Corporate Social Responsibility and Financial Performance: An Empirical Analysis on Greek Companies

Theofanis Karagiorgos

Abstract: This paper is an attempt to explore the relationship of CSR and firms’ financial performance in Greek firms. Based on stakeholder theory and mainly on the theory of “good management”, we try to find out if an improvement in CSR actions results in higher stock returns. Our empirical analysis will test whether there is an impact of CSR performance on stock returns, using voluntary disclosures, based on a sample of Greek listed companies. The findings show that there is a positive correlation among stock returns and CSR performance in Greek companies. In operational level, these results aim at persuading managers to implement CSR actions in a greater extent in order to enhance firm market efficiency.

JEL Classification: C14, C23

Keywords: Corporate Social Responsibility, Financial Performance, Stock Returns, Stakeholders, Reporting, Greece

1. Introduction

The definition of Corporate Social Responsibility (CSR) is an issue that dominates the existing literature. Many authors made an attempt to approach this term with many views. Davis (1973, pp.312-313) defined CSR as “the firm’s considerations of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm to accomplish social benefits along with the traditional economic gains which the firm seeks”. The World Business Council for Sustainable Development (1999) suggests that: “CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”. There is also a disagreement on the definition of CSR among those that face CSR as an ethical attitude and those who argue that it is a firm’s strategy (Wan-Jan, 2006). Stainer (2006, pp.253) states that “CSR concept is to show that ethical principles, from wherever derived, can improve
reasoning and harmonize decisions, especially in complex situations and thus, enhance performance”. The unclear state of CSR definition is recognized also by Dahlsrud (2008).

It has become a necessity for companies to deal with issues that concern all kinds of stakeholders, either internal or market-related. This need is depicted by Isaksson and Steimle (2009, pp.170), who face CSR as the “company’s commitment to behave socially and environmentally responsible while striving for its economic goals”. Because of the tight relationship and stakeholders’ demands, Lo (2009) refers to the existing hope in modern society that stakeholders will stop forcing managers to lead their firm in long-term social responsibility and try only to achieve low costs in short time periods.

However, a CSR action ought to be correlated with the financial state and outcomes of firms. Therefore, many studies were concentrated on the link between CSR and economic or financial firms’ performance. CSR actions and economic state are faced either as competitive or complementary issues by many authors (Godfrey and Hatch, 2007). The latter view is supported by Friedman (1970), who pointed out that the only social responsibility of a firm is to maximize its profits, as to stay in the game of market without deception or fraud. However, CSR activities are being examined by company’s stakeholders. CSR will be evaluated by the market in relation with strategy, cash flows and reputation. Stock markets will not value positively charitable and unpublicized contributions by a firm unless they have impact on firm’s reputation (Van Dijken, 2007). On the contrary, CSR implementation can provide opportunities to a firm and lead to added value (Cramer, 2003). In the research of Holmes (1976) improved reputation and enhancement of social community are the most expected positive results while the decrease of short-run profitability and conflict among social and financial goals are the possible negative outcomes in the view of executives.

A CSR study “can arguably be seen implicitly as a proxy for stakeholder studies” (Cummings and Patel, 2009, pp.23). Stakeholder theory is based on examination of groups to which a firm reacts responsibly (Moir 2001, pp.20) and adopted by many authors as the basis for analysis on CSR issues. Freeman (1984, pp.5) defined a stakeholder as “any group or individual who can affect or is affected by the achievement of the firm’s objectives”. According to Pesqueux and Damak-Ayadi (2005) and the literature review of Cummings and Patel (2009), stakeholders could be classified in categories: shareholders, internal stakeholders (employees), operational partners (customers, suppliers) and social community (state authorities, non-governmental organizations, civil society). In this specific case, stakeholder theory can be used as to describe the reasons for which a company may undertake CSR activities as to gain maximized long-term returns (Samy et al., 2010).

Stakeholders’ pressure made companies to become more sustainable because of the former’s influence. Sustainability, which depicts the necessity of corporations to give importance in issues as human resources and environment as well as not to destroy resources needed for next generations, becomes a way for
companies to develop (Isaksson and Steimle, 2009). According to Elkington (2000, pp.229), a firm is sustainable if it functions according to ‘Triple Bottom Line’ (economic prosperity, environmental quality and social justice). TBL approach is well adopted by many authors in their reviews and researches. In conclusion, according to Ingley et al., (2010), CSR implies all the proper social, environmental and economic actions that a firm must incorporate as to satisfy the concerns of stakeholders and the financial requirements of shareholders.

