tax evasion by more than 300 multinationals established in Luxembourg. There was also Panama Papers in 2016 disclosing a tax evasion on a global scale through the creation of thousands of offshore entities in tax havens. Tax avoidance has a significant impact on public revenues, and thus on the economies, and life quality of citizens. For example, according to the European Commission, tax avoidance practiced by multinationals is a shortfall of 1.000 billion euros per year for all EU member

states. Internationally, according to the Tax Justice Network, between 16.400 and 25.000 billion euros pass through tax havens. This represents a loss of tax revenue of €189 billion a year for developing countries.

Indeed, the impact of tax avoidance is exposed by the Organization for Economic Cooperation and Development (OECD), investigative journalists, and other stakeholders who encourage companies to inject their tax practices into CSR. A debate is currently underway since the research field of the CSR-tax avoidance relationship is unclear. There are mixed results on the importance of tax payments in the context of CSR (Dowling, 2014; Hoi et al., 2013; Huseynov and Klamm, 2012; Landry et al., 2013; Lanis and Richardson, 2012; Davis et al., 2016), and mixed theories explaining the relationship between CSR and tax avoidance (Friedman, 1970; Carroll, 1979; Freeman, 1994; Donaldson and Preston, 1995). These contradictions are the subject of debate both in the academic and professional circles. Two opposing views may explain the effect of CSR on tax-avoidance practices. According to the first view, Sikka (2010) considers that tax avoidance is an unacceptable activity in CSR because it has negative consequences on the economic and social development. In line with this view, Lanis and Richardson (2012) and Hoi and al. (2013) find a negative association between CSR-disclosure levels and tax aggressiveness. Furthermore, engaging in the two activities simultaneously is like an “organized hypocrisy” (Sikka, 2010). Conversely, the second view suggests that companies do not consider paying taxes as a part of their social responsibility. They argue that reducing their tax burden allows them to contribute with subsequent effects to improve social welfare through investment, innovation, job creation and overall economic development (Davis et al., 2016). CSR is then, positively associated with tax avoidance.

This diversity of perspectives and the current worldwide tax avoidance context motivates our research. The objective of the study is to examine the relationship between CSR and tax avoidance in the European Union (EU) context. The question is whether socially responsible firms are more or less likely to engage in tax avoidance. More specifically, we explain how CSR activities are related to tax avoidance. These activities are measured by four dimensions, including economic, environmental, social and corporate-governance performance. Several studies link CSR dimensions individually to tax avoidance (Laguir et al., 2015; Lanis and Richardson, 2012). The examination of the effect of CSR dimensions separately may explain more about tax-avoidance practices and tax decisions of a company (Laguir et al., 2015; Lanis and Richardson, 2012).

Our study contributes to the literature in several ways. First, the study sheds light on whether CSR is positively or negatively related to tax avoidance by relying on a more comprehensive sample covering 15 EU countries. To the authors’ knowledge, this paper is one of the very few studies addressing this issue in an international context, in particular in the EU context. Second, it contributes to the ongoing debate on corporate-tax avoidance on the international scene by empirically testing whether corporate discourses and actions are aligned. Third, this study provides useful insights into the types of companies that tax-audit efforts could target. This issue is particularly crucial as most countries face tight budgets and pressures in order to prompt tax authorities to generate national revenues.

We use a sample of 614 firms listed on the stock exchanges of 15 EU countries from 2002 to 2015. Based on Tobit regression and GLS regression models, clustered at the firm level, we find that firms engaging in corporate-tax avoidance to reduce their tax burden are more socially responsible. Moreover, testing the effect of the individual CSR dimensions on tax avoidance, we find that managerial actions designed to optimize the shareholders’ cash flows can generate net benefits for shareholders while meeting the needs and wants of stakeholders. In addition, these findings are more pronounced for the subgroup of high CSR- index firms.

The remainder of the paper is organized as follows. The next section presents prior literature, and develops our research hypotheses. The third section describes the research design. The fourth section reports the empirical results, and the fifth section provides the additional tests. The sixth section concludes.

PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

The Relation Between Tax Avoidance and CSR

Stephenson and Vracheva (2015) analyze thirty-seven articles from the existing literature on tax avoidance and CSR. They highlight the fact that tax avoidance is an integral part of CSR. The debate is to know whether the role of the company is to maximize shareholders' value, to ensure responsibility for society, or both. We group prior studies according to their results, and present them in the following subsections.

Studies Finding a Negative Relationship Between CSR and Tax Avoidance

At the country level, Lanis and Richardson (2016) analyze a sample of 697 companies over the period of 2003-2009, and find that the presence of outsiders on the board of directors increases the negative association between CSR and tax aggressiveness. Similarly, results in Lanis and Richardson (2011) suggest that the principles of CSR could reduce a company's fiscal aggressiveness through the board of directors because external directors are more likely to respond to the needs of society. With reference to a sample of 434 US firms over the 2003-2009 period, Lanis and Richardson (2015) suggest that tax avoidance decreases with a company's level of CSR. In a study focusing on companies' socially irresponsible activities, Hoi et al. (2013) use a sample of 2,620 US firms from 2003 to 2009, and find that there is a greater likelihood of engaging in Tax-shelter activities and discretionary book-tax difference. They, therefore, suggest that companies engaging in excessively irresponsible activities are more aggressive in avoiding taxes. These results reinforce the idea that CSR could be seen as a facet of the corporate culture affecting the decision to avoid taxes. Moreover, Zeng (2016) analyzes a sample of Canadian companies in the S&P / TSX 60 index over a five-year period (2005-2009) to examine the relationship between CSR, fiscal aggressiveness and the market value. The study shows that paying more taxes can increase the market value of the company by contributing to a better CSR ranking. Indeed, a better reputation for CSR will improve the market value of companies. Zeng (2016) suggests that socially-conscious consumers are willing to pay more for products from socially responsible companies. In addition, the social reputation is a key attribute of a successful business, and the commitment to tax payment can improve it. In fact, Dyreng et al. (2016) note that the public control of tax avoidance can be costly for a company if it involves fiscal-audit measures, shareholders' penalties, boycotts by customers, or political reactions.

