Corporate reputation: A combination of multidimensional domains of social performance and industry level effect.

1. Introduction

It is undisputed that corporate social responsibility (CSR) has achieved a prominent place in management practice and in the academic arena. When confronted as a potential means – in its most precious form of an intangible hard-to-copy asset – to the end of improved corporate reputation, CSR has triggered vast interest and publicity from practitioners to scholars.

Since Milton Friedman's "provocative" article in 1970 (Friedman, 1970), numerous studies have tried to disprove (the majority) or prove him right. Research effort on CSR and reputation has been both conceptual (Carroll, 1979; Donaldson and Preston, 1995; Freeman, 1984; Gardberg and Fombrun, 2006; Hart, 1995; Jones, 1995; Mitchell et al.; 1997; Wartick and Chochran, 1985) and empirical (Griffin and Mahon, 1997; Fombrun and Shanley, 1990; Hillman and Keim, 2001; McGuire et al., 1988; Roberts and Dowling, 2003; Waddock and Graves, 1997).

To date, evidence that CSR impacts on business results – whether its through reputation building, financial performance or other means – has been labelled as equivocal (Berman et al., 2006; Schnietz and Epstein, 2005), contradictory (Griffin and Mahon, 1997) and inconclusive (Backhaus et al., 2002; Hillman and Keim, 2001; Porter and Kramer, 2006). This lack of a consensus can be originated in the fact that CSR has emerged in the management literature very recently (Lantos, 2001; McWilliams et al., 2006; Windsor, 2006) and/or that research has been badly designed (Bird et al., 2007; Brown and Perry, 1994; Orlitzky and Benjamin, 2001; Rowley and Berman, 2000; Schnietz and Epstein, 2005).

Our work aims at addressing the misspecifications on research design to develop a framework on reputation, highlighting the valuable role of CSR in reputation building. We propose a model remedying five potential sources of research flaws.

First, we regard reputation as the consequence of CSR. There is very little empirical work studying the effects of CSR on reputation (for exceptions see Brammer and Pavelin, 2006; Turban and Greening, 1997). In some related studies, the construct of CSR doesn't encompass its multidimensional nature (Fombrun and Shanley, 1990; Roberts and Dowling, 2002). Most usually, perceptual reputation – either as overall reputation or specifically reputation for social responsibility – is used as a measure of CSR (Griffin and Mahon, 1997 – in this case combined with others; McGuire et al., 1988; Schnietz and Epstein, 2005; Stanwick and Stanwick, 1998). In either case, the measure is perceptual and there are indications that the overall reputation is highly correlated with reputation for social responsibility (Griffin and Mahon, 1997). Our work considers reputation and CSR as separate and independent constructs (Harrison and Freeman, 1999; Turban and Greening, 1997; Ruf et al., 1998). We argue that, in an econometric or conceptual model, CSR is a significant variable impacting positively on reputation. In this sense, CSR can only perform its role of competitive advantage creation (Roberts and Dowling, 2002; Russo and Fouts, 1997) once it is fully embedded on the corporate reputation.

Second, we present CSR as a strategic business function. We will appraise the rationale of contrasting views of the use of CSR: activists, results-oriented and sceptics. Our argumentation is based on the compatibility of engagement in social responsibility under contrasting views of the firm, ranging from its notion of purely social to a purely economic entity. In line with McWilliams and Siegel (2006) we contend that there is an ideal level of CSR to each firm. This level of engagement depends on specific requirements from the

competitive environment of the firm (industry to which it belongs) and must be addressed accordingly, through actions and policies targeted on particular dimensions of CSR.

Thirdly, CSR is deconstructed in its structural parts. We are consistent with Bird et al. (2007) and Rowley and Berman (2000) that considered inadequate and misleading to gather in one single measure attributes that are fundamentally independent. Accordingly, CSR is viewed as a multidimensional construct including: employee relations, diversity issues, product issues, community relations, and environmental issues.

Fourth, we build on recent research in reputation and CSR that views the industry level effects as a determinant of corporate behaviour and performance (Brammer and Pavelin, 2005; Gardberg and Fombrun, 2006; McWilliams and Siegel, 2000; Porter and Kramer, 2002).

Fifth, we have built our model taking into consideration the most relevant control variables raised from previous empirical studies that influence reputation and CSR. We have estimated this model using panel data technique which controls for the corporations' heterogeneity in reputation and CSR rationale; and enables a multidimensional combination of cross-section and time-series relations. Our sample comprises 320 public listed American corporations with data from the period of 2003 to 2007. The model has been gradually estimated as follows: 1) CSR is used as an aggregate measure without taking into consideration industry effects; 2) CSR is broken down into five parts still with no industry effect consideration; 3) We introduce dummies for industry effects on the aggregate measure of CSR; 4) And finally we estimate the model interacting the five constructs of CSR and dummies of industry sectors.

In Table I we present previous empirical studies that included some kind of measure of reputation and CSR either as a dependent or independent variable.

TABLE I

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2. Theory and hypothesis

2.1. Reputation as a consequence of CSR engagement

There is little controversy that reputation is a precious intangible asset (Branco and Rodrigues, 2006; Fombrun and Riel, 1997). Reputation is viewed as a solution for asymmetric information regarding firms. When faced with lack of information on a product or on a firm's initiative, stakeholders rely on the firm's reputation to judge its products or its intentions (Schnietz and Epstein, 2005).

The collective information that stakeholders screen in face of uncertainty was called "cumulative judgments" by Fombrun and Shanley (1990). They argue that reputation works as a signal to the public that constantly reminds them of the firm's key characteristics. It also serves as a guarantee (Sabate and Puente, 2003.b.). Given that the public scan and choose a firm based on its past behaviour and action, it is expected that the same firm behaves and acts accordingly (Fombrun and Riel, 1997). The suggestion of reputation as a source of competitive advantage lies on the ability of the firm to behave and act consistent not only with their past performances but also with the public expectations.

The benefits driven by accrued positive reputation represent a potential path to sustained competitive advantage (Black et al., 2000; Branco and Rodrigues, 2003; Fan, 2005; Fombrun and Shanley, 1990; Orlitzky et al., 2003). Given its nature, reputation is observed in its intangible form (Brown, 1997; Gardberg and Fombrun, 2006; Roberts and Dowling, 2002), which is the most valuable, considering it is hard-to-duplicate/imitate (Drejer, 2000).

The notion that a good reputation is rewarded by stakeholders have been analysed under different angles. Sabate and Puente (2003.a.) focused on a generalized view, arguing

about the attractiveness of good reputation by "resource holders". They would be drawn not only by the past information embedded on a reputation, but also for the warranty this represents in a future transaction.

A more specific relationship is the one with customers and employees. Focus on customer benefits assume that they value being associated with "high-reputation" firms (Berman et al., 1999; McGuire et al., 1988; Roberts and Dowling, 2002). Reputation can also serve as a magnet to attract and retain talent. Corporations that are known for having human resource practices oriented at employees' well-being can at the same time, improve its ability to recruit (Schnietz and Epstein, 2005; Turban and Greening, 1997), improve employees' moral and productivity (Backhaus et al., 2002; McWilliams and Siegel, 2001; Stanwick and Stanwick, 1998; Waddock and Graves, 1997), lower turnover and absenteeism (Berman et al., 1999) and have a more compliant work force (Frankental, 2001), working harder or for a lower remuneration (Branco and Rodrigues, 2002).

These two areas – employee relation and product – are considered to be within the spectrum of the CSR concept. We propose that reputation is a consequence of a variety of management practices and behaviour; and that CSR engagement – proposed as a multidimensional construct – is the most effective of these practices in building a sustainable competitive advantage. One of the main theses of our work is that strategic CSR leads to good reputation (Brammer and Pavelin, 2006; Turban and Greening, 1997).

Reputation is used by many companies to justify CSR initiatives on the grounds that they will improve a company's image and strengthen its brand (Porter and Kramer, 2006). We argue therefore, that CSR's remarks on competitive advantage are also valid for reputation, since a good reputation would be, in a large part, a result of active engagement in CSR.

2.2. Corporate social responsibility: contrasting views and state of the question

There is a vast literature supporting CSR as a source of competitive advantage (Berrone et al., 2007; Gardberg and Fombrun, 2006; Jones, 1995; McGuire et al., 1988; Porter and Kramer, 2006; Russo and Fouts, 1997). According to McWilliams and Siegel (2001), support of CSR initiatives leads to the perception that a firm is reliable and honest.

In view of the premise that CSR is a significant determinant of reputation, it is appropriate to bring about the background on the concept of CSR. As it was introduced earlier, debate on CSR's effectiveness in improving business performance is far from over. Empirical evidence hasn't provided (yet – in our opinion) conclusive evidence for either view, although the balance weights heavier to the side of the 'for-CSR'.