2. Corporate Social Responsibility and Disclosures

According to Roberts (1992), CSR reporting is a strategic plan in order a firm manages stakeholder relationships. In other words, we could say that a firm uses CSR reporting to communicate with its stakeholders. Disclosure on CSR activities is necessary due to the fact that a firm “owes a duty to the society or has a social contract”. Concerning the need of communication and verification of social and environmental issues, different guidelines came out (Reynolds and Yuthas, 2008, pp.48). Isenmann et al., (2007) referred to the increasing rate of CSR reporting via Internet after the 2001 survey of CSR network. The same authors exhibited the positive and negative aspects of online reporting. Apart from the worthy side of internet-based reporting, there is a sceptical view because of its voluntary status and the existence of various reporting systems.

Corporate disclosures provide a firm the opportunity to spread value information mainly to financial stakeholders as stock analysts, capital markets and institutional investors and thereas get evaluated on its financial measures. Despite the necessity for disclosures on social and environmental issues, there has been a variety of factors, which may affect either positively or negatively firms to provide these reports. Firm’s size and the characteristics of industry seem to play the most important role in the disclosure of environmental issues, according to many studies (Da Silva Monteiro and Aibar-Guzmán, 2009; Brammer and Pavelin, 2008; Magness, 2006).

The most widely used guidelines are Global Reporting Initiative (GRI), founded in 1997 by the Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environmental Programme (UNEP). The current version of the guidelines (GRI-G3) was published in 2006. GRI provides indicators to companies in order to measure and report their economic, social and environmental performance (GRI, 2006). GRI guidelines were selected by Adams (2004) because of their high international profile and influence. Samy et al., (2010) used the GRI guidelines in their research, pointing out that GRI is an attempt to overcome possible problems for companies that may occur using other measurement standards. Moreover their opinion is granted on the perception of WBCSD, which face GRI as widely acceptable reporting guidelines. GRI guidelines could become a mean of evaluation for investment decision as shareholders will be able to understand past performance and future objectives (Willis, 2003). Schadewitz and
Niskala (2010) shared the opinion that companies may obtain higher stock returns if they apply GRI guidelines, something that is reassured by their research.

GRI has been an object of research in many studies, either as a measure of CSR measurement (Panayiotou et al., 2009a) or as a way for qualitative evaluation of sustainability reporting (Stiller and Daub, 2007; Skouloudis et al., 2009; Skouloudis et al., 2010; Gallego, 2006; Tagesson et al., 2009; Mio, 2009; Clarkson et al., 2008; Sutantoputra, 2009). According to all above, GRI reporting can be used as a tool for research in CSR practices, providing strict guidelines and a wide variety of issues for evaluation on the economic, social and environmental field. The use of GRI guidelines as an instrument in order to measure CSR practices is justified by the research of Gjølberg (2009).

3. Measuring Corporate Social Responsibility

In many studies the measure of CSR is commonly referred as Corporate Social Performance (CSP). According to Dennis et al., (2008, pp.26), “Corporate social performance (CSP) describes the proposed relationship between corporate social responsibility activities and firm-level corporate financial measures”. Our literature review reveals that many efforts have been done to measure CSR activities. Waddock and Graves (1997) pointed out the problem of measuring CSP and identified the unclear relationship between CSR and financial performance. They noticed and admitted the difficulty that many researches did not construct a representative CSP measure, focusing on partial areas of CSR and ignoring the rest.

According to the literature review of Wood (2010), CSP has been measured by using Social reports, Environmental reports, Annual reports of social or environmental disclosures, Multi-faceted CC measure, KLD ratings, Multi-faceted CSP measure: Stillers Ethical (Performance Scorecard (EPS)), Canadian Social Investment Database (CSID) ratings, ARESE ratings and Vigeo ratings (Europe). Soana (2009), in her literature review, pointed out that social performance is measured in various studies by five different methods: content analysis, surveys carried out using questionnaires, reputational measures, unidimensional indicators and ethical ratings.

It is important for the examination of the relationship between CSR and firm’s performance to have a ‘multiple-indicators, multiple-causes’ (MIMIC) model because of the multidimensional nature of CSR (Elsayed and Paton, 2005). Mahoney and Roberts (2007) calculated a composite measure of CSR, based on community relations, diversity, employee relations, environment, international, product safety, and other ratings. Brammer et al., (2006) and Fiori et al., (2009) adopted three parameters of CSR: employment (health and safety, training and development, equal opportunities policies, equal opportunity systems, employee relations, systems for job creation and job security), environment (policies, management systems, and reporting) and community. They also translated each text ratings into quantitative variables.
4. Measuring Firm’s Financial Performance

The researches on the existing relationship between corporate social responsibility (or corporate social performance) and financial performance use a wide variety of measures of firm financial performance. The great portion of them measure firm performance either from the accounting or market view. McGuire et al., (1988) pointed out the problems that may occur, using accounting-based measures and market-based measures. Accounting measures are “susceptible to differential accounting procedures and managerial manipulation” and market-based measures, due to investor’s evaluation, “may not be sufficient”. The advantage of market-based measures is that “we can estimate the value (or the cost) of companies adopting certain strategies to be socially responsible, conditional on the existing information” (Goukasian and Whitney, 2008). The literature review of Fiori et al., (2009) reveals that the measurement of firms’ financial performance can be based on: profitability, liquidity, solvency, financial efficiency and repayment capacity. Among 95 studies that Margolis and Walsh (2001) reviewed, 49 used accounting measures, 12 used market measures and the rest used a mixed set. The literature review of Griffin and Mahon (1997) provide a list with all measures of Corporate Financial Performance (CFP) used in their examined studies. The results of their review concluded that the most popular measures are size (logarithm of total assets), ROA, ROE, asset age and 5-year ROS.