At the international level, Mueller and Kolk (2015) explore the question to see whether the Indian subsidiaries of foreign multinationals pay less tax than the local Indian multinationals. A comparison of their tax rates allows conclusions about the use of tax-avoidance techniques by taking advantage of multinationality. For example, multinationals may use internal transfer pricing to adjust the income of subsidiaries in order to minimize taxes where the tax rate by the host country is the highest. They find that local Indian multinationals pay considerably fewer taxes than the Indian subsidiaries of foreign multinationals, indicating that these Indian multinationals engage in tax-avoidance activities. They also examine whether the payment of taxes differs between subsidiaries of foreign multinationals with a high reputation in CSR, and those with a low reputation in CSR; and they find that those paying the highest taxes are the subsidiaries of the most socially-responsible foreign multinationals.

This literature shows that tax-avoidance practices are costly both for the company and for society. Tax avoidance is seen as unethical and irresponsible towards the public, society and other stakeholders. From this point of view, tax avoidance is negatively associated with CSR since it is incompatible (Amidu et al., 2016).

Studies Finding a Positive Relationship Between CSR and Tax Avoidance

Landry et al.,(2013) conclude that there is a positive relationship between CSR activities and tax avoidance in the Canadian context. They also argue that family firms are less aggressive than non-family ones, underlining the fact that the ownership structure moderates this relationship. Indeed, the study suggests a misalignment between the disclosures and the actions of a company. Davis and al. (2016)

study the relationship between CSR and effective tax rates for US firms, and provide new findings that socially responsible firms avoid more taxes, suggesting that CSR and taxes act as substitutes rather than complements. The results of the study suggest that, at least for US public corporations, tax payments are not considered as a significant socially-responsible activity by an influential subset of stakeholders. They interpret their findings as evidence that socially responsible corporations place shareholder interests ahead of those of other stakeholders, and suggest that companies can use CSR as a counterweight to aggressive tax avoidance so as to maintain an image of accountability, and avoid reputational costs associated with tax avoidance. Moreover, Preuss (2010) compares the codes of conduct of Offshore Finance Centres (OFCs) and US firms. He finds that companies located in tax havens do not have lower codes of conduct, indicating that these companies are not less socially responsible than US firms. Consistent with these findings, Col and Patel (2016) assert that companies are strengthening their CSR practices within two years of the first establishment of subsidiary in tax havens abroad. In addition, Huseynov and Klamm (2012) provide evidence that in some cases, it may be socially acceptable to reduce tax payments. As declining tax payments increase profitability, companies are better placed to take part in costly CSR activities (Huseynov and Klamm, 2012).

A potential explanation for these mixed results could be certain limitations in the studies whether it is at the level of the variation of the measures of CSR or the measures of tax avoidance, which is difficult to grasp, or the difference between the contexts studied and the generalization from the samples examined. These studies focus on firm-level data from countries such as Australia (Lanis and Richardson, 2012), Canada (Landry et al., 2013 and Zeng, 2016), the United States (e.g., Hoi et al., 2013; Lanis and Richardson, 2015), France (Laguir et al., 2015) and India (Muller and Kolk, 2012). A few studies focused on an international sample and members of the EU have been largely unexplored. However, Jones et al., (2017) use a large sample covering more than 30 countries. They find a significant negative relationship between CSR levels and tax aggressiveness on the Asian sub-sample, but no relation on the North American, European and UK sub-samples.

Both activities have significant costs and benefits for the company, the shareholders and the society as a whole. Some CSR theories developed in the literature suggest that companies have social obligations that go beyond maximizing shareholders' wealth (Carroll, 1979; Freeman, 1994; Garriga and Mele, 2004). According to this theory, companies that do value the CSR will dedicate resources to socially responsible activities that do not maximize inevitably the economic performance. However, based on Friedmann's theory (1970), "there is one and only one social responsibility of business to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud.". According to this logic, spending resources for CSR activities would be to assume the role of the political power supposed to collect taxes and redistribute wealth for the welfare of the society. Achieving social welfare is the role of governments, not the role of businesses. This approach advocates that the sole responsibility of a company is to increase the benefit of its shareholders, implying that managers must engage in tax-avoidance practices as long as it is profitable, and any activity reducing shareholders' wealth is symptomatic of an agency problem (Friedman, 1970; Moser and Martin, 2012). Thus, all CSR activities are considered as constraints a firm has to integrate into its financial-objective function, and these activities should ultimately enrich shareholders (Friedman, 1970). Therefore, from a pure economic point of view, tax avoidance and CSR are complementary, and any expense for CSR would be offset by a decrease in the tax paid. As a result, and in line with the assumptions of shareholder theory, we expect a positive relationship between CSR and tax avoidance.

H1: CSR is positively associated with tax avoidance.

CSR Activities and Tax Avoidance

According to Laguiret et al., (2015), Lanis and Richardson (2012), and Johnson and Greening (1999), aggregating CSR dimensions into one index is inappropriate, and some of interpretable information can

be lost. Thus, we extend the studies of Lanis and Richardson (2012), and Laguiret et al., (2015) to determine which activities of CSR are associated with the probability that a company avoids its tax liabilities

Martin et al., (2009) advocates that in an economy advancing shareholders' interests, and concentrating on achieving a higher-value creation for them, the result could be failures in the financial markets like many of companies involved (e.g. Enron, WorldCom, Tyco and others) as the consumer confidence constitutes the economic performance index of CSR (see Appendix 1). The study of Hardeck and Hertl (2014) discusses the role of consumers in determining the relationship between tax avoidance and CSR in the German context. They find that consumers have harmful effects on companies adopting tax-aggressive strategies through the limited purchase intention and reputation damage. More specifically, "consumers are not willing to pay a price premium for products sold by responsible tax-planning companies, but rather punish aggressive tax-planning companies through a slightly lower willingness to pay" (Hardeck and Hertl, 2014, p. 309). Thus, consumers have a negative attitude towards tax avoidance, and react more strongly to media coverage about the tax strategies of companies.

In line with the finding of Laguiret et al., (2015) asserting that the economic dimension of CSR affects positively the level of tax avoidance, Brealey et al., (2007), and Brigham and Houston (2000) state that the primary goal of the firm is to maximize the shareholders' wealth through increasing the current value of the company's shares. Besides, Huseynov and Klamm (2012) argue that in some cases, it may be socially acceptable to reduce tax payments since reducing tax burden may increase the company's value (Desai and Dharmapala, 2009; Wilson, 2009), decrease the cost of capital (Goh et al, 2016), and increase shareholders' wealth (Hanlon and Heitzman, 2010). Overall, it is reasonable to expect a significant relation between the CSR-economic score and tax avoidance. Hence, the first research sub hypothesis is:

H1a: The level of the CSR-economic performance is positively associated with tax avoidance.