Critique of social responsibility has been centred on the lack of evidence that it impacts positively on business performance (Backhaus et al., 2002; Berman et al., 2006, Griffin and Mahon, 1997) and on Friedman's claim that shareholder is the one and only stakeholder (Cuesta-Gonzáles et al., 2006; Friedman, 1970; Moneva and Ortas, 2008; Quazi and O'Brien; 2000). Since we argued that the lack of evidence may be resolved with a more robust research design, we focus on the critiques derived from the neoclassic or economic view of the firm (Bowen, 2007; Windsor, 2006)

Friedman's (1970) arguments against CSR target three main areas: political legitimacy, managerial self-interest and business sense-making. Regarding legitimacy, he argued that governmental functions – "imposition of taxes and the expenditure of tax proceeds" - were exclusive responsibilities of governments. Commenting on this assertion, Jones (1999) maintains that management would have no right to act in any other way which isn't related to increasing shareholder value, as it would 'constitute a violation of management's legal, moral and fiduciary responsibilities'. Most authors build on this similar viewpoint, which regards CSR 'expenditures', in rough words, as a waste of shareholder's money (Joyner and Payne, 2002; McWilliams and Siegel, 2001; Moneva and Ortas, 2008).

The question of political legitimacy seems to be more related to the managers' decision to invest or not invest – in CSR – than to a deeper intellectual assertion of a conflict of business/government role in society or the invisible hand leading individual interest's quest into public good (Moir, 2001). There is an interesting branch of study that focuses specifically on self-interest and discretionary issues of corporate managers leading to agency problems (Berman et al., 2006; Frankforter et al., 2000; Jones, 1995; McWilliams et al., 2006; Prior et al., 2006). The main argument of this viewpoint is that managers can engage in social responsibility simply as a means of promoting themselves, by an egoistic motivation to increase their own wellbeing, as opposed to that of the corporation (Handelman and Arnold, 1999).

In terms of business sense-making, Friedman (1996) stated that once corporations 'played by the rules of the game', the only social responsibility they would have was 'to use its resources and to engage in activities designed to increase its profit'. Under this reasoning, companies engaging in CSR would be harming themselves, because they would be incurring in costs that its competitors wouldn't be (Quazi and O'Brien, 2000; McGuire et al., 1988; Waddock and Graves, 1997; Windsor, 2006); and society as a whole, since it would be diverting resources from the activities it performs better – wealth and profit creation – to one that they are not prepared to manage (Cannon, 1994; Shaw and Barry, 1992). The followers of the classical view of the firm justify its profit-seeking behaviour with the conviction that the economic nature of the firm surpasses its social status (Wilson, 2000).

Under the light of evidence that investing in social issues can bring benefit to shareholders, the CSR "deniers", would have no problem in supporting CSR (Jones et al., 2007). Companies turn into honest, ethical and CSR activists because they expect a return from this behaviour (Jones, 1995). This is pure business sense-making as contended by Friedman (1996).

Engagement in CSR initiatives and investment has been thoroughly analyzed since the 1970s (see Carroll, 1979). In the 1980s – more specifically after the publication of Edward Freeman's seminal book disseminating the term stakeholders (Freeman, 1984) – CSR has become an important branch of management study (Harrison and Freeman, 1999). The concept of stakeholder theory and in subsequent years, the addition of the instrumental component (Donaldson and Preston, 1995), provided practioneers and scholars with a scientific framework in which CSR could be practiced, theorized and in which it could evolve.

The instrumental stakeholder theory came as a consequence of the recognition of the implicit social contract between business and society. The social contract recognizes business and society as equal partners (Lantos, 2001; Porter and Kramer, 2006). The realization that stakeholders affect a firm's objectives in the same way that the firm's performance is affected by stakeholders (Berman et al., 1999; Brammer and Millington, 2008; Handelman and Arnold, 1999; Joyner and Payne, 2002; Mitchell et al., 1997) might mistakenly be interpreted as an ordinary common sense, but this is in fact, the deeper foundation of this theory. The instrumental part of the theory deals with the ways in which the corporation can manage its relationship with its various stakeholders and in the design of a strategy wherein this relationship can ultimately benefit business performance (Backhaus et al., 2006; Berman et al., 2006; Donaldson and Preston, 1995; Jones, 1995).

Under the lights of an instrumental approach, the social contract legitimizes the quest of a reward for good behaviour and for being attentive to stakeholders. It then discards as good management, actions solely based on altruistic intention (Lantos, 2001; Saiia et al., 2003). Philanthropy is a good example that demonstrates the premise of reward. It can only be justified if it is strategically used to improve business performance (Buchholtz et al., 1999).

The concept of an 'enlighted self-interest' (Chryssides and Kaler, 1996; Porter and Kramer, 2006) is a central principle of the theory.

Instrumental stakeholder theory is mainly concerned in assessing key stakeholders' interests and ways in which corporations can benefit from taking notice and acting on their interests (Donaldson and Preston, 2005). The underpinning point of the strategic use of CSR is that there is no trade-off between investing in CSR and investing in business efficiency (McGuire et al., 1988; Quazi and O'Brien, 2000; Orlitzky et al., 2003). The trade-off will be between competing stakeholders (Buchholtz et al.; 1999; Jones et al.; 2007; Scholtens and Zhou, 2008; Shepard et al., 1997). Establishing who the key stakeholders are, therefore, is as important as designing strategies to address their concerns.

Stakeholders were originally defined as "those who are affected by and/or affect the achievement of the firm's objectives" (Freeman, 1984). In an attempt to be more specific, Mitchell et al. (1997) developed a model to better identify and grade stakeholders based on their possession of three attributes: power, legitimacy and urgency. The level of priority allocated to each stakeholder, hence, is determined by its 'salience', or in other words, it will depend on the combination of the attributes of power, legitimacy and urgency that they control (Surroca and Tribó, 2008).

The main critique of the stakeholder theory is precisely the permeable boundaries amongst legitimate stakeholders (Bird et al., 2007). To address this, many authors also base their studies on the resource-based view of the firm (Berman et al., 1999; Hillman and Keim, 2001; McWilliams and Siegel, 2001; Roberts and Dowling, 1997; Russo and Fouts, 1997). The underlying premise of the resource based view is similar to the stakeholder theory, it concords with the concept of stakeholder and that meeting their demands is crucial to business performance (Wieland, 2005). The focus of this perspective, however, is that competitive advantage based on CSR will be achieved through the fit between the firm's resources,

capabilities and internal competitive advantages (Bowen, 2007; McWilliams et al., 2006), as opposed to a thorough analysis of the natural environment surrounding the firm (Hart, 1995).

The key points in the operationalization of CSR are its voluntary nature and its ultimate goal of improving business performance. Whether the reasoning comes from the implicit social contract, resource-based view or business pragmatism, the fact is that CSR engagement is assumed to have a positive relationship with corporate financial performance (Berman et al., 1999; Berrone et al., 2007; Brammer and Millington, 2008; Brown and Dacin, 1997; Lantos, 2001; Orlitzky et al., 2003; Porter and Kramer, 2002; Roberts and Dowling, 2002; Turban and Greening, 1997; Udayasankar, 2008).

Hypothesis 1: Corporate social performance has a positive impact on corporate reputation.

Rewards from CSR are not automatic, nonetheless. As it was pointed out before, CSR will not be turned into a competitive advantage easily. If it were so, it wouldn't be a competitive advantage. First and foremost, CSR has a long-term effect (Bird et al., 2007; Branco and Rodrigues, 2006; Lantos, 2001); secondly, it has to be embedded within the corporation's strategy (Galan, 2006; Hull and Rothemberg, 2008; McWilliams et al., 2006; Valor, 2005) and into corporate principles and practices (Gardiner et al., 2003). Because of its amplitude, CSR – in order to function at its full potential – needs to harmonized within the organization's structure and culture (Agle et al., 1999; Brock, 2005; Cramer, 2005; Jones et al., 2007).

2.3. Multidimensionality of the CSR construct

As it was discussed in the previous section, the multitude of stakeholders poses a challenge for corporations to identify and to address those that are the most salient. Even by adopting the power, legitimacy and urgency analysis, corporations may still have a collection of very diverse stakeholders with divergent and competing interests at times (Scholtens and

Zhou, 2008). In this context, the correct measurement of CSR is crucial to stakeholder management.

We propose that the use of an aggregate construct of CSR is misleading to research (if its objective is to develop a general model with CSR as the independent variable). Social responsibility is essentially of multidimensional nature and this multidimensionality is compromised once unrelated thematic areas are gathered in one single construct. Some authors have deconstructed CSR under primary stakeholder domain and social issues (Agle et al., 1999; Mattingly and Berman, 2006 – adds government; Hillman and Keim, 2001; Backhaus et al., 2002, Waddock and Graves 1997). The former would include issues considered strategic: employee relations, diversity issues, product issues, community relations, and environmental issues; and the latter focus on altruistic components: human rights, alcohol/tobacco/gambling exclusionary screens, military exclusionary screens, nuclear power exclusionary screens, and non-U.S. concerns over investment in Burma and Mexico (Hillman and Keim, 2001).