Return On Assets (ROA) was widely used as we observed in the following studies: Hull and Rothenberg, 2008; Mahoney and Roberts, 2007; Waddock and Graves, 1997; Lee et al., 2009; D’Arcimoles and Trebucq, 2002; Aras et al., 2010; Bhagat and Bolton, 2008; Fernandez-Sanchez and Sotorrio, 2007). According to Hull and Rothenberg (2008, pp.785), ROA “represents the profitability of the firm with respect to the total set of resources, or assets, under its control”. Return On Equity (ROE) was used as an accounting measure in our examining literature (Mahoney and Roberts, 2007; Waddock and Graves, 1997; Lee et al., 2009; D’Arcimoles and Trebucq, 2002; Aras et al., 2010). Return On Sales (ROS) is an accounting measure that was also used widely (Waddock and Graves, 1997; Lee et al., 2009; Aras et al., 2010). The wide use of Tobin’s q ratio as we found out in our examining literature (Surroca et al., 2010; Dowell et al., 2000; Bhagat and Bolton, 2008), is justified by its ability to measure long-term investments and is calculated by dividing the sum of firm equity value, book value of long-term debt, and net current liabilities by the book value of inventories and property, plant and equipment.

Stock return is a market-based measure that was mainly used in corporate financial performance literature (Bhagat and Bolton, 2008; Brammer, et al., 2006). Herremans et al., (1993) used the return on a company’s common stock as risk and abnormal returns of a company’s common stock as stock market return. Jacobs et al., (2010) and Lin et al., (2009) used the CAPM model to estimate abnormal returns.
5. The link between Corporate Social Responsibility and Firm’s Financial Performance

The examination of relationship between CSR and firm financial performance has been highly developed and researched in the modern literature. The link between may be positive, neutral or negative. Based on the summary of findings in the research of Ullmann (1985), it is easily to find out that the linkage between CSR and financial performance is unclear. Thus, we can divide researches in three groups: those which found positive relationship, suggesting that CSR improves firms’ value, those which found negative relationship, adopting the idea that firm must use its resources only to maximize its profits and otherwise it will have adverse results, and those which found neutral relationship, implying that there are many factors that can prevent researchers from secure results (Kang et al., 2010). Neutral association can be explained if CSR is perceived as pure marketing strategy (D’Arcimoles and Trebucq, 2002).

This relationship may have two ways of evaluation. CSR may be linked with subsequent financial performance as to find out in what degree financial performance is improved but also it can be linked with past firm performance to explore if firms with high financial performance take on CSR actions. Waddock and Graves (1997) based on the theories of “slack resources” and “good management”, did approved that better financial performance results in improved CSP and improved CSP leads to improved financial performance. The previous conclusions are supported also by the research of Surroca et al., (2010). Therefore, a serious conflict among researchers is whether CSP is independent or dependent variable in the relationship between CSP and CFP. Based on the research of Margolis and Walsh (2003), in a total of 127 reviewed studies, CSP has been treated as independent variable in 109 cases.

The mixed results referred above are consistent with our literature review. The examination of literature on past and subsequent financial performance shows conflicting results. Positive association was found in the studies of Wahba (2008), Hull and Rothenberg (2008), Rettab et al., (2009), and Herremans et al., (1993). Moreover, Moskowitz (1972) suggested that the high listed companies in terms of CSR reported higher than average stock returns while Bird et al., (2007), concluded that firms who engage CSR activities will be rewarded in the market place but market seem to evaluate more negatively firms which do not include CSR strategy in their business. Nelling and Webb (2009), using ROA and annual stock return as dependent variables, found positive and significant relationship with CSR score. The research of Feldman et al., (1997) revealed that an improvement in environmental management system and future environmental performance will increase shareholder wealth by five percent. On contrast, negative relationship was proved in the study of Wood and Jones (2005). Brammer et al., (2006) found that the overall CSR measure has significant but negative effect on stock returns. Evaluating each social performance indicator, they found that the measure of employee performance
has significant and negative effect on stock returns, community measure has positive but not significant effect and environment measure has negative and no significance too. In addition, Vance (1975) found a negative correlation between rankings of social responsibility and stock market performance. Finally, in the literature review of Wood and Jones (2005), there is an important finding by other researchers that is pointed out: Negative impact on abnormal stock returns was noticed after the announcement of CSR actions in eight out of nine studies. This finding indicates that market does not recognize CSR efforts but indeed punished them. Mixed results were observed in the studies of McGuire et al., (1988), and D’Arcimoles and Trebacq (2002). Neutral relationship (no significance) was found in the studies of Fauzi (2009), Mahoney and Roberts (2007), Goukasian and Whitney (2008) and Fogler and Nutt (1975). In the research of Fiori et al., (2009), no significant correlation was found between stock price and CSR parameters.