As regards to the relationship between the CSR-governance dimension and tax avoidance, there is again no consensus among researchers. The primary role of the board of directors is to represent shareholders and manage the companies' decisions to their best interests. In this sense, Wilson (2009) argues that firms engaging in tax-shelter activities with a good corporate governance show a higher positive abnormal return than firms with poor corporate governance. In line with this hypothesis, Huseynov and Klamm (2012) find that the better the corporate governance is, the higher the likelihood of tax avoidance is. Furthermore, Armstrong et al., (2015) report that firms with more financially sophisticated and independent boards encourage managers to engage in more tax avoidance. Besides, Desai and Dharmapala (2006) argue that the level of tax avoidance decreases when the managerial diversion increases.

From the point of view that governance is primarily a means by which for-profit companies deal with economic concerns related to shareholders, customers and suppliers, we could expect a positive relationship with tax avoidance. At the same time, corporate governance is secondarily a means by which companies manage the environmental and social impacts of their business and builds credibility with external stakeholders. The social and environmental function is, however, a recent concern discussed in the boards of directors, and ultimately integrated to protect shareholders. As pointed out by Hoi et al. (2013), the CSR could increase shareholders' value because it allows them to be protected against the negative effects of tax aggressiveness. Thus, we empirically test the following research sub-hypothesis:

H1b: The level of the CSR-governance performance is positively associated with tax avoidance

The CSR-social performance component is intriguing because it suggests that companies are motivated to make decisions that are not always aimed at maximizing shareholders' wealth. Supporters of stakeholder theory argue that companies must also reach the stakeholders' goals (Carroll, 1991; Freeman, 1994). Freeman (2010) states that companies have relationships with many constituencies, and that these stakeholders are affected by or may affect the achievement of an organization's objectives and actions. It is unfavorable to concentrate only on the interests of the shareholders. A socially responsible firm should

consider all stakeholder groups in its decision-making processes (Donaldson and Preston, 1995; Carroll, 1991; Freeman, 1994; and Payne and Raiborn, 2018). Findings of Laguir and al. (2015) document a decrease in firms' tax avoidance when the social dimension of CSR increases. Anis and Richardson (2012) find the same results showing that the level of disclosure relative to social investment and CSR strategy negatively affect tax aggressiveness. Thus, corporate management should take into account not only the owners but also non-owners stakeholders (Lanis and Richardson, 2012). However, based on Friedman's theory, managers can integrate the social-stakeholder dimension into their decision-making process as long as it does not harm the achievement of economic objectives. So, as long as social investments allow for some legitimacy and enhance revenue growth, it can be expected that social investments do not contradict a strategy of minimizing tax payments. For example, affording health, safety and development opportunities to employees could be a key factor in achieving wealth, and at the same time being a good citizen in the community. Consistent with this development, we posit the following sub-hypothesis:

H1c: The level of the CSR-social performance is associated with tax avoidance.

Finally, the environmental dimension focuses on how corporations might reduce their resource diversion and toxic emissions and promote product innovation. Companies manage the environmental impacts of their business to build up credibility by internal and external stakeholders. These environmental-protection activities are costly to the firm and need a conscious effort to be accomplished. From an economic point of view, the need for additional resources could encourage tax avoidance for companies involved in environmental issues. Nevertheless, from a legitimacy and corporate culture point of view, most environment-conscious companies would not evade taxes. Results of the literature find no significant relationship between the CSR environmental performance and tax avoidance (Lanis and Richardson, 2012; Laguir et al., 2015). Consistent with the idea that environmental dimension affects the companies' costs, the stakeholders' wage and well-being; we posit the following sub-hypothesis:

H1d: The level of the CSR-environmental performance is associated with tax avoidance.

RESEARCH DESIGN

Data and Sample Selection

The final panel data comprises 614 European companies and 8596 observations from 15 EU countries over the period of 2002-2015. We construct our sample by combining different databases. We collected data from Thomson Reuters DataStream database, and we obtained the index of CSR from Thomson Reuters ASSET4.

The sample selection is motivated by three reasons. First, in this study, we use a large international sample to support more generalizable evidence compared to prior studies focusing on a single country (Lanis and Richardson, 2012; Laguir et al., 2015). At the same time, focusing only on the EU allows us to have consistency in our sample, and ensures a certain degree of comparability regarding tax rules and the regulation of CSR. This does not eliminate the fact that there are differences between countries in tax and CSR legislation, which could potentially disturb the results of the study. Second, we exclude the rest of the EU Member States since they are all emerging countries, and their CSR data are unavailable in ASSET4. Third, following the economic crisis and its tangible social consequences, the EU was the first to convert to the CSR movement (Mullerat, 2013). The EU is, therefore, a favorable ground for exploring the relationship between CSR and tax avoidance.

The initial sample, comprised of all publicly-traded firms in the 15 EU countries as in DataStream Database, is further reduced by the following exclusions: (1) All companies that do not have data for the 14 years of the study and (2) financial companies because government regulations are likely to affect their tax-avoidance measures differently. Panel A of table 1 presents the sample-selection procedure. Panel B of the same table presents the distribution of the sample by industry. The main industries represented are

the manufacturing (45.11 percent), utilities (18.73 percent) and services (13.19 percent). Panel C indicates the distribution of the sample across countries. The majority of companies are established in the United Kingdom (34.69 percent), France (13.36 percent) and Germany (9.77 percent). It is to note that companies in these countries maybe more likely to disclose their CSR activities than others because of stronger disclosure regulations.