Given that our aim is to develop a generalized model of corporate reputation, our CSR measure will be broken down into the five primary stakeholder domain issues, as recommended by Harrison and Freeman (1999) and Waddock and Graves (1997). By analyzing the issues separately, we intend to capture the specific influence of each on reputation. This is in line with previous research that targeted these individual stakeholder dimensions in the same model (Bird et al., 2007; Brammer and Pavelin, 2006; Scholtens and Zhou, 2008; Turban and Greening, 1997). Other authors commented on specific CSR domains, without necessarily including all in the model, like product issues (Berman et al., 1999; Jones, 1999; McWilliams and Siegel, 2001), environment (Hart, 1995; Russo and Fouts, 1997) and community issues – philanthropy in particular (Buchholtz, 1999; Carroll, 1991; Saiia et al., 2003).

Hypothesis 2: When corporate social performance is broken down into five thematic constructs, the impacts of these constructs on corporate reputation do not, individually, follow the same pattern of behaviour as the aggregate measure.

Under the light of these assumptions, we expect that the five CSR dimensions will impact on reputation in different magnitudes, ranging from negative, neutral, positive and significantly positive.

2.4. Influence of industry effects on CSR and reputation

Another critical issue in estimating a model on corporate reputation based on CSR and related control variables is the industry level effect. We build on previous works that identified the level of CSR (Brammer and Pavelin, 2005; Jones, 1999; McWilliams et al., 2006; Sabate and Puente, 2003.b.; Waddock and Graves, 1997) and financial performance (Berrone et al., 2007; Buchholtz et al., 1999; Griffin and Mahon, 1997; Roberts and Dowling, 2002; Schnietz and Epstein, 2005) to be highly influenced by the industry in which the corporation is primarily identified. Although it is unclear the extent to which the sector impacts on CSR or profitability ratios, there seems to be a consensus that it is significantly high to justify controlling it in a model (McWilliams and Siegel, 2000).

Authors (Griffin and Mahon, 1997; Sabate and Puente, 2003.b.) argue that results from models that don't control for industry – large cross-sectional studies – disguise or mask structural industrial contexts, as the patterns of measurement between CSR and financial performance and reputation vary significantly within sectors.

In view of these arguments, we contend that the impact of CSR on corporation reputation will be contingent upon the sector to which a corporation belongs.

Hypothesis 3: When industrial sector is introduced as a control variable, corporate social performance's impact on corporate reputation,

as a multidimensional construct, will not follow a similar pattern
of behaviour amongst the industrial sectors.

Industrial sectors are subject to specific and localized pressures from different stakeholders. Brammer and Pavelin (2006) found that industry acts as a mediating player between reputation and CSR as each sector would have 'industry-specific stakeholder pressures' and the response on CSR strategy would have to be targeted in view of that and not broadly.

Analyzing the specific effect of industrial sector on philanthropy, Porter and Kramer (2002) found that those that are prone to public controversy – he cited as an example the petrochemicals and pharmaceuticals – tend to have a keener attitude towards corporate giving. Jones (1999) focused on the public visibility and the degree of governmental scrutiny that some industries are subjected to. He expected primary sector industries to be more concerned with environmental issues; the secondary sector with employees, suppliers, customers, the environment and communities; and the tertiary sector with employees and consumers.

The case of governmental intervention is interesting because it portrays a situation in which firms from specific sectors can forestall change in public policy and anticipate government regulation on product specificities or environmental controls (Berman et al., 1999; Jones, 1999; McWilliams et al., 2006; Quazi, 2003; Windsor, 2006).

Analyzing the influence of three particular areas of CSR in twelve industrial sectors, Brammer and Pavelin (2006) found that there is an ideal 'fit' between the CSR domain and the industry to which a corporation is primarily identified, as the relationship between CSR and reputation is subject to significant cross-sector variation. They found that environmental performance tends to have a negative impact on reputation in eight sectors, but not in the chemicals, consumer products, resources and transportation sectors; employee performance, for instance, only influenced reputation on the resources sector; and finally community

performance was found to be the most significant measure, impacting positively on reputation in eleven sectors and negatively in the resources sector.

Hypothesis 4: Interaction between the five disaggregated constructs of corporate social performance and industrial sector provides distinctive combinations of the impact of individual constructs and industrial sector on corporate reputation.

3. Methods

3.1. Sample and sources of data

Our sample consisted of 320 listed American companies with data collected from the period of 2003 to 2007. We have specified two models. Model 01 comprised 1.293 firm-years observations and Model 02, 1.120 firm-years.

The data for reputation measurement came from Fortune's annual "Most admired companies" survey. The fortune measure is by far the widest used reputation index (Black et al., 2000; Griffin and Mahon, 1997; Fombrun and Shanley, 1990; Fombrun and Riel, 1997; McGuire et al., 1988; McMillan and Joshi, 1997; Roberts and Dowling, 2002; Turban and Greening, 1997). Fortune's reputation index consists of an overall measure calculated out of an eight dimensions survey. It is compiled annually by Fortune magazine and the rate is based on questionnaire respondents from the corporations themselves. In order to maintain data consistency, respondents rate firms from their own sectors, which assure an informative perceptual result.

Although there is evidence of high correlation amongst the eight dimensions that compose the overall index (Brown, 1997; Brown and Perry, 1994; Carpraro and Srivastava, 1997; Fombrun and Shanley, 1990), fortune's rates remain the best regarded reputation construct in empirical research (Sabate and Puente, 2003.b.) and by practioneers.

Corporate social responsibility data was extracted from KLD (Kinder, Lydenberg and Domini) database. KLD is a reliable source for CSR measures and has been broadly used by

previous research (Backhaus et al., 2002; Cuesta-Gonzáles et al., 2006; Griffin and Mahon, 1997; Hillman and Keim, 2001; Hull and Rothemberg, 2008; Mattingly and Berman, 2006; Ruf et al., 1998; Schnietz and Epstein, 2005; Scholtens and Zhou, 2008; Turban and Greening, 1997; Waddock and Graves, 1997).

Amongst the earliest research tools available (Márquez and Fombrun, 2005), KLD benefits from being a company exclusively dedicated to collecting and assessing CSR with an independent rating service, assuring consistency in data collection and analysis (Harrison and Freeman, 1999; Waddock and Graves, 1997). KLD comprises numerical assessments on the social responsibility qualitative issues' areas of: community, corporate governance, diversity of work force, employee relations, environment, human rights and product issues. It has a separate segment for controversial business issues for alcohol, gambling, tobacco, military, firearms and nuclear power. For the first set of dimensions, there is a subset of items regarded as strengths and concerns. The rating is a binary system, where 1 indicates the presence of this item and 0 its absence.

Previous researches have adapted this rating system for their own objectives. We follow the majority of studies (Backhaus et al., 2002; Berman et. al, 1999; Cuesta-Gonzáles et al., 2006; Griffin and Mahon, 1997; Hull and Rothemberg, 2008; Ruf et al., 1998; Turban and Greening, 1997; Waddock and Graves, 1997) that scaled the results from 'strong concern' -2 to 'strong strength' +2. Considering that we are taking as a premise that CSR is of strategic managerial value in its potential do generate a competitive advantage, our prime objective is on the variables that are related to primary stakeholder concerns.

We follow Agle et al. (1999), Backhaus et al. (2002), Hillman and Keim (2001) and Waddock and Graves (1997), that considered these items to be community relations, diversity of the work force, employee relations, environmental and product issues. All strengths were added and subtracted to the concerns of each dimension. Since we are interacting CSR with

industry, generating '1' and '0' dummies to control for industry effects, we have adapted the Likert-type scale to +1 to +5, instead of -2 to +2. This avoids miss calculations between the 0 scores of CSR and the 0 from the dummies. The aggregate measure of CSR is an average of all five qualitative areas, also scaled from 1 to 5.

Data from the control variables, with the exception of charitable donations which is also extracted from KLD database, are provided by Thompson's Datastream.

3.2. Control variables

The primary control variable in our model is *financial performance*. There are a large number of researchers that investigate financial performance under the lights of CSR (Berman et al., 1999; Brammer and Millington, 2008; Griffin and Mahon, 1997; McGuire et al., 1988; Orlitzky et al., 2003) and corporate reputation (Black et al., 2000; Fombrun and Shanley, 1990; McMillan and Joshi, 1997; Roberts and Dowling, 2002; Sabate and Puente, 2003.b.). Authors differ between using an accounting or marketing based performance measure. For the former, the majority of studies use return on assets (ROA) to capture financial performance (Berman et al., 1999; Berrone et al., 2007; Deephouse and Ourso, 1997; Griffin and Mahon; Hillman and Keim, 2001; Russo and Fouts, 1997; Turban and Greening, 1997); whereas market value added (Berrone et al., 2007; Hillman and Keim, 2001; McGuire et al., 1988; Roberts and Dowling, 1997), market to book value (Black et al., 2000; Roberts and Dowling, 2002) and market to book ratio (Bird et al., 2007; Fombrun and Shanley, 1990) are the constructs commonly used to measure marketing based performance. Due to data availability, we are using market to book ratio as the measure of market based performance.