6. Corporate Social Responsibility in Greece: An emerging field

Many studies have explored the state of CSR in European countries. Italy, Spain, United Kingdom and Scandinavian countries have been of great interest in this field. CSR in Greece has not been of a popular research object in terms of quantitative characteristics. Although that CSR is generally at an early stage, there are a lot of Greek companies that make serious efforts as to be socially responsible and sustainable.

The first who tried to include CSR strategy were companies listed in the stock market. Due to the fact that the largest number of corporation in Greece is medium-small companies, the adoption of CSR is getting difficult. Panayiotou et al., (2009b) adopted this view after the results of their research. Findings show that there is a small number of companies which publish CSR reports. Moreover, size of company and sector seem to play important role in adopting CSR in Greek companies. Large international companies as well as companies that operate in financial, telecommunication and petroleum sector are subject to a higher degree of CSR. Based on a research by National and Kapodistrian University of Athens in 2006, the economic burden, the lack of information and the size of the enterprises prevent firms from incorporating CSR activities in their strategies (Metaxas and Tsavdaridou, 2010).

However, a change is observed on ethical standards and that is mainly caused by the establishment of multinational companies. According to the research of Kavali et al., (2001), the most influential role of the corporate ethics’ enhancement is government. Existing problems in Greek market are based on issues as gifts/entertainment, bribery, tax evasion practice, advertising, promotion and personnel. Multinationals and foreign companies, privatization schemes, high level of education of professionals and European Union legislation may have positive impact on ethical standards while low public concern, political corruption and no stringent legislation drove on low standards. In order to support firms to adopt CSR
strategy, the Hellenic Network for CSR was founded on 2000 (Hellenic Network for CSR).

It would be interesting understanding how CSR is perceived by managers in Greek firms. In the survey of Fafaliou et al., (2006) in Greek shipping companies, most managers perceive CSR as “health and safety”, “codes of conduct” and “environmental activities” while the main reasons for the implementation of CSR activities are the “improvement of employees’ job satisfaction”, “better relations with community and public authorities”, “improvement of customer loyalty”, “relations with partners and investors” and “expected economic performance”. Moreover, “improvement of employees’ job satisfaction”, “improvement of customer loyalty”, “raise of productivity”, “improved relations with partners and investors” and “owners’ satisfaction” consist the gains of a CSR action according to the managers’ perception. Based on the results of the above research, we can conclude that Greek companies try to be socially responsible and sustainable as to satisfy their stakeholders and achieve better economic and financial performance. The study of Bichta (2003) revealed that economic considerations and compliance with legal requirements are the main factors for Greek firms in order to be environmentally responsible. As a result, Greek firms seem to pay attention to a wide range of stakeholders in order to succeed a positive evaluation based on their CSR activities. One of the most important categories of stakeholders, during a difficult period of financial situation, is shareholders, who can evaluate a company from the market view.

Because of the fact that companies can communicate with their stakeholders through World Wide Web, Greek companies have started to disclose their CSR practices in their websites. However, the number of companies which do CSR reporting under proper and certain guidelines is significant smaller in comparison with the total number of companies which apply CSR policies. This is due to the fact that the largest number of Greek companies is medium-small sized. Guidelines as GRI and Sustainability Integrated Guidelines for Management are difficult to be adopted by small and medium-sized corporations because of their complexity and limited flexibility (Perrini and Tencati, 2006). A research in voluntary disclosure of social responsibility among companies listed in the Athens Stock Exchange showed that size is a significant positive factor (Leventis and Weetman, 2004). Nevertheless, GRI guidelines can be the prevailing framework for Greek companies (Panayiotou et al., 2009c).

Nowadays, there is a noticeable turn on CSR issues by a satisfying number of companies, as to achieve a greater market share, communicating their actions to a wide range of customers. The trend of environmental issues and green economy, which is constantly rising, forced many companies to incorporate CSR actions in their strategies. In this difficult financial period, firms try to improve their position in the CSR field, despite the fact that all variable costs are subjected to specific limitations, because of the decrease of their profitability.
The case of Greece seems to be interesting and of great interest to get researched. The reason is that in a country which does not have a CSR history in business world and in spite of the serious costs that a company has to deal with if it incorporates a CSR strategy, Greek companies present an overwhelming try to be social and environmental responsible. But which are the benefits of these practices in financial terms? Is there any positive evaluation by their shareholders? Can stock market recognize the effort of companies to be sustainable despite the fact CSR in Greece is at an emerging state?