TABLE 1
SAMPLE SELECTION AND CHARACTERISTICS

Panel A: Summary of sample-selection criteria			
Publicly- traded firms in DataStream			3222
<i>Less:</i> Firms with missing data			2361
<i>Less:</i> Financial institutions			247
Final sample			614

Panel B: Industry distribution of sample firms			
Industry	SIC codes	Number of Firms	Percentage of Firms
Mining	10-14	36	5.86
Construction	15-17	36	5.86
Manufacturing	20-39	277	45.11
Utilities	40-49	115	18.73
Wholesale trade	50-51	22	3.58
Retail trade	52-59	47	7.65
Services	70-89	81	13.19
Total		614	100.00

Panel C: Sample distribution by country

Country	Number of Firms	Percentage of Firms
Austria	11	1.79
Belgium	21	3.42
Denmark	23	3.75
Finland	29	4.72
France	82	13.36
Germany	60	9.77
Greece	11	1.79
Ireland	9	1.47
Italy	27	4.40
Netherlands	29	4.72
Poland	10	1.63
Portugal	8	1.30
Spain	34	5.54
Sweden	47	7.65
UK	213	34.69
Total	614	100.00

Dependent Variable

We use multiple proxies to measure our dependent variable so as to capture a broad range of corporate tax-avoidance activities. According to Hanlon and Heitzman (2010), no measure is likely to capture all tax-avoidance behaviors, and each measure has its own limitations. Thus, the recent literature has developed several corporate tax-avoidance measures (Hanlon and Heitzman, 2010; Frank et al., 2009; Dyreng et al., 2010). To improve the robustness of our empirical results, we use two different proxies.

The dependent variable of this analysis is the extent of corporate tax avoidance. The two widely used proxies to capture tax-avoidance behaviors according to the previous literature, calculated from financial statement data, are the effective tax rate (ETR) and the book-tax difference (BTD) (e. g., Hanlon and Heitzman, 2010; Gaaya et al., 2017). It has always been problematic to measure tax avoidance since it is not directly observable due to the private nature of tax returns and the insufficient information about taxable income (Hanlon and Heitzman, 2010). Despite the fact that financial statements allow estimating taxable income, it remains an approximation, and the real taxable income could be different.

Our primary dependent variable is ETR which we define as the total income taxes divided by pre-tax accounting income. The ETR is widely used as a measure of corporate tax burden across corporations (Dyreng et al., 2008). The ETR measures the adeptness of a corporation in reducing its current tax liability relative to its pre-tax accounting income. The ETR is an inverse function of tax avoidance. Overall, a lower ETR implies a higher level of tax avoidance. Thus, we use the ETR as a reversed

measure of the dependent variable tax avoidance (Frank et al., 2009). In addition, the ETR_{it} must be positive (Gaaya et al., 2017). We find that eliminating observations with negative and less than zero pre-tax income improves the power of some tests. All the results remain robust if we exclude observations with negative pre-tax income.

Our second proxy measure of tax avoidance is represented by BTD. This is commonly used in tax literature (Wilson, 2009; Lin et al., 2014; Hanlon, 2005; Gaaya et al., 2017). Specifically, firms that are relatively successful in avoiding taxes should maintain significant temporary or permanent differences between their accounting income and their taxable income (Frank et al., 2009). It refers to the difference between pre-tax income and estimated taxable income, scaled by total assets. To calculate the BTD for each firm, we first estimate the taxable income based on the current tax burden divided by the statutory tax rate. The current tax expense is the sum of current federal and foreign taxes or, if it is missing, the total tax expense less deferred taxes. Thus, companies engaging in a higher level of corporate tax avoidance have larger differences between accounting income and taxable income. Thus, we use BTD as a positive measure of tax avoidance.

Independent Variables

The scores for the four dimensions of CSR- namely economic performance (ECOSCORE), social performance (SOCSCORE), environmental performance (ENVSCORE) and corporate-governance performance (CGSCORE)- are obtained from the Thomson Reuters ASSET4 database which adopts and implements a series of CSR activities. In parallel with the growing interest in CSR topics, there has been a substantial increase in the number and quality of organizations providing ESG (Environmental, Social and corporate Governance) data. In this article, we use ESG scores from Thomson Reuters ASSET4 which has been collecting data and scored firms on ESG dimensions since 2002. In addition to the ESG data from KLD databases, ASSET4's valuation universe has the reputation of being one of the most diligent and reputable CSR data sources. It covers approximately 4,500 companies and more than 500 variables. ASSET4 mainly collects information from publicly-available sources to fill more than 750 data points making up 250 Key Performance Indicators (KPIs).

The CSR score represents the weighted average of scores of four dimensions. KPIs are grouped into eighteen categories (see Appendix 1) which are sub-components of the four pillars i.e. economic, environmental, social and corporate-governance performance (Ioannou and Serafeim, 2012). Each of the eighteen categories receives a score between 0 and 100, with high scores indicating a strong performance in the category.

Control Variables

We include a set of control variables in our regression models, referring to the characteristics of firms that may influence tax-avoidance behaviors. To avoid the problems associated with uncorrelated variables, we also introduce several control variables that have been shown to be influential in previous researches about tax-avoidance (Stickney and McGee, 1982; Gupta and Newberry, 1997 and Rego, 2003).

We first include the firm size (SIZE) which may indicate increased access to tax-planning strategies (resulting in lower taxes) but may also indicate increased visibility and political costs (resulting in higher taxes). A previous research (Johnson and Greening, 1999) has shown that the size of firms is positively associated with the social performance of firms. More specifically, because of their greater visibility, large companies are likely to provide more complete information about corporate social performance in the annual report than smaller companies (Cho et al., 2010). In addition, the firm size can have an impact on tax-reduction activities. Some studies suggest that large firms are likely to be more fiscally aggressive than small firms because they have greater economic and political power over smaller companies, and can reduce their tax burden accordingly (e. g., Gupta and Newberry, 1997). Other studies point out that larger firms are subject to more scrutiny by the public, incurring therefore "political costs" in the form of a higher exchange rate (Zimmerman, 1983). Moreover, leverage (LEV) is included as a control variable to indirectly represent the effect of debt on firms' incentives for tax planning. Besides, Return on Assets (ROA) is included to control profitability since the most profitable companies are subject to higher tax

rates. Research and Development (RD) spending as an intangible asset allowing businesses to manage income in a tax-efficient way. In addition, they are positively associated with tax avoidance because of tax-deductible R & D expenditures. We also include inventory intensity (INVINT), corporations with high inventory levels, should be less tax avoidant. We finally include Big4 (BIG). Using a large audit firm can help reduce the company's tax avoidance activities through enhanced monitoring and auditing. A previous research has found a positive association between the engagement of a large auditor, the perception of the quality of the audit and the likelihood of detecting fraud in the financial statements (Matsumura and Tucker, 1992). As a result, companies audited by one of the four major audit firms are expected to be less tax avoidant than companies audited by other than the four major audit firms. All independent, controls variables and BTM are winsorized at the 90 percent level to control the effect of potential outliers.