Considering that our objective is to provide a generalized model, we have included both ROA and market-to-book ratio as a measure of financial performance, in line with authors that have used both accounting and market based measures (Berrone et al., 2007;

Black et al., 2000; Fombrun and Shanley, 1990; Hillman and Keim, 2001; Orlitzky et al., 2003; Roberts and Dowling, 2002).

As it was pointed out in the introduction, although a high number of studies were considered inconclusive, we expect a positive relationship between corporate reputation and financial performance. We anticipate this, based on the flaws in research design that we have addressed and previous empirical findings of a positive relationship directly with corporate reputation (Brammer and Pavelin, 2006; Fombrun and Shanley, 1990; Roberts and Dowling, 2002) or indirectly via CSR (Hillman and Keim, 2001; Orlitzky et al., 2003; Rowley and Berman, 2000; Russo and Fouts, 1997). The reason for this positive relation may be that superior performing corporations are better evaluated by the public through the perception that the above-average results may be a result of good management (Roberts and Dowling, 2002).

Alternatively, and in line with our argumentation that reputation is a consequence of CSR, it can be argued that a successful financial performance leads to a stock of 'slack resources' (Buchholtz et al., 1999; Orlitzky et al., 2003; Waddock and Graves, 1997) that, under an instrumental stakeholder approach, can be used strategically to increase the firm's social performance; thus improving its reputation.

The *size of the company* is customarily used in a majority of reputation/CSR research, either as a control or as an independent variable. It has been measured by total assets (Griffin and Mahon, 1997; Hillman and Keim, 2001; Hull and Rothenberg, 1998; Saiia et al., 2003; Turban and Greening, 1997) or total sales, (Roberts and Dowling, 2002; Schnietz and Epstein, 2005; Stanwick and Stanwick, 1998) depending on the research's objectives. We have used the natural logarithm of total assets. The evidence suggests that there is a positive relation between size and reputation (Brammer and Pavelin, 2006; Fombrun and Shanley, 1990). Udayasankar (2008) and Waddock and Graves (1997) argued that the reason for a positive

relation between size and CSR is the high visibility of larger firms. They would engage in CSR because of the increased public attention they received derived from its size and reach of operations.

Risk is another variable widely controlled for in reputation and CSR models. Measures of risk also encompass market – with β (beta) as the usual indicator (Hillman and Keim, 2001; Black et al., 2000; Fombrun and Shanley, 1990; Orlitzky and Benjamin, 2001; Srivastava et al., 1997) – and accounting based, most commonly represented by the ratio of total debt to total assets (Bird et al., 2007; Schnietz and Epstein, 2005; Waddock and Graves, 1997). Under the same rationale of financial performance, we have used both measures in our model, in line with Brammer and Pavelin (2006) and McGuire et al. (1988). We expect a negative relation between risk and reputation, based on the combined analysis which is usually made both for accounting and market purposes (Fombrun and Shanley, 1990). Positive financial performance is linked to low risk and vice-versa.

Recent research has also been controlling for the level of *research and development (R&D)* investment (Berrone et al., 2007; Brammer and Pavelin, 2006; Brammer and Millington, 2008; Hull and Rothemberg, 2008; Schnietz and Epstein, 2005). Consistent with McWilliams and Siegel (2000) that found a positive relation between R&D and CSR, through the indirect impact of the latter on reputation, we expect R&D to impact positively on reputation. The underlying notion in terms of R&D influencing reputation is that firms' stakeholders judge the quality of its products as a sign of good reputation, particularly those related to technological advancements (Brammer and Pavelin, 2006; Fombrun and Shanley, 1990). This variable has been measured as a proxy of R&D expenses to total sales (McWilliams and Siegel, 2000; Schnietz and Epstein, 2005) and total assets (Berrone et al., 2007; Brammer and Millington, 2008). Considering that total assets was used to measure the size of the company, we will also use it to calculate the proxy of R&D.

Advertising intensity is believed to influence reputation and CSR in a combination with R&D (Brammer and Pavelin, 2006; Hull and Rothemberg, 2008; McWilliams and Siegel, 2000). Advertising will be in charge of raising awareness of specific product qualities and features. It can also play a role in increasing the visibility of the firm, thus improving its reputation through the argument presented for the size of the company. The bigger or more visible, the more susceptible corporations will be to public scrutiny and the more encouraged it will be to engage in strategic CSR, hence improving reputation. Berrone et al. (2007) proposed a model in which a corporate identity is composed by two aspects. One deals with its policies and actions and the other, which they call 'corporate revealed ethics', comprises the communication strategy of the company. Under this approach, advertising is a critical function as it will be responsible to communicate CSR policies and actions to its stakeholders, which wouldn't be aware, otherwise.

Advertising intensity was previously calculated in function of the total revenue of the company (Fombrun and Shanley, 1990; Hull and Rothemberg, 2008; McWilliams and Siegel, 200). Because our data on advertising expenditures was limited to the one hundred leading spenders in advertising, in line with Brammer and Pavelin (2006), we have constructed a dummy variable on the basis of the presence of this company in two thematic lists, '100 leading national advertisers' and the 'most valuable brands'. Both lists are available on line (Advertising Age, 2009; Interbrand, 2009). The first list is compiled by TNS media intelligence and is published annually by the Advertising Age magazine. The second list is elaborated by the consultancy firm Interbrand and is published annually by the Financial Times. The Interbrand publication has been previously used in CSR research by Fehle et al., 2008; Madden et al., 2006 and Sotorrio and Sanchez, 2008.

Charity donation is not normally used as an independent variable neither for CSR or reputation models (see exceptions in Fombrun and Shanley, 1990; Griffin and Mahon, 1997).

This is mainly because its measurement is already included in the aggregated construct of CSR (Brammer and Pavelin, 2005) or the individual dimension of community relations in the KLD database for example. Considering the extensive research and managerial importance dedicated to charitable donations, we will use it as a control variable for exploratory purposes. Regarded to be at the top of the CSR pyramid (Carroll, 1991), corporate philanthropy has shifted from its original altruistic stance to a more strategic standpoint (Buchholtz et al., 1999). When strategically used, as well as impacting positively on CSR perception and reputation (Fombrun and Shanley, 1990), philanthropy can improve the quality of the business external environment of the firm (Porter and Kramer, 2002).

We expect charity giving – assuming that it is performed instrumentally (Saiia et al., 2003) – to be positively related to reputation. The measure of charitable donation was extracted from the domain of community relations of the KLD database, 'charitable giving'. We will reproduce the dummy variable as assessed by KLD, 1 if 'the company has consistently given over 1.5% of trailing three-year net earnings before taxes (NEBT) to charity'; or 0 otherwise.

The dummy variables for the industrial sector were constructed based on the Data Stream industry classification – INDC3. The industries assigned were: Basic industries, cyclical consumer goods, cyclical services, general industries, information technology, non-cyclical consumer goods, non-cyclical services, resource, financial and utilities. See the Appendix I for a detailed explanation of each sector and the distribution of our sample within those sectors.

Our reputation model was designed taking into consideration three structural issues: the technique to estimate the model, long-term nature of effects on reputation and causal relationship. Regarding the technique, we have estimated our model using panel data. Panel data addresses calls for cross-sectional Vs time-series on reputation analysis (Berman et al.,

1999; Fombrun and Shanley, 1990); and controls the unobserved heterogeneity potentially observed in each corporation's strategic conceptual use of CSR or specifically among top management (Agle et al., 1999; Surroca and Tribó, 2008). Assuming the long term effect of CSR (Bird et al., 2007; Branco and Rodrigues, 2006; Lantos, 2001; Sabate and Puente, 2003.b.) and related control variables on reputation, we have estimated two models for each hypothesis, one with no lag on reputation and the other with one year lag on the independent variables. Regarding endogeneity, in Model 02, the lag of one year eliminates this possibility automatically; and for Model 01, this is partially assured by the timing of the Fortune research. We relate the reputation score of the current year with the data from control variables of the precedent year, as the lists are usually released in March every year.

4. Results

Our models were initially specified using the fixed effect estimator. We carried out a Hausman test that indicated correlation between individual effects and independent variables and in the light of this, the fixed effect is best suited than the between effects. As well as the individual effects added to control for the cross reference units, we have also included time dummies in our model. With these temporal effects we reduce a source of bias by capturing events that all states were subjected to in a given year. An *F* test of significance was performed to assert the joint significance of the temporal dummies and the result was that they contribute to the model's overall significance.