7. Methodology

7.1 Hypothesis

Stakeholder theory is the basis in order to examine how stock market reacts if Greek companies undertake CSR practices. Shareholders are important stakeholders for the financial survival of a firm. Many researches have been undergone in order to reach a conclusion about whether there is a positive or negative effect. The above literature review proved that the relationship between CSR and firm’s performance is not clear. Based on our review and other authors’ review (Griffin and Mahon, 1997; Margolis and Walsh, 2003), we understand that the largest portion of studies show a positive relationship. According to the theory of “good management” (Waddock and Graves, 1997), we make the next hypothesis that we are going to examine:

\[ H_1: \text{Better CSP leads to higher financial performance} \]

This hypothesis must include some control variables. Based on the above theory and the model of Callan and Thomas (2009), our theoretical model will be:

\[ \text{CFP}_t = f(\text{CSP}_t, \text{X}) \]  (1)

where,
CFP\_t is a measure of firm’s financial performance,
CSP\_t is a measure of firm’s socially responsible performance,
X is a vector of control variables, which includes firm’s financial characteristics

Moreover we have to point out that we introduce a one-year lag between dependent and independent variables (Elsayed and Paton, 2005; Brammer and Pavelin, 2008; Mahoney and Roberts, 2007; Rodriguez and Cruz, 2007; Nelling and Webb, 2009).
7.2 Measuring financial performance

The dependent variable in this study is stock return as to measure the market value that companies gain or lose implementing CSR activities. As was mentioned in our literature review, measures of financial performance could be either accounting-based or market based. There are a lot of studies that used stock return as measure of financial performance (Nelling and Webb, 2009; Bhagat and Bolton, 2008; Brammer et al., 2006). Stock return is calculated as (Omran and Ragab, 2004; Brammer and Millington, 2008):

$$SR_i = \frac{P_{it} - P_{i(t-1)} + D_{it}}{P_{i(t-1)}}$$

where,

- $P_{it}$ is the price of stock $i$ at time $t$,
- $P_{i(t-1)}$ is the price of stock $i$ at time $t-1$, and
- $D_{it}$ is the dividends received between the period $t-1$ and $t$ for the firm $i$

7.3 Measuring corporate social responsibility

In order to measure CSR, because of the lack of data availability in Greek companies, we use the method of content analysis on CSR annual reports. So far, we have to point out that there are a lot of Greek companies, listed on Athens Stock Exchange, which undertake CSR activities but neither have disclosed them in annual reports nor have they disclosed them in reports under certified guidelines. This problem is also indicated by Panayiotou et al. (2009c), who support that some of Greek firms may present only their strengths and cover their weaknesses as most of them decide themselves what to report. As a result, and for the reasons of accuracy and reliability of data, as our main instrument of research, we choose annual reports under specific certified guidelines. Content analysis is defined as “a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding” (Montabon et al., 2007, pp.1002). This method was used by many authors in their studies (Montabon et al., 2007; Khan, 2010; Aras et al., 2010; Rolland and Bazzoni, 2009). According to Cochran and Wood (1984), content analysis is an objective procedure. We choose GRI as reporting guidelines in order to achieve greater reliability and accuracy. As we referred previously, companies may obtain higher stock returns if they apply GRI guidelines (Schadewitz and Niskala, 2010). Moreover, GRI guidelines have been used by a lot of researches, something that indicates GRI’s great acceptance. Based on GRI reports according to G3 guidelines, we tried to create a CSR index. Using the rating systems of Sutantoputra (2009) on social performance and Clarkson, et al., (2008) on environmental performance which were developed based on GRI reporting, we evaluate firms’ CSR performance. Social performance was evaluated by 16 indicators on policies and systems on social issues (Table 1). Environmental performance was evaluated by 10 indicators (Table 2). In order to achieve a proper...
scale score for our research, we followed the studies of Graves and Waddock (1994) and Fiori et al., (2009). All the above indicators were rated on a scale from 0 to 3. When a company does not take into account the specific indicator at all, it is rated with 0. A company is ranked with 1 or 2 depending on the broadness of the description (e.g. 1 if the company only names the indicator and 2 if there is a very poor description (e.g. if the company only names the variable without any or with an unclear description). The company is rated with 3 if it takes the indicator into consideration with a satisfying description. So, a total score for social performance could reach the maximum score of 48 and for environmental performance the score of 30. A compound CSR score for our analysis is created adding both score, giving a maximum of score of 78 for each company.