Empirical Model

In order to examine the association between tax avoidance and CSR, we estimate the following basic regression model:

$$TA_{it} = \alpha_1 + \alpha_2 CSR_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 ROA_{it} + \alpha_6 INVINT_{it} + \alpha_7 RD_{it} + \alpha_8 BIG_{it} + SectorFixedeffects + \epsilon_{it} \quad (1)$$

where: TA is either the firm's ETR or BTM. ETR=tax expense divided by pre-tax income; BTM = (pre-tax income minus estimated taxable income) divided by total assets; CSR = Weighted average of the four scores; SIZE = The natural logarithm of total assets; LEV = total long-term debt divided by total assets; ROA = pre-tax income divided by total assets; INVINT = total inventories divided by total assets; RD= Research and development expenses divided by total lagged assets; BIG =dummy variable taking the value 1 when the firm's auditor belongs to the large international accounting firms, and 0 otherwise; ϵ is the error term.

To test our sub-hypotheses (H1a, H1b, H1c and H1d), we run four different models where we include each of CSR dimensions as independent variable. They are estimated as follows:

$$TA_{it} = \alpha_1 + \alpha_2 ECOSCORE_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 ROA_{it} + \alpha_6 INVINT_{it} + \alpha_7 RD_{it} + \alpha_8 BIG_{it} + SectorFixedeffects + \epsilon_{it} \quad (2)$$

$$TA_{it} = \alpha_1 + \alpha_2 ENVSCORE_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 ROA_{it} + \alpha_6 INVINT_{it} + \alpha_7 RD_{it} + \alpha_8 BIG_{it} + SectorFixedeffects + \epsilon_{it} \quad (3)$$

$$TA_{it} = \alpha_1 + \alpha_2 SOCSCORE_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 ROA_{it} + \alpha_6 INVINT_{it} + \alpha_7 RD_{it} + \alpha_8 BIG_{it} + SectorFixedeffects + \epsilon_{it} \quad (4)$$

$$TA_{it} = \alpha_1 + \alpha_2 CGSCORE_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 ROA_{it} + \alpha_6 INVINT_{it} + \alpha_7 RD_{it} + \alpha_8 BIG_{it} + SectorFixedeffects + \epsilon_{it} \quad (5)$$

RESULTS

Descriptive Statistics

Table 2 below provides the descriptive statistics of the variables used in our study. For the dependent variable ETR, the mean (median) is 0.287 (0.276) with a series of values between 0-1. For BTM, the mean (median) is 0.075 (0.066). The ratings of the five CSR variables are between 6.780 and 95.530. The mean (median) of CSR is 61.466 (64.464), the mean (median) of the environmental score ENVSCORE is 66.428 (77.185), the mean (median) of the economic score ECOSCORE is 57.822 (64.670), the mean (median) of social score SOCSCORE is 68,074 (77,110), and the mean (median) of the corporate

governance score CGSCORE is 53,540 (57,440).The rest of the control variables are also presented in Table 2

TABLE 2
DESCRIPTIVE STATISTICS RELATING TO SAMPLE FIRMS

Variables	Obs	Mean	Q1	Q2	Q3	Std. Dev.	Min	Max
Test Variables								
ETR	7556	0.287	0.209	0.276	0.331	0.629	0	1
BTD	8316	0.075	0.033	0.066	0.112	0.057	-0.006	0.179
CSR	8596	61.466	47.646	64.464	77.210	19.402	13.453	93.545
ENVSCORE	8596	66.428	41.080	77.185	91.730	27.840	18.530	94.390
ECOSCORE	8596	57.822	30.290	64.670	86.235	30.681	6.780	94.960
SOCSCORE	8596	68.074	47.300	77.110	91.260	26.081	20.420	95.530
CGSCORE	8596	53.540	29.555	57.440	79.015	27.803	8.080	89.300
Control Variables								
SIZE	8596	15.325	13.996	15.253	16.672	1.806	11.273	19.344
ROA	8596	0.076	0.032	0.066	0.112	0.089	-0.206	0.391
LEV	8596	0.198	0.081	0.180	0.285	0.151	0.000	0.672
INV	8596	0.110	0.017	0.082	0.161	0.123	0.000	0.778
RD	8596	0.016	0.000	0.000	0.015	0.036	0.000	0.209
BIG	8596	0.884	1.000	1.000	1.000	0.320	0	1

See Appendix 2 for variable definitions; data are obtained from WorldScope and ASSET4 databases.

Table 3 presents the average and standard deviation of economic, environmental, social, corporate governance and the overall CSR indexes for each country during the sampling period. As can be seen, CSR scores vary considerably from one country to another.

TABLE 3
AVERAGE AND STANDARD DEVIATION OF THE FOUR DIMENSIONS OF CSR AND THAT OF
THE CSR INDEX BY COUNTRY (N=8596)