We have also applied the Wooldridge and Modified Wald tests to examine potential autocorrelation in our panel and heteroskedasticity problems in our fixed effect equation. In both cases the result was positive. Consistent with Beck and Katz (1995), we have corrected both problems using the panel corrected standard errors through a Prais-Winsten regression.

In the Appendix II we present results of Hausman tests, significance of time dummies, autocorrelation and heteroskedasticity on Model 02 (results for Model 01 are similar).

In Table I we present descriptive statistics and a correlation matrix for Model 02 (results for Model 01 are similar). Results indicate that reputation is positively correlated with ROA, market-to-book ratio, firm size, advertising intensity, corporate social performance, diversity of work force and employee relations; and negatively correlated with beta and company risk. This was predicted by the literature. We had also expected R&D intensity, charity, community relations, product issues and environmental issues to be positively related to reputation, which didn't occur.

We have run a total of fourteen regressions to estimate our model of corporate reputation. The models were estimated in an order that we expected it would culminate with the most suitable combination of variables. The first set of estimations encompassed regressions I, II and III. In these specifications, we: I) assumed that CSR is the same in all sectors, so the model included an aggregated construct for CSR and omitted industrial dummies; II) included dummies for industrial sectors, which permitted CSR to vary across sectors; III) estimated the model letting the aggregated CSR construct interact with the industrial dummies, allowing the reputational effect to be combined and vary across the industrial sectors. These results are presented in Table II.

For the second set of regressions, which encompasses specifications IV, V and VI, we deconstructed CSR into five qualitative areas. The models were estimated as follows: IV) five dimensions of CSR; V) five dimensions of CSR and nine sectoral dummies; VI) five dimensions of CSR, nine sectoral dummies and the most statically significant set of interactions between the CSR dimensions and the sectoral dummies. For estimation VI we followed a similar procedure than that of Brammer and Pavelin (2006). Because the interactions raised the parameters to be estimated (45 to be exact), we took on a refinement

process to remain only with those variables that returned significant coefficients at least at 90% of confidence. This process resulted with 14 interactions for Model 01, with 13 of them being significant; and 26 for Model 02, with 24 significant. Regression results are available in Tables III and IV.

TABLE II

4.1. Selecting the most suitable model

Out of the twelve specifications presented, the variables market to book ratio, firm size and beta were consistently significant in all regressions. The first two, positively associated with reputation and the third, negatively. We regard as not significant the variables ROA, risk, advertising intensity and charity - albeit they were found to be significant at 90% of confidence: negative in three estimations for the first, negative in one estimation for the second, and positive in one estimation for the third.

TABLE III
TABLE IV

As financial performance and risk were measured using both accounting and market-based indicators, the significant coefficients of market to book and beta support our contention that they have a positive and negative impact on reputation, respectively. These two results, together with size of the firm are consistent with Black et al. (2000) and Fombrun and Shanley (1990). The beta's negative impact is also in line with Brammer and Pavelin (2006). And Roberts and Dowling (2002) also found the same results for size and market to book.

The results for the variable R&D intensity are considered inconclusive. Their coefficients were significantly negative in the first specifications of the regressions, when

there were no dummies for industrial sectors. Once those dummies were introduced, the coefficients remained negative but lost significance.

Overall, our estimations behaved as predicted. Unfortunately, we can not choose the best specification solely based on the R-squares of the regressions. Since we are using the panel corrected standard errors and they are of asymptotic nature (Beck and Katz, 1995) we discard them as a basis of comparing the robustness amongst the six specifications. Alternatively, we employ a joint method of analyzing the robustness of each regression and estimate the models using OLS and fixed effect regressions, simply as a means of analyzing the behavioural patterns of their R-squares. Table VI presents those results.

TABLE V
TABLE VI

Our analysis indicates that the Model 02 of Specification VI is the best suited corporate reputation model (see Table V). Specification VI has the highest R-square of OLS and fixed effect for both models as well as the highest and second highest R-square from the panel corrected regression, for Models 01 and 02, respectively. The model 02 is more fit than model 01 as it has a higher number of significant interactions in specification VI, 24 Vs 13. Additionally, model 02 presents no issues of endogeneity, as the reputation scores refer to the independent variables of the previous year; whereas Model 01 might be subjected to some degree of causality, since the timing of the Fortune research might not allow respondents to fully appreciate or perceive upon interpretations of information embodied by the independent variables.

4.2. Interpreting the results

The consistent increase of the R-squares and the significant coefficients that arise as we estimated the model from I) use of an aggregated measure of CSR without regard to

industry level to VI) the five qualitative areas interacting with sectoral dummies, support our assertion that CSR is intrinsically of a multidimensional nature and varies across sectors.

The results fully supported our four hypotheses. CSR, when played as an aggregate measure, had a strong positive correlation with reputation (p=0.000) and within specification I, with no industrial dummies; and in II, with the dummies but without the interactions, also impacted positively on reputation (p=0.005 and p=0.010, respectively) – Table III. As the interactions were added, the aggregate construct lost its significance.

Once we broke down CSR in five dimensions, two of those dimensions didn't provide significant impacts (community relations and diversity), two had a positive impact (product issues, p=0.000 and employee relations, p=0.003) and one had a negative impact (environmental issues, p=0.003) – Specification V of Table IV. As we introduced the dummies of industries, as opposed to our predictions, those impacts were maintained. As we performed the interactions between the five dimensions and the nine industrial sectors (the sector of utilities was omitted), the sign and magnitude of the impact of the dimensions on the model varied drastically – Table V.

Our final hypothesis was that when the five disaggregated constructs of CSR and the industrial dummies interacted it would produce a set of relationships that wouldn't had been resembled in the previous models. We performed these interactions in the specification VI (Table V), which is the most suitable explanatory model of corporate reputation. Its results support our hypothesis. Although individually, the sectoral dummies behaved as in the other specifications, their interaction with the CSR dimensions provided quite unique insights on the influence of multidimensional CSR moderated by industrial level effect.

First and foremost, all five dimensions, individually, returned significant coefficients at least at the 95% level of confidence. Employee relations and product issues maintained its positive impact from the previous regression (p=0.019 and p=0.002, respectively); and

community relations and diversity added to environmental issues, with a negative impact on reputation (p=0.008, p=0.001 and p=0.004, respectively). When interacted with the industries, the areas of product issues and diversity resulted as significative in eight of the nine possible interactions. Diversity's interactions were all positive, whereas product issues interacted positively with general industries, information technology, non-cyclical consumer goods, non-cyclical services and resources; and negatively with basic industries, cyclical consumer goods and cyclical services.

Coefficients from all other interactions had positive signs, from which we highlight those that were significative for community relations: basic industries, cyclical and non-cyclical consumer goods and cyclical and non-cyclical services; environmental issues: cyclical consumer goods and resource; and employee relations: general industries.

5. Discussion and conclusion

Our first realization with the empirical results was that our findings are in line with those works that concluded that financial performance and risk impact positively and negatively on reputation, respectively (Black et al., 2000; Brammer and Pavelin, 2006; Fombrun and Shanley, 1990; Turban and Greening, 1997). We were initially puzzled however, that the market based indicators of market to book and beta were considerably more relevant than those accounting based, Roa and Debt/Asset. In fact, the accounting based measures were only significant when the market-based were omitted. This is a very interesting finding as it builds on the awareness that the respondents of the Fortune magazine regard market-based performance as significantly more relevant to their perception of reputation than the accounting-based ones.

The timing of this finding – considering the research was carried with data from 2003 to 2007 – shreds light on the run up to the economic crisis. This particular result could offer

support to those critics that place part of the blame for the crisis on the equity market – whether as a basis for executive compensation or as the incentive for risk taking.

The results of the interactions were also in part unexpected. Although Brammer and Pavelin (2006) had been one of the only researches that applied a similar technique, nonetheless, we had previous expectations of behaviours of industries. The interactions of the environmental issues area was the one that most resembled Brammer and Pavelin, as the variable itself had a negative sign, but it interacted positively with resource and cyclical consumer goods in our study, whereas in Brammer and Pavelin's it did so with chemicals, consumer products, resources and transportation. This is also in line with Jones (1999). The industry of cyclical consumer goods (automobile and parts, clothing, textile, households and appliances, see Appendix I for details) was the most salient sector, with interactions with all but employee relations – although in the original estimation (see Appendix II) it did have a significant relation; followed by cyclical services (retailers, leisure and entertainment and media amongst others), non-cyclical consumer goods (beverage and food companies, pharmaceuticals and tobacco, amongst others) and basic industries (chemistry and construction amongst others), with significant interactions with community relations, product issues and diversity.