Table 1: List of social performance indicators

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<tr>
<th>Labour practices and decent work</th>
<th>Employment information</th>
<th>Strategy and management</th>
<th>Community</th>
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<tr>
<td>Labour/management relations</td>
<td>Strategy and management</td>
<td>Non-discrimination</td>
<td>Bribery and corruption</td>
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<td>Health and safety</td>
<td>Strategy and management</td>
<td>Child labour</td>
<td>Political contributions</td>
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<tr>
<td>Training and education</td>
<td>Strategy and management</td>
<td>Freedom of association and collective bargaining</td>
<td>Product responsibility</td>
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<tr>
<td>Diversity and opportunity</td>
<td>Strategy and management</td>
<td>Forced and compulsory</td>
<td>Respect for privacy</td>
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<th>RESPECT FOR PRIVACY</th>
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<tr>
<td>Products and services</td>
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<td>Customer health and safety</td>
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Table 2: List of environmental performance indicators

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<tr>
<th>Energy use efficiency</th>
<th>Toxics release inventory</th>
<th>Green house gas emissions</th>
<th>Environmental impacts of products and services</th>
<th>Compliance performance</th>
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<tbody>
<tr>
<td>Water use efficiency</td>
<td>Other discharges</td>
<td>Other air emissions</td>
<td>Land and resources use-biodiversity-conservation</td>
<td>Waste generation and management</td>
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7.4 Control variables

Based on our literature review, it is suggested that firm performance and CSR are affected by several factors. Waddock and Graves (1997) used firm size (total sales, total assets and number of employees), risk (long-term debt to total assets ratio) and industry as control variables. Size seems to play important role because, due to some evidence, small companies cannot adopt CSR activities in the same extent as large can do so. Brammer et al., 2006 used market capitalisation as to control form firms’ size. Risk may have significant impact on firm’s attitude against CSR because of savings, costs and market. Aras et al., (2010), Wahba (2008), Nelling and Webb (2009) and, D’Arcimoles and Trebucq (2002) used also the debt to total assets ratio to control for the riskiness of firm. Brammer et al., (2006) and Surroca et al., (2010) used firm’s CAPM beta as to control for firm’s risk. Furthermore, the kind of industry and its characteristics may create problems in exploring CSR actions (Waddock and Graves, 1997; Wahba, 2008). Moreover, because of the use of stock returns as dependent variable, Brammer et al., (2006) used also the previous year’s returns based on their review, adopting the idea that if a company do well over one year period, it will keep up its performance in short term. In our model, having stock returns as measure of financial performance, we used market capitalisation (CAP) to control for firm’s size, CAPM beta (BETA) to control for stock’s risk (systematic risk) and previous years’ returns (SR).

7.5 Sample

The initial sample of research was constituted by all the companies that are listed on the Athens Stock Exchange. The total number at the time we accessed the website of stock market (www.ase.gr, Accessed: 05/05/2010) was 281. After accessing their websites in order to get CSR reports based on GRI guidelines for two years, our sample is constituted by 39 companies. Our sample is quite representative due to the fact that our companies are part of great range in market capitalization and belong to different industry sectors. We preferred to include in our sample only companies which disclosed CSR reports for two years instead of companies which reported CSR information for one year only, although that in this case we would achieve a larger sample. The reason is that a shareholder could evaluate properly a company who implement CSR activities annually and in such case we prefer to include companies who tend to show significant progress throughout these two years examined.

7.6 Data

In order to evaluate CSR, we accessed firms’ CSR reports based on GRI guidelines for two years (2007 and 2008). Data for stock returns (prices and dividends) were obtained by Athens Stock Exchange (2007, 2008 and 2009). The source of data in order to calculate the rest financial variables (2007 and 2008) is Athens Stock Exchange and Hellastat.
7.7 Model

According to the above hypothesis and the selection of measures for dependent and independent variables, our econometric model (t=2008 and 2009) is:

\[ SR_t = b_0 + b_1 \text{CSRscore}_{t-1} + b_2 \text{CAP}_{t-1} + b_3 \text{BETA}_{t-1} + b_4 \text{SR}_{t-1} + u_t \]

where,

- \( SR_t \) is the stock return for the year \( t \)
- \( \text{CSRscore}_{t-1} \) is the index for CSR for the year \( t-1 \)
- \( \text{CAP}_{t-1} \) is the market capitalisation for the year \( t-1 \)
- \( \text{BETA}_{t-1} \) is the CAPM beta for the year \( t-1 \)
- \( \text{SR}_{t-1} \) is the stock return for the year \( t-1 \)
- \( u_t \) is a disturbance term

8. Results

8.1 Descriptive statistics

First of all, we are going to present the descriptive statistics for the variables of our model. Observing Table 3 from a qualitative view, the results show an increasing adoption of CSR actions by Greek companies. The mean of CSRscore has risen from 44.00 in 2007 to 53.77 in 2008. Furthermore, stock returns appear to have a significant increase during the two-year period. Specifically, during the year of 2008, negative returns (-0.593) are observed in this portfolio while positive ones are observed (0.276) in the year 2009. Table 4 presents summary statistics for our measures of financial performance, CSRscore and control variables. The variable \( SR \) ranges from -0.766 to 0.700. The minimum of CSRscore is 30 with a maximum value of 72 and a mean of 48.8846. Moreover, the wide range of CAP indicates that the size of sample companies varies in a great extent. Statistics are provided also for the ratio of CAPM beta (BETA) and stock returns of previous year. The mean of BETA, which almost gets the value of zero, shows that our stocks have no risk, their returns move regardless of market.