Country	Firms	Obs	ENVSCORE			ECOSCORE			SOCSCORE			CGSCORE			CSR		
			Mean	Std. dev	Obs	Mean	Std. dev	Obs	Mean	Std. dev	Obs	Mean	Std. dev	Obs	Mean	Std. dev	Obs
Austria	11	154	70.275	21.865	73.387	24.407	70.002	24.676	55.371	23.163	67.258	14.384					
Belgium	21	308	67.655	27.285	71.798	24.809	76.879	20.527	49.787	23.510	66.53	13.344					
Denmark	23	350	58.253	28.054	69.909	27.262	84.885	15.712	56.179	24.464	67.306	16.240					
Finland	29	406	76.197	24.344	62.363	30.198	75.111	23.911	44.613	25.883	64.571	16.955					
France	82	1148	74.944	25.035	52.902	31.576	61.841	28.824	33.555	24.695	55.810	18.358					
Germany	60	840	68.984	28.797	60.631	30.247	66.511	26.506	43.541	26.262	59.917	17.948					
Greece	11	154	48.465	28.126	57.844	32.205	67.022	29.821	37.852	37.852	52.796	16.843					
Ireland	9	126	45.799	28.239	80.767	20.144	88.620	9.126	69.539	19.965	71.181	10.213					
Italy	27	378	65.774	30.444	56.783	32.299	67.097	27.247	52.409	29.565	60.516	21.097					
Netherlands	29	406	68.533	27.543	58.469	31.203	74.063	25.318	43.556	26.689	61.155	19.615					
Poland	10	140	88.430	20.485	69.447	29.528	79.563	23.534	55.584	22.978	73.256	16.730					
Portugal	8	112	67.631	26.929	43.925	35.265	48.546	33.209	25.155	24.525	46.314	24.600					
Spain	34	476	73.495	25.648	54.615	30.991	72.241	26.373	43.143	27.188	60.873	19.181					
Sweden	47	658	72.849	26.515	62.889	26.871	71.640	23.558	51.459	23.410	64.709	18.940					
UK	213	2982	59.636	26.912	53.264	30.303	64.410	24.769	69.982	21.684	61.823	20.513					

This table presents the average and the standard deviation of the economic, environmental, social and corporate-governance dimensions, and that of the aggregate CSR index for each country of the final sample of 614 companies for the 2002- 2015period.

Correlation Results

Appendix 3 presents the Pearson-pairwise correlation between the independent and control variables. We follow Kennedy (1985) who considers a critical value of 0.8 for the correlation coefficient behind which a serious problem of multi-collinearity between the independent variables and the control variables appears.

The results of the correlation matrix reveal a positive and significant relationship between CSR and ECOSCORE (0.753), ENVSCORE (0.572), the highest correlation coefficient with SOCISCORE (0.790) and CGSCORE (0.648). For the control variables, the CSR is positively and significantly correlated with SIZE (0.335), LEV (0.085), INVINT (0.030), RD (0.026) and BIG (0.061). However, it is negatively correlated and not significant with ROA (-0.017). On the other hand, the four scores are strongly correlated with each other, and the rest of the control variables are generally correlated. So multi-collinearity is not problematic in our basic-regression model.

Regression Results

In table 4, column 1 presents the Tobit-regression results, and column 2 presents the GLS regression of the relationship between tax avoidance and the CSR. Furthermore, table 4 presents the results of the estimation of equation (1) when the independent variable is CSR. Column 1 shows that the coefficient of CSR is significantly negative at the level of 1% with ETR, and column 2 shows that the coefficient of CSR is significantly positive at the level of 1% with BTD. These results indicate that firms with higher CSR indexes pay lower taxes than other ones. Thus, our main hypothesis is not rejected. Consistent with Friedman's view, this shows that CSR and tax avoidance vary in the same direction, and are part of a same strategy i.e. maximizing profits.

TABLE 4
RELATION BETWEEN TAX AVOIDANCE AND CSR

Variables	ETR (1)		BTD (2)	
	coefficient	p-value	coefficient	p-value
CSR	-0.052 ^{***}	0.000	0.004 ^{***}	0.000
SIZE	-0.004 [*]	0.100	-0.001 ^{***}	0.000
ROA	-0.393 ^{***}	0.000	0.686 ^{***}	0.000
LEV	0.012	0.526	-0.010 ^{***}	0.000
INVINT	0.034	0.244	0.009 ^{***}	0.000
RD	0.011	0.908	0.035 ^{***}	0.000
BIG	-0.027 ^{**}	0.040	0.002 ^{***}	0.000
Constant	0.419 ^{***}	0.000	0.040 ^{***}	0.000
Industry Fixed effects	Yes		Yes	
Model Significance	0.000 ^{***}		0.000 ^{***}	
N	7556		8316	

***, **, *: significant at the threshold of 1%, 5% and 10%, respectively. Variables are defined in Appendix 2. The coefficient of CSR is multiplied by 100 for presentation issues.

Remarkably, these findings are contrary to the results provided by Lanis and Richardson, (2012) who argue that socially responsible firms are less tax aggressive. However, they support the idea that "claims to engage in CSR can mask many inconsistencies in a company's CSR approach" (Sikka, 2010, p.12). Indeed, companies are simultaneously involved in CSR and tax-avoidance activities. In the view of Hoi et al. (2013), CSR activities are used as a way of promoting the risk-management tool to improve reputation. Overall, participating in tax-avoidance activities can expose companies to a variety of risks, including tax authority, audit risk, litigation risk and reputational risk (Hanlon and Heitzman, 2010), and can destroy public trust. Therefore, companies are coping with the potential negative consequences of tax-avoidance practices by increasing positive CSR activities. A company operates through considering an optimal balance between minimizing tax payments, and maintaining its reputation and legitimacy within the society. Furthermore, the results are in line with those of Huseynov and Klamm (2012) and Davis et al. (2016) suggesting that it might be socially acceptable to reduce tax payments. As lower tax payments increase profitability, companies are better positioned to take part in costly CSR activities. through other means such as investing in infrastructure, research and development, and job creation.

Concerning control variables, the coefficient of SIZE is generally inconsistent via the various measures of tax avoidance. For example, it is significantly and negatively related to tax avoidance when BTD is the dependent variable, which is consistent with the political cost hypothesis (Zimmerman, 1983). However, the relationship is positive when ETR is the dependent variable (Kim and Zhang, 2016). Our results also show that the regression coefficient of ROA is positively and significantly associated with tax avoidance at the 1% level with both measures, indicating profitable firms are more likely to conduct tax-avoidance activities than less profitable firms. We also observe that the regression coefficient so f LEV and INVINT are not significant with ETR. However, LEV is negative and significant at the level of 1% with BTD, and INVINT is positive and significant at the 1% level with BTD. These results are not supported by previous studies (Lanis and Richardson, 2012; Richardson et al., 2015). Besides, we find that some of the RD-regression coefficients are not significant with ETR, but are positively associated with BTD, so companies having a high research and development intensity are more likely to avoid tax. Finally, the regression coefficient of BIG is positive and significantly associated with tax avoidance. While the coefficient is mathematically modest, big audit firms have an important role in the process of tax avoidance.