Our work builds on the effort to support the prominent role of CSR in keeping a sustainable business performance. This role, combined with the reputation of the company, can trigger the emergence of an intangible hard-to-duplicate competitive advantage. We pinpointed the problems of conceptualization of CSR and misspecifications in empirical research as intrinsic flaws in the investigation paradigm in the area. We addressed the first with a robust background analysis of the theory and the second with a research design founded on the principle of CSR multidimensionality and industrial sector role as moderator of the relationship between CSR and reputation.

We employed a thorough panel data technique on a set of 320 American listed corporations, from 2003 to 2007, what constituted a panel with 1.120 of firm-observations. We found conclusive evidence indicating that CSR is better assessed and as a consequence practiced, taking into account its multidimensional nature, which in our case was represented by five qualitative areas. Furthermore, we found that industrial sector determines the tendencies to good or bad reputation that each of those areas are prone to. This is critical to practitioners that have struggled to identify salient stakeholders. Our model indicates that CSR varies systematically across sectors and there is indeed a best combination of CSR strategy, considering its five dimensions, to each firm, based on its primary business activity.

Future research on the impact of CSR on reputation or directly on business performance should assume the multidimensionality of CSR and the moderating effect of industry as a core premise of research design in the area. Exploratory, empirical research could attempt to breakdown each of the five qualitative areas in its constituent parts and analyze the individual effect of a set of parts of one dimension in a cross-section panel, or constituent parts of all dimensions in a specific industry.

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APPENDIX

APPENDIX I

APPENDIX II

APPENDIX III

APPENDIX IV

TABLE I – <u>Previous empirical studies based on reputation and or corporate social performance</u>

Authors	Dependent variable and source of measure	Independent variable and source of measure	Treatment of industry effects	Control variables
Agle et al. (1999)	Stakeholder salience	*CSP 5 dimensions aggregated + dimensions individually – KLD database	Normalized Roa to industry level	Roa
Backhaus et al. (2002)	Company's attractiveness as employer (qualitative research)	CSP 5 dimensions aggregated + dimensions individually – KLD		
Berman et al. (1999)	Financial performance (ROA)	CSP 5 dimensions individually – KLD	Normalized environmental variables	Roa, selling intensity, capital int., environmental-structural variables
Berrone et al. (2007)	Financial performance (then inverts with independent)	CSP as aggregate measure (then inverts with dependent) – Osiris database	Controlled for industry and adds sector dummies	Roa, mva, size (sales), risk (beta), R&D, marketing controversies
Bird et al. (2007)	Financial performance (market returns)	CSP 5 dimensions individually – KLD		Risk, market-to-book ratio, leverage (debt/assets)
Black et al. (2000)	**Reputation (aggregate measure) – Fortune "Most admired companies"	Market value of equity		Roa, size (sales), risk (beta), market-to-book value, sales growth
Brammer and Millington (2008)	Financial performance	CSP measured by charity donations		Size, R&D, advertising
Brammer and Pavelin (2006)	Reputation (aggregate measure) – Management Today research	CSP 5 dimensions aggregated + dimensions individually – Osiris	Added dummies for industries	Roa, size (assets), risk (debt/assets), advertising, R&D, institutional ownership
Brown (2007)	Financial performance	***CSP as reputation for CSR – Fortune		
Buchholtz et al. (1999)	Philanthropy	Roa, size	Added one dummy to control industry difference	Roa, size (sales)
Fombrun and Shanley (1990)	Reputation (aggregate measure) – Fortune	CSP measured by charity foundation – Taft database	Normalized variables to sector averages (2 digit SIC codes)	Roa, size, (sales), risk (beta), advertising, inst. ownership, visibility, diversification, market-to-book ratio
Griffin and Mahon (1997)	Financial performance	CSP measured by: reputation as aggregate measure, CSR aggregate measure, philanthropy and pollution indexes –	Used one industry	Roa, size (assets)

		Fortune, KLD and Taft		
Hillman and Keim (2001)	Financial performance (MVA)	CSP 5 dimensions aggregated and individually + 3 dimensions as social issues – KLD	Added dummy for industry (2 digit SIC codes)	Roa, mva, size (sales), risk (beta), roe
Hull and Rothemberg (2008)	Financial performance	CSP measured by the aggregate of 8 dimensions – KLD	Added dummy for industry (SIC code)	Roa, size (assets), risk (debt/assets), R&D
McGuire et al. (1988)	CSP (aggregate measure of reputation) – Fortune	Financial performance		Roa, size (assets), risk (beta and debt/assets), alpha, sales growth, return
Roberts and Dowling (1997)	Superior performance	Reputation (aggregate measure) – Fortune	Adjust to industry's mean	Mva, size
Roberts and Dowling (2002)	Superior performance	Reputation (aggregate measure) – Fortune	Normalized variables to industry level	Roa, size (sales) , market-to-book value
Russo and Fouts (1997)	Financial performance (ROA)	Environmental performance	Moderated by industry growth	Roa, size (sales), advertising, firm growth, capital intensity
Schnietz and Epstein (2005)	Superior returns	CSP as reputation for CSR and presence in the Domini index – Fortune, KLD	Added a dummy for belonging to a responsible industry	Roa, size (sales), risk (debt/assets), advertising, R&D, internationalization
Scholtens and Zhou (2008)	Financial return / risk	CSP 8 dimensions individually presence in the Domini index – KLD		
Srivastava et al. (1997)	Reputation (aggregate measure) – Fortune	Risk		Risk (beta)
Stanwick and Stanwick (1998)	CSP (aggregate measure of reputation) – Fortune	Environmental performance, size and roa – Toxic release inventory		Roa, size
Turban and Greening (1997)	Reputation and attractiveness as an employer (qualitative measures) – Fortune	CSP 5 dimensions individually – KLD		Roa, size (assets)
Waddock and Graves (1997)	Financial performance (then inverts with independent)	CSP 5 dimensions aggregated (then inverts with dependent) – KLD	Added dummy for industry (SIC code)	Roa, size (sales and assets), risk (debt/assets), ros, roe, no employees

*5 dimensions of CSP are usually: community, environment, diversity issues, employee relations and product issues.

**Aggregate measure of reputation means that the final construct is a combination of several sub-constructs.

***CSP as reputation for CSR means that CSR is measured by one of the sub-constructs of the overall measure of reputation

Table II – Descriptive statistics and correlation matrix for Model 02

	Variable	mean	st. dev	min.	max.	Correlation matrix													
						1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Reputation	6.24	1.05	1.56	9.04	-													
2	Roa	8.09	5.91	-25.46	47.48	0.196 a	-												
3	Maket-to-book ratio	2.31	1.86	-17.66	15.02	0.248 a	0.528 a	-											
4	Risk	0.23	0.15	0.00	0.83	-0.074 b	-0.249 a	-0.413 a	-										
5	Beta	1.13	0.48	0.13	2.87	-0.198 a	-0.117 a	0.184 a	0.036	-									
6	Firm size	16.06	1.34	12.73	20.49	0.285 a	-0.026	0.075 b	0.133 a	-0.096 a	-								
7	R&D intensity	0.03	0.03	0.00	0.20	-0.010	0.093 a	0.221 a	0.228 a	0.001	0.047	-							
8	Charity	0.03	0.17	0.00	1.00	-0.002	0.038	0.013 b	0.013	0.015	0.012	0.036	-						
9	Advertising intensity	0.18	0.38	0.00	1.00	0.194 a	0.166 a	0.288 a	0.067 b	-0.171 a	0.334 a	0.132 a	0.022	-					
10	CSP	2.96	0.38	2.00	5.00	0.139 a	0.117 a	0.155 a	-0.139 a	-0.027	-0.021	0.226 a	0.028	0.208 a	-				
11	COM	2.89	0.36	2.00	4.00	0.024	0.086 a	0.155 a	-0.114 a	0.042	-0.120 a	0.091 a	0.008	0.204 a	0.428 a	-			
12	PRO	2.92	0.49	1.00	4.00	0.032	0.077 a	0.067	-0.109 a	0.135 a	-0.283 a	0.006	0.008	-0.100 a	0.368 a	0.131 a	-		
13	DIV	2.74	0.70	1.00	5.00	0.162 a	0.005	0.114 a	-0.015	-0.123 a	0.419 a	0.213 a	-0.028	0.377 a	0.396 a	0.122 a	-0.100 a	-	
14	ENV	2.21	0.53	1.00	4.00	-0.032	0.009	0.010	0.073 b	-0.013	0.183 a	0.160 a	0.014	0.089 a	0.161 a	0.012 a	0.060 b	0.203 a	-
15	EMP	2.70	0.61	1.00	5.00	0.121 a	0.111 a	0.141 a	-0.142 a	- 0.011	0.086 a	0.248 a	0.054	0.093 a	0.364 a	-0.016	0.073 b	0.122 a	0.137 a

[a] and [b] indicate that the correlation coefficient is significantly different from zero at a 95% and 99% level of confidence respectively.