<table>
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<th>Table 3: Descriptive Statistics for CSRscore and StockReturn</th>
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<td>SR_09</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
</tbody>
</table>
Table 4: Descriptive Statistics for all model’s variables

<table>
<thead>
<tr>
<th></th>
<th>SR_t</th>
<th>CSRscore_{t-1}</th>
<th>CAP_{t-1}</th>
<th>BETA_{t-1}</th>
<th>SR_{t-1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-0.158833</td>
<td>48.8846</td>
<td>5.121.293.628.68</td>
<td>0.004231</td>
<td>-0.303193</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>0.5013384</td>
<td>9.83498</td>
<td>4.946.857.588.20</td>
<td>0.0065441</td>
<td>0.3141883</td>
</tr>
<tr>
<td>Minimum</td>
<td>-0.7665</td>
<td>30.00</td>
<td>20.147.976.05</td>
<td>-0.0120</td>
<td>-0.7665</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.7003</td>
<td>72.00</td>
<td>18.464.223.716.00</td>
<td>0.0270</td>
<td>0.1336</td>
</tr>
</tbody>
</table>

8.2 Correlation matrix and bivariate results

Table 5 presents the correlation matrix for the dependent and continuous independent variables. As can be seen, there is a very significant and positive relationship between SR and CSRscore (0.550) at p<0.01 two-tailed. This shows that CSR performance has a strong effect on stock returns. Moreover, there is an also strongly negative significance correlation between stock returns and market capitalisation (CAP) and between stock returns and stock returns of previous year, while no significant correlation was found between SR and and BETA. The idea that a stock which has a good performance in a specific time period, will continue to do so in short term, is inconsistent with our research’s results. However, CSRscore is negative correlated with SR of previous year (-0.455) at p<0.01 two-tailed and not significantly correlated with CAP and BETA. It is interesting to point out that despite the fact that there is no significance, market capitalization is positive correlated with CSR, which indicates that larger firms achieve higher CSR performance, as it is noticed in the literature review. Systematic risk (BETA) is not correlated significantly with any other variable but it is noticeable that has a negative relationship with CSR, which depicts that if a stock is inversely correlated with the market (negative values of beta), then the firm will expend more money for CSR actions.
**Table 5: Pearson Correlations Matrix**

<table>
<thead>
<tr>
<th></th>
<th>SR_t</th>
<th>CSRscore_{t-1}</th>
<th>CAP_{t-1}</th>
<th>BETA_{t-1}</th>
<th>SR_{t-1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR_t</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.550(***)</td>
<td>-0.289(*)</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.010</td>
<td>0.588</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>CSRscore_{t-1}</td>
<td>Pearson Correlation</td>
<td>0.550(***)</td>
<td>1</td>
<td>0.020</td>
<td>-0.074</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.865</td>
<td>0.521</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>CAP_{t-1}</td>
<td>Pearson Correlation</td>
<td>-0.289(*)</td>
<td>0.020</td>
<td>1</td>
<td>0.115</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.010</td>
<td>0.865</td>
<td>0.317</td>
<td>0.337</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>BETA_{t-1}</td>
<td>Pearson Correlation</td>
<td>0.062</td>
<td>-0.074</td>
<td>0.115</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.588</td>
<td>0.521</td>
<td>0.317</td>
<td>0.922</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>SR_{t-1}</td>
<td>Pearson Correlation</td>
<td>-0.825(***)</td>
<td>-0.455(***)</td>
<td>0.110</td>
<td>-0.011</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.000</td>
<td>0.000</td>
<td>0.337</td>
<td>0.922</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

**8.3 Regression Analysis**

To test the multivariate relationship between firm performance and corporate social responsibility, we also conducted regression analysis. Assessing the following matrix, we have to keep in mind that there is one year lag among the data of dependent (2009 and 2008) and independent variables (2008 and 2007). Useful conclusions can be extracted from the Tables 6 and 7 about our econometric model. The multiple correlation coefficient (R), using all predictors simultaneously, is 0.881. The model explains about 77 percent ($R^2 = 0.776$) of the variation on stock returns ranking. Moreover, the Standard Error of the Estimate is 0.2438572 which is lower than the standard deviation of SR, as it has to be. The model appears to be
statistically significant (p=0.000) and so, the independent variables predict significantly the dependent variable.