Table 5 reports the results of the estimation of equation (2) when the independent variables are economic, environmental, social and corporate-governance performance. It shows the results by incorporating them separately into four individual models. First, the regression coefficient of ECOSCORE remains positively significant for both measures at the 1% level with tax avoidance. This result is in line with the findings of Laguir and al. (2015). The regression coefficient for ENVSCORE is significantly negative with ETR at the 5% level, and negatively insignificant with BTD. We also observe that the regression coefficient of SOCScore is significantly negative with ETR at the 10% level, and significantly positive with BTD at the 1% level. Finally, the regression coefficient of CGSCORE is positively associated with tax avoidance. This result which is in line with Huseynov and Klamm (2012) suggest that a strong corporate governance would be linked to a higher degree of tax avoidance. The control variables in this analysis show the same results as the control variables in the first regression model. ROA and BIG are positively and significantly associated with tax avoidance in all models. INVINT and RD are positive and significant, and LEV is negative and significant except with BTD.

TABLE 5
RELATION BETWEEN TAX AVOIDANCE AND THE ENVIRONMENTAL, ECONOMIC, SOCIAL AND CORPORATE GOVERNANCE PERFORMANCE

	ETR(1)	ETR(2)	ETR(3)	ETR (4)	BTD (5)	BTD(6)	BTD (7)	BTD (8)
ECOSCORE	-0.027***	-	-	-	0.003***	-	-	-
ENVSORE	-	-0.019**	-	-	-	-0.000	-	-
SOCSCORE	-	-	-0.018*	-	-	-	0.002***	-
CGSCORE	-	-	-	-0.028***	-	-	-	0.003***
SIZE	-0.005**	-0.005***	-0.006***	-0.006***	-0.001***	-0.001***	-0.001***	-0.001***
ROA	-0.390***	-0.400***	-0.395***	-0.396***	0.685***	0.686***	0.686***	0.686***
LEV	0.011	0.011	0.013	0.013	-0.010***	-0.010***	-0.010***	-0.010***
INVTINT	0.012	0.037	0.034	0.035	0.009***	0.010***	0.010***	0.010***
RD	-0.029	0.012	0.008	0.006	0.035***	0.034***	0.035***	0.035***
BIG	-0.030**	-0.029**	-0.029**	-0.025**	0.002***	0.002***	0.002***	0.002***
Constant	0.427***	0.426***	0.039***	0.431***	0.040***	0.040***	0.040***	0.039***
Industry Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Model sig	0,000***	0,000***	0,000***	0,000***	0,000***	0,000***	0,000***	0,000***
N	7556	7556	7556	7556	8316	8316	8316	8316

***, **, *: significant at the threshold of 1%, 5% and 10%, respectively. All variable definitions are presented in Appendix 2. The coefficient of CSR is multiplied by 100 for presentation issues.

To summarize, we have found that all CSR scores are positively related to tax avoidance. Hence, tax avoidance does not depend on the nature of the CSR activities a firm engages in. These results support the view that companies take care of their social responsibility, but at the same time, engage in tax-avoidance strategies (Sikka 2010). Our data indicate that managers or other stakeholders do not view corporate-tax payments as part of a company's socially responsible behavior. Therefore, consistent with Friedman's (1970) view, CSR and tax avoidance act as complements rather than substitutes. Moreover, our evidence provides that the financial benefits that can be derived from tax avoidance can generate net benefits for shareholders while meeting the needs and desires of stakeholders (Garcia 2016). CGSCORE results indicate that, ultimately corporate governance seems to be at the service of the shareholders before serving the other stakeholders, and that the governing bodies ensure the maximization of economic value for shareholders by considering the tax avoidance as compatible with socially responsible activities.

ADDITIONAL ANALYSIS

We perform a separate analysis for companies with high and low CSR indexes. We create an indicator variable to designate the firms of the highest or lowest quintiles of CSR, and we reestimate the equation model (1) using CSR_High and CSR_Low in place of CSR. The results of the estimation of this regression are shown in Table 6. CSR_High is significantly positive with tax avoidance contrariwise to CSR_Low which is negative but non significantly associated with tax avoidance. This result suggests that highly-ranked firms are responsible for the positive relationship between tax avoidance and the CSR index reported in Table 4. It supports the view that the most socially responsible companies engage in tax-avoidance strategies. Companies see that engaging in CSR activities maintains their reputation and legitimacy. They reduce their tax liabilities to involve in costly CSR activities, and spend money on social projects. They directly improve social welfare through investing in the infrastructure, fostering innovation, contributing to environmental protection and job creation, and enhancing overall economic development and growth. This finding is in line with the results of Davis et al. (2016), and contrasts those of Hoi et al. (2013) who provide evidence that firms with weak CSR activities avoid more taxes.

TABLE 6
RELATION BETWEEN TAX AVOIDANCE AND THE INDEX HIGH/LOW CSR

Variables	ETR		BTD	
	coefficient	p-value	coefficient	p-value
CSR_High	-0.949*	0.074	0.140***	0.000
CSR_Low	1.159**	0.021	-0.056	0.137
SIZE	-0.005**	0.008	-0.001***	0.000
ROA	-0.394***	0.000	0.686***	0.000
LEV	0.012	0.578	-0.010***	0.000
INVINT	0.035	0.588	0.010***	0.000
RD	-0.011	0.981	0.034***	0.000
BIG	-0.027**	0.041	0.002***	0.000
Constant	0.403***	0.000	0.042***	0.000
Industry Fixed effects	Yes		Yes	
Model sig	0,000***		0,000***	
N	7556		8316	

***, **, *: significant at the threshold of 1%, 5% and 10%, respectively. The coefficient of CSR is multiplied by 100 for presentation issues.