Some units of measurement: 4: ratio of total debt to total assets; 6: natural logarithm of total assets; 7: ratio of R&D expenditures to total assets; 8: dummy indicating if firm is notably generous in giving; 9: dummy indicating presence or not of firm in publications of top 100 brands or top 100 advertisers; 10: corporate social performance; 11: community relations; 12: product issues; 13: diversity; 14: environmental issues; 15: employee relations.

Table III – Regression results for the first set of regressions

Variable	Specifications:	I				II				III			
		Model 01		Model 02		Model 01		Model 02		Model 01		Model 02	
Wald chi2		43,963.62	***	220.82	***	396.98	***	41,661.39	***	5,206.04	***	356.16	***
R2		0.631		0.625		0.627		0.637		0.642		0.636	
Constant		dropped		2.340	***	1.186	**	dropped		dropped		0.397	
Roa		-0.008		0.007		-0.009		0.007		-0.010	*	0.006	
Market-to-book		0.110	***	0.091	***	0.120	***	0.098	***	0.119	***	0.098	***
Risk		-0.385	*	-0.378		-0.380		-0.389		-0.367		-0.355	
Beta		-0.280	***	-0.275	***	-0.436	***	-0.435	***	-0.434	***	-0.429	***
Firm size		0.206	***	0.222	***	0.265	***	0.287	***	0.257	***	0.286	***
R&D intensity		-1.955	**	-3.318	***	-0.643		-1.809		-0.796		-1.605	
Charity		0.093		-0.082		0.095		-0.063		0.086		-0.063	
Advert intensity		0.142	*	0.127		0.099		0.065		0.059		0.069	
Industry													
Basis industries						1.282	***	1.321	***	1.357	***	1.307	***
Cyclical consumer goods						1.268	***	1.309	***	1.306	***	1.279	***
Cyclical services						0.948	***	0.990	***	0.990	***	0.954	***
General industrials						0.942	***	0.896	***	0.988	***	0.868	***
Information technology						0.633	***	0.594	**	0.654	***	0.651	**
Non-cyclical consumer goods						0.773	***	0.816	***	0.861	***	0.803	***
Non-cyclical services						0.951	***	0.997	***	0.979	***	0.974	***
Resource						0.712	***	0.635	***	0.886	***	0.676	***
Financial						1.015	***	1.124	***	1.065	***	1.062	***
Corporate social performance		0.058		0.232	***	0.069		0.209	**	-0.113		0.285	
→ Basis industries										0.536	***	0.086	
→ Cyclical consumer goods										0.391	*	-0.122	
→ Cyclical services										0.035		-0.441	
→ General industrials										0.448		-0.121	
→ Information technology										0.326	*	-0.433	
→ Non-cyclical consumer goods										0.610	***	0.256	
→ Non-cyclical services										0.096		-0.071	
→ Resource										0.639	***	0.254	
→ Financial										dropped		0.513	

In regressions II and III, the omitted industrial dummy is "utilities".

*, **, *** denote significance at the 90%, 95% and 99% level of confidence, respectively.

→ indicates interaction between corporate social performance and the specific industrial dummy in the line

† Degrees of freedom for specifications I, II and III were 12, 20 and 30, respectively.

Table IV – Regression results for the second set of regressions (except Spec. VI of Model 02)

Variable	Specification: IV		V		VI
	Model 01	Model 02	Model 01	Model 02	Model 01
Wald chi2†	44,128.490 ***	36,147.940 ***	51,332.240 ***	41,945.070 ***	56,479.010 ***
R2	0.642	0.646	0.641	0.658	0.657
Constant	dropped	dropped	dropped	dropped	
Roa	-0.008	0.007	-0.009 *	0.007	-0.009 *
Market-to-book	0.105 ***	0.085 ***	0.114 ***	0.092 ***	0.114 ***
Risk	-0.321	-0.970	-0.379	-0.382	-0.175
Beta	-0.306 ***	-0.302 ***	-0.438 ***	-0.437 ***	-0.429 ***
Firm size	0.220 ***	0.241 ***	0.273 ***	0.300 ***	0.288 ***
R&D intensity	-2.174 **	-3.093 ***	-0.682	-0.567	-0.950
Charity	0.087	-0.082	0.091	-0.067	0.078
Advert intensity	0.119	0.149	0.079	0.091	0.058
Industry					
Basis industries			1.209 ***	1.229 ***	1.311 ***
Cyclical consumer goods			1.192 ***	1.216 ***	1.440 ***
Cyclical services			0.875 ***	0.893 ***	1.017 ***
General industrials			0.852 ***	0.806 ***	1.074 ***
Information technology			0.494 **	0.445 *	0.739 ***
Non-cyclical consumer goods			0.737 ***	0.750	0.930 ***
Non-cyclical services			0.955 ***	1.010	1.025 ***
Resource			0.631 ***	0.500 **	1.014 ***
Financial			0.890 ***	0.943 ***	1.072 ***
Community relations	*0.089*	*0.037*	*0.045*	*-0.016*	*-0.085*
→ Non-cyclical consumer goods					0.539 **
→ Non-cyclical services					2.753 ***
Product issues	*0.174* ***	*0.224* ***	*0.171* ***	*0.217* ***	*0.134* **
→ Cyclical consumer goods					0.441 **
→ Non-cyclical services					-0.524 **
Diversity	*0.018*	*0.027*	*0.033*	*0.036*	*0.102* *
→ Basis industries					-0.214 *
→ Information technology					-0.234 *
→ Non-cyclical services					-0.595 ***
Enviromental issues	*-0.031*	*-0.173* ***	*-0.019*	*-0.138* ***	*-0.038*
→ Cyclical consumer goods					0.647 ***
→ Resource					0.324 *
Employee relations	*0.076* *	*0.135* ***	*0.092* **	*0.151* ***	*-0.057*
→ Basis industries					0.263 **
→ Cyclical consumer goods					0.287 *
→ General industrials					0.209 *
→ Information technology					0.246 *
→ *Non-cyclical consumer goods*					*0.115*
→ Resource					0.276 *

In regressions V and VI, the omitted industrial dummy is "utilities".
Temporal dummies 2003 to 2007 in Model 01 and 2004 to 2007 were also estimated, albeit not shown on results.
*, **, *** denote significance at the 90%, 95% and 99% level of confidence, respectively.
→ indicates interaction between corporate social performance and the specific industrial dummy in the line
† Degrees of freedom for specifications IV, V and VI (Model 01) were 17, 26 and 42

Table V – Regression results of Model 02 for Specification VI

Variable	Cœfficient		Variable	Coefficient	
Wald chi2 (54)	51,021.380				
R2	0.647				
Constant	dropped		*Product issues*	*0.966*	***
Roa	0.008		→ Basis industries	-0.884	**
Market-to-book	0.081	***	→ Cyclical consumer goods	-0.616	*
Risk	-0.178		→ Cyclical services	-0.710	**
Beta	-0.451	***	→ General industrials	0.811	**
Firm size	0.321	***	→ Information technology	0.839	**
R&D intensity	-1.904		→ Non-cyclical consumer goods	0.780	**
Charity	-0.128		→ Non-cyclical services	1.430	***
Advert intensity	0.040		→ Resource	0.643	*
Industry			*Diversity*	*-0.533*	***
Basis industries	1.262	***	→ Basis industries	0.610	***
Cyclical consumer goods	1.156	***	→ Cyclical consumer goods	0.407	*
Cyclical services	0.929	***	→ Cyclical services	0.595	***
General industrials	0.893	***	→ General industrials	0.584	***
Information technology	0.516	**	→ Information technology	0.488	**
Non-cyclical consumer goods	0.783	***	→ Non-cyclical consumer goods	0.717	***
Non-cyclical services	1.010	***	→ Resource	0.593	**
Resource	0.675	**	→ Financial	0.799	**
Financial	0.966	***	*Enviromental issues*	*-0.158*	***
Community relations	*-0.793*	**	→ Cyclical consumer goods	1.075	***
→ Basis industries	0.823	**	→ Resource	0.354	*
→ Cyclical consumer goods	0.629	*	*Employee relations*	*0.126*	**
→ Cyclical services	0.826	**	→ General industrials	0.184	*
→ *Information technology*	*0.350*		→ *Information technology*	*0.309*	
→ Non-cyclical consumer goods	1.025	***			
→ Non-cyclical services	3.713	***			

The omitted industrial dummy is "utilities".
Temporal dummies 2004 to 2007 were also estimated, albeit not shown on results.
*, **, *** denote significance at the 90%, 95% and 99% level of confidence, respectively.
→ indicates interaction between corporate social performance and the specific industrial dummy in the line

Table VI – R-squares obtained from estimating the specifications using OLS and fixed effect