Table 6: Model Summary

<table>
<thead>
<tr>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.881</td>
<td>0.776</td>
<td>0.763</td>
<td>0.2438572</td>
<td>2.248</td>
</tr>
</tbody>
</table>

Table 7: Analysis of Variance (ANOVA)

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>15,012</td>
<td>4</td>
<td>3,753</td>
<td>63,112</td>
</tr>
<tr>
<td>Residual</td>
<td>4,341</td>
<td>73</td>
<td>0,059</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19,353</td>
<td>77</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8 presents the main results of OLS regression. The constant term is statistically significant and negative (-1.027). We found out that the coefficient of CSRscore is positive ($b_1=0.013$) and significant at the 1% level (p=0.003). This result confirms our main hypothesis and is consistent with the largest portion of studies in the literature that found out a positive relationship between CSR and financial performance and specifically between CSR and stock returns (Moskowitz, 1972; Nelling and Webb, 2009). The significance of the rest of control variables is consistent with the previous results of Pearson correlations. The coefficient of market capitalization is negative and significant (p=0.000). The coefficient of BETA is positive but not significant. Furthermore, the other control variable, SR of previous year appears to have negative and too significant relationship with SR (p=0.000).

Tests for normality of residuals and homoskedasticity of data were done and no serious problems were indicated. Also absence of autocorrelation is indicated as the value of Derbin-Watson (Table VI) is 2.248. We investigated multicollinearity problems by examining variance inflation factors (VIFs). According to Katos (2004), if VIF of a variable exceeds ten, then this variable is collinear to the others. Observing the VIFs for the three independent variables in the Table VI, we can
conclude that it is unlikely that multicollinearity influence our regression results, since the range of VIFs is varied from 1.024 to 1.290. This conclusion is also supported by the coefficients of tolerance.

Table 8: Regression Results

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>Tolerance</td>
<td>VIF</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.027</td>
<td>0.151</td>
<td>-6.817</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>CSRscore_{t-1}</td>
<td>0.013</td>
<td>0.003</td>
<td>0.250</td>
<td>3.989</td>
<td>0.000</td>
</tr>
<tr>
<td>CAP_{t-1}</td>
<td>-2.33E-011</td>
<td>0.000</td>
<td>-0.230</td>
<td>-4.076</td>
<td>0.000</td>
</tr>
<tr>
<td>BETA_{t-1}</td>
<td>7.713</td>
<td>4.354</td>
<td>0.099</td>
<td>1.771</td>
<td>0.081</td>
</tr>
<tr>
<td>SR_{t-1}</td>
<td>-1.093</td>
<td>0.100</td>
<td>-0.685</td>
<td>-10.879</td>
<td>0.000</td>
</tr>
</tbody>
</table>

9. Conclusion, implications and further research

Our study is an attempt to explore the relationship of CSR and firms’ financial performance in Greek firms. Based on stakeholder theory and mainly on the theory of “good management”, we try to find out if an improvement in CSR actions results in higher stock returns. The evaluation of CSR performance is held using the method of content analysis of sustainability reports according to GRI guidelines and performance indicators. A compound CSRscore is so generated and constitutes our main independent variable. Control variables (market capitalization for controlling size, CAPM beta for controlling risk and stock return of previous year) are added in our model. Data are obtained for two-year period using one year lag. The results of our research are consistent with the larger portion of studies. A positive and significant relationship among stock returns and CSR is found. Our econometric model appears to be statistically significant and its results show that a company which adopts CSR strategy could be evaluated positively by the market and its stakeholders. This result interprets that a Greek company which adopts CSR strategy and practices may obtain higher stock values due to the fact that stakeholders (shareholders) evaluate positively these activities. This generalisation is based on the fact that our sample companies are of a wide variety on market capitalization and that they represent different kinds of industry.
The method of measuring CSR on a specific kind of CSR reporting is something to confront in order to achieve even more objective results. We suggest another way of measuring CSR or the use of content analysis in websites reporting in a larger sample, achieving greater reliability. Accounting-based variables could be used instead of stock returns. Finally, a wider time period of analysis could provide more secure results.

This study compiles a prime effort to set some standards on the relation between corporate social responsibility and firm performance especially given the fact that this market constitutes a “Greek labyrinth” for those involved in gathering as well as evaluating the CSR data. This research hides the academic ambition to be used as a guide for further examination and research on the relationship between CSR and Greek companies. Last but not least, in operational level, these results aim at persuading managers to implement CSR actions in a greater extent to enhance firm market efficiency and at a larger outcome scale to improve the CSR state in Greece. In spite of the costs that may occur, adopting CSR strategy, companies may obtain higher stock returns and satisfy the needs of their stakeholders.

References