SUMMARY AND CONCLUDING REMARKS

Much of the literature on CSR and tax avoidance is theoretical in nature (Garcia 2016). The link between CSR and tax avoidance falls within the framework of two competing theories: shareholder theory (Friedman, 1970) and stakeholder theory (Freeman, 1994; Carroll, 1979; Donaldson and Preston, 1995). The purpose of this research is to study the relationship between the CSR and tax avoidance practices in an international framework, taking advantage of a relative consistency of CSR in the European Union. In addition, we determine the CSR activities associated with the probability for a company to avoid taxes. These activities are represented by four dimensions, including economic, environmental, social and corporate-governance performance. Based on a sample of 614 companies from 15 EU member states over the period of 2002-2015, we find that CSR index is negatively related to ETR, and positively associated with BTD. Overall, this research supports the view that the higher the level of CSR activities of a firm is, the higher the level of tax avoidance is. This result is confirmed in our additional analysis as we find that the most socially responsible companies do avoid more corporate taxes than other companies. This result suggests that companies classified as highly responsible are at the origin of the positive relationship between tax avoidance and the CSR index. These findings are inconsistent with existing researches concluding that low CSR firms avoid more taxes (Lanis and Richardson, 2012 and 2015; Muller, 2015; Sikka, 2010). Moreover, as in Sikka (2010), our study draws attention to the gaps between the corporate discourse on the one hand and decisions and actions on the other hand. The fact that all CSR scores are positively related to tax avoidance leads to the conclusion that tax avoidance do not depend on the nature of the CSR activities a company engages in. Overall, the findings supports the Friedman's theory suggesting that tax payments and CSR act as substitutes.

Our study has some limitations. First, like other studies attempting to measure tax avoidance, the ETR is calculated in accordance with the information presented in the financial statements, and may not represent the actual tax situation. We have also used an approximate value of taxable income to measure the BTM. These proxies remain an approximation of the level of tax avoidance, and may differ from the actual level of tax avoidance. Second, due to the limited availability of CSR data, it was not possible to use alternative measures of CSR. Other databases such as KLD database could be used for robustness analyses. Third, our models explain tax avoidance by CSR, and we recognize a possible endogeneity problem since CSR expenses could at the same time depend on tax avoidance behavior. Firms could see more need to engage in CSR activities to offset the negative reputation resulting from aggressive tax behavior.

Future researches on tax avoidance and CSR could look into a number of important issues. First, it would be interesting to perform this study in an international sample of emerging countries. There is a little research in this area while, for example, lot of polluting countries or not respectful of employees' rights are emerging countries. Second, the role of ethics in conducting CSR activities and corporate tax policy requires a further study. Eventually, a comparison between the CSR disclosure and CSR actual activities is worth being deeply investigated to better understand the relation with tax avoidance.

ENDNOTES

1. Sikka (2010) defines tax avoidance as a lawful activity promoted by 'novel interpretations' and 'technical skills' of loopholes of the law, which can be inconsistent with the spirit of the law.
2. Our dependent variable measured by ETR is truncated to the 0–1 range, so we use Tobit- regression analysis (see e.g., Tobin, 1958; Amemiya, 1973)

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APPENDICES

APPENDIX 1

DESCRIPTION OF ASSET4 PILLARS AND CATEGORIES (RIBANDO AND BONNE, 2010)

Pillars	Categories
Economic performance (ECOSCORE)	Customer loyalty Economic performance Shareholder loyalty
Environmental performance (ENVSCORE)	Reducing a company's resources Reducing emissions Product innovation
Social performance (SOCISCORE)	Quality of employment Health and safety Training and development Diversity Human rights Community and product responsibility
Corporate Governance performance (CGSCORE)	Board structure Compensation policy Board functions Shareholder rights Vision and strategy

APPENDIX 2
DEFINITION OF THE VARIABLES

Variables	Measures	Descriptions	Data sources
Dependent Variable			
Tax avoidance:			
Effective tax rate	ETR	Total income taxes divided by pre-tax income.	Datastream database
Book-tax difference	BTD	Pre-tax accounting income minus estimated taxable income based on total assets	Datastream database
Independent Variables			
Corporate social responsibility	CSR	CSR score is the weighted average of four scores. Companies receive a score on their economic, environmental, social and corporate-governance performance.	Asset4
Economic score	ECOSCORE	Companies receive a score on their economic performance between 0 and 100 with a higher score indicating a better performance.	Asset4
Environmental score	ENVSCORE	Companies receive a score on their environmental performance between 0 and 100 with a higher score indicating a better performance.	Asset4
Social score	SOCSCORE	Companies receive a score on their social performance between 0 and 100 with a higher score indicating a better performance.	Asset4
Corporate governance score	CGSCORE	Companies receive a score on their corporate governance performance between 0 and 100 with a higher score indicating a better performance.	Asset4
Control variables			
Size	SIZE	Natural logarithm of total assets for firm i in year t.	Datastream database
Leverage	LEV	Total long-term debt divided by total assets for firm i in year t	Datastream database
Return on Assets	ROA	Measured as the pre-tax income divided by total assets	Datastream database
Inventory intensity	INVINT	Inventory divided by total assets	Datastream database

Variables	Measures	Descriptions	Data sources
Research and development	RD	Research and development expense (RD) divided by lagged total assets (AT)	Datastream database
Auditor	BIG	A dichotomous value taking the value 1 when the auditor of the company is one of the big audit firms (Big4), and zero otherwise.	Datastream database
Additional test variables			
	CSR_High	An indicator variable equal to 1 if the firm is in the highest quintile of CSR, and 0 otherwise	
	CSR_Low	An indicator variable equal to 1 if a firm is in the lowest quintile of CSR_Index, and 0 otherwise	

APPENDIX 3
PEARSON-CORRELATION RESULTS

	CSR	ECOSCORE	ENVSORE	SOCISORE	CGSCORE	SIZE	LEV	ROA	INVINT	RD	BIG
CSR	1										
ECOSCORE	0.753***	1									
ENVSORE	0.572***	0.204***	1								
SOCISORE	0.790***	0.511***	0.302***	1							
CGSCORE	0.648***	0.314***	0.087***	0.400***	1						
SIZE	0.335***	0.222***	0.522***	0.253***	-0.071***	1					
LEV	0.085***	0.031***	0.092***	0.072***	0.042***	0.185***	1				
ROA	-0.017	0.053***	-0.143***	-0.007	0.043***	-0.214***	-0.308***	1			
INVINT	0.030***	0.006	0.094***	0.007	-0.025**	-0.084***	-0.281***	0.122***	1		
RD	0.026**	0.009	0.100***	0.012	-0.049***	0.015	-0.218***	0.079***	0.234***	1	
BIG	0.061***	-0.046***	0.028***	0.019*	0.175***	-0.051***	0.051***	0.045***	0.037***	-0.001	1

***, **, *, significant at the threshold of 1%, 5% and 10%, respectively. Variables are defined in Appendix 2.