Specification/ Model	I		II		III		IV		V		VI	
	01	02	01	02	01	02	01	02	01	02	01	02
OLS	0.252	0.205	0.255	0.220	0.306	0.273	0.312	0.287	0.314	0.241	0.350	0.334
Fixed-effect	0.145	0.132	0.146	0.140	0.145	0.132	0.146	0.140	0.154	0.160	0.172	0.182
Prais-Winsten	0.631	0.625	0.627	0.637	0.642	0.636	0.642	0.646	0.641	0.658	0.657	0.647

APPENDIX

I. Breakdown of corporations per industry and data-stream industry code breakdown

Industry	Model 01	Model 02
Basic Industries	186	158
Cyclical consumer goods	106	92
Cyclical services	294	255
General industrials	157	139
Information technology	144	122
Non-cyclical consumer goods	215	189
Non-cyclical services	38	31
Resource	88	76
Financial	22	19
Utilities	43	39
TOTAL OBSERVATIONS	1293	1120

- ➢ Basic industries (BASIC): chemicals, building & construction materials, forestry, paper and steel companies;
- ➢ Cyclical consumer goods (CYCGD): automobile and parts, clothing and footwear, textiles, households and appliances, furnishing and floor coverings;
- ➢ Cyclical services (CYSER): retailers, leisure and entertainment, media and photography, support services and transport;
- ➢ General industries (GENIN): aerospace and defence industries, electrical equipment, engineering and machinery companies;
- ➢ Information technology (ITECH): Information technologies, information technology and hardware, software and computer services;
- ➢ Non-cyclical consumer goods (NCYCG): beverage companies, food processor and farming, health maintenance organizations, hospital management, medial equipment, household products, personal products, pharmaceuticals, biotechnology and tobacco;
- ➢ Non-cyclical services (NCYSER): food and drug retailers, telecom fixed line, telecom wireless;
- ➢ Resources (RESOR): Oil and gas services, exploration and production, gold mining, other mineral extractor;
- ➢ Financials (TOTLF): Banks, Insurance, Investment companies and real estate;
- ➢ Utilities (UTILS): gas distribution and water

II. Statistical tests for estimations of Model 02 (one year lag on reputation)

Models	Hausman Test**		Time Effect		Wooldridge test for autocorrelation		Modified Wald test for groupwise heteroskedasticity	
	Contrast	Result	Contrast	Result	Contrast	Result	Contrast	Result
2.I.	chi-sq(11)	43.881*	chi2(3)	53.15*	F(1,269)	41.031*	chi2(320)	5.2E+31*
2.II.	chi-sq(15)	43.473*	chi2(4)	63.63*	F(1,269)	42.716*	chi2(320)	1.5E+32*
2.II.	chi-sq(11)	48.315*	chi2(4)	53.05*	F(1,269)	41.031*	chi2(320)	5.2E+31*
2.IV.	chi-sq(15)	50.101*	chi2(4)	56.08*	F(1,269)	42.716*	chi2(320)	1.5E+32*
2.V.	chi2(19)	1797.16*	chi2(3)	54.91*	F(1,269)	40.019*	chi2(320)	6.8E+32*
2.VI.	chi2(56)	101.14*	chi2(4)	56.18*	F(1,269)	42.348*	chi2(320)	5.9E+32*

* denote significance at the 99% level of confidence. * when contrast is performed by chi-sq, it indicates that the chi2 from Hausman was negative and the Sargan-Hansen statistic was performed instead.

III. Regression results with five dimensions of CSP and full interaction – Model 01

Variable	Coefficient		Variable	Coefficient	
Wald chi2(67)	739.080	***			
R2	0.648				
Constant	3.620	***	*Diversity*	*0.072*	
Roa	-0.009	*	→ Basic industries	-0.185	
Market-to-book	0.113	***	→ Cyclical consumer goods	-0.076	
Risk	-0.211		→ Cyclical services	0.072	
Beta	-0.438	***	→ General industrials	-0.039	
Firm size	0.294	***	→ Information technology	-0.217	
R&D intensity	-0.713		→ Non-cyclical consumer goods	0.044	
Charity	0.059		→ Non-cyclical services	-0.560	*
Advert intensity	0.063		→ Resource	0.246	
Industry			→ Financial	0.005	
Basis industries	1.744	***	*Enviromental Issues*	*-0.056*	
Cyclical consumer goods	1.844	***	→ Basic industries	-0.101	
Cyclical services	1.490	***	→ Cyclical consumer goods	0.694	***
General industrials	1.509	***	→ Cyclical services	-0.224	
Information technology	1.152	***	→ General industrials	0.180	
Non-cyclical consumer goods	1.389	***	→ Information technology	0.330	
Non-cyclical services	1.504	***	→ Non-cyclical consumer goods	-0.176	
Resource	1.628	***	→ Non-cyclical services	dropped	
Financial	1.491	***	→ Resource	0.365	**
Community relations	*-0.483*		→ Financial	dropped	
→ Basic industries	0.444		*Employee relations*	*-0.390*	*
→ Cyclical consumer goods	0.406		→ Basic industries	0.593	***
→ Cyclical services	0.488		→ Cyclical consumer goods	0.641	***
→ General industrials	0.556		→ Cyclical services	0.396	*
→ Information technology	0.227		→ General industrials	0.572	***
→ Non-cyclical consumer goods	0.906	**	→ Information technology	0.561	**
→ Non-cyclical services	3.173	***	→ Non-cyclical consumer goods	0.439	*
→ Resource	0.484		→ Non-cyclical services	0.397	
→ Financial	dropped		→ Resource	0.620	**
Product issues	*-0.062*		→ Financial	0.198	
→ Basic industries	0.213				
→ Cyclical consumer goods	0.624				
→ Cyclical services	0.225				
→ General industrials	0.175				
→ Information technology	-0.050				
→ Non-cyclical consumer goods	0.313				
→ Non-cyclical services	-0.340				
→ Resource	0.135				
→ Financial	dropped				

The omitted industrial dummy is "utilities".
Temporal dummies 2003 to 2007 in Model 01 and 2004 to 2007 were also estimated, albeit not shown on results.
*, **, *** denote significance at the 90%, 95% and 99% level of confidence, respectively.
→ indicates interaction between corporate social performance and the specific industrial dummy in the line

IV. Regression results with five dimensions of CSP and full interaction – Model 02

Variable	Coefficient		Variable	Coefficient	
Wald chi2 (66)	52,013.250	***			
R2	0.643				
Constant			*Diversity*	-0.628	***
Roa	0.008		→ Basic industries	0.702	***
Market-to-book	0.092	***	→ Cyclical consumer goods	0.477	
Risk	-0.176		→ Cyclical services	0.694	***
Beta	-0.452	***	→ General industrials	0.679	***
Firm size	0.321	***	→ Information technology	0.579	**
R&D intensity	-1.939		→ Non-cyclical consumer goods	0.821	***
Charity	-0.132		→ Non-cyclical services	0.190	
Advert intensity	0.036		→ Resource	0.691	**
Industry			→ Financial	0.901	**
Basis industries	1.399	***	*Enviromental Issues*	-0.171	***
Cyclical consumer goods	1.362	***	→ Basic industries	-0.053	
Cyclical services	1.067	***	→ Cyclical consumer goods	1.102	***
General industrials	1.047	***	→ Cyclical services	-0.181	
Information technology	0.644	**	→ General industrials	0.130	
Non-cyclical consumer goods	0.892	***	→ Information technology	0.075	
Non-cyclical services	1.063	***	→ Non-cyclical consumer goods	0.070	
Resource	0.819	**	→ Non-cyclical services	dropped	
Financial	1.098	***	→ Resource	0.347	*
Community relations	-0.880	***	→ Financial	dropped	
→ Basic industries	0.911	***	*Employee relations*	-0.176	
→ Cyclical consumer goods	0.707	**	→ Basic industries	0.324	
→ Cyclical services	0.955	**	→ Cyclical consumer goods	0.518	*
→ General industrials	1.140	***	→ Cyclical services	0.313	**
→ Information technology	0.422		→ General industrials	0.498	**
→ Non-cyclical consumer goods	1.114	***	→ Information technology	0.461	*
→ Non-cyclical services	3.665	***	→ Non-cyclical consumer goods	0.229	
→ Resource	0.736	**	→ Non-cyclical services	0.194	
→ Financial	dropped		→ Resource	0.349	
Product issues	0.980	***	→ Financial	dropped	
→ Basic industries	-0.885	***			
→ Cyclical consumer goods	-0.561				
→ Cyclical services	-0.726	**			
→ General industrials	-0.826	**			
→ Information technology	-0.857	**			
→ Non-cyclical consumer goods	-0.796	**			
→ Non-cyclical services	-1.415	***			
→ Resource	-0.684	*			
→ Financial	dropped				

The omitted industrial dummy is "utilities".
Temporal dummies 2003 to 2007 in Model 01 and 2004 to 2007 were also estimated, albeit not shown on results.
*, **, *** denote significance at the 90%, 95% and 99% level of confidence, respectively.
→ indicates interaction between corporate social performance and the specific industrial dummy in the line