INSURANCE FROM CSR AND CUSHION EFFECT ON FIRMS' COST OF CAPITAL FACING PRODUCT RECALLS

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1. INTRODUCTION

This introductive chapter gives to the reader an insight into the researched topic. The background is followed by problem statement, aim of the research, relevance and research questions.

1.1 BACKGROUND

MARKETING/FINANCE INTERFACE AND SHAREHOLDER VALUE APPROACH TO SUSTAINABLE MARKETING

Traditionally, within sustainable marketing research the focus has been on consumers, their behaviors, their attitudes towards sustainable products and consumer-based outputs such as satisfaction and loyalty (Chamorro et al. 2009, Srinivasan and Hanssens 2009). Significant attention has been given also to communication strategies since companies cannot hope to enjoy concrete benefits from sustainability unless they intelligently communicate about their initiatives to relevant stakeholders (Maignan and Ferrell 2004). Indeed, creating stakeholder awareness of and managing their attributions towards CSR activities are prerequisites for getting any benefit out of CSR (Du et al. 2010).

Among the variables traditionally used by marketers to assess the performance of their strategies there are sales volumes and market share, both dealing with a product's success in the marketplace. Other variables such as profitability and stock prices have been often considered by marketers under the only responsibility of finance. Both marketing and financial scholars have been quite myopic at looking at the marketing/finance interface. Indeed, both have failed to recognize the contribution of marketing activities to the creation of long-term shareholder value (Srinivasan and Hanssens 2009, Srivastava et al. 1998).

Nowadays, marketing managers are increasingly pressured by the company's top management to assess, measure and communicate the financial value created by marketing activities in terms of shareholder value. This task is particularly tricky given that much of the good marketing deals with the creation and management of relational intangible market-based assets like reputation and brand equity (Srinivasan and Hanssens 2009) that, as the name suggests, result from the relationships between a company and its external stakeholders (Srivastava et al. 1998). Compared with tangible assets, the value of market based assets is harder to measure, doesn't appear on balance sheet and is less likely to be recognized (Srivastava et al. 1998). Despite such limitations, the value of market based assets is becoming more and more important as demonstrated by the market-to-book ratio for the Fortune 500. Indeed, more than 70% of the market value of these companies consists of intangible assets (Capraro and Srivastava, 1997 cited in Srivastava et al. 1998).

The adoption of a shareholder value approach, which recognizes the importance of both tangible and intangible assets (Lukas et al. 2005) and embraces a long-term perspective (Srivastava et al. 1998) is expected to help marketers proving that marketing strategies are a wise management practice and not just an expense. If resources allocated to marketing strategies are not viewed as investments that create or protect firm value (enhancing future performance, providing potential for growth or reducing risk) then marketers' contribution to corporate decision makings are likely to be perceived as only marginal (Srivastava et al. 1998). Moreover, resources previously allocated to marketing strategies could be reallocated to other activities whose managers succeeded in proving clear results using the financial language adopted by the top management (Srivastava et al. 1998, Lukas et al. 2005).

The challenge to measure and demonstrate the shareholder value created/driven by marketing strategies hold also for Corporate Social Responsibility. Indeed, if managers responsible for CSR want their initiatives accepted into mainstream budgeting, they have to be able to prove the returns from these investments in terms of shareholder value (Peloza 2009). Thus is spurring marketers investigating the financial impacts of CSR using metrics such as the Net Present Value of future cash flows (NPV) that is computed using the following formula $NPV= (\sum CF) / (1+R)^T$. Although, some studies have focused on the potential of marketing strategies to enhance shareholder value influencing cash flows (CF in the formula), the risk adjusted cost of capital (R in the formula) has been so far neglected.

THE BUSINESS CASE FOR CORPORATE SOCIAL RESPONSIBILITY: DOES DOING GOOD SOCIALLY LEADS TO DO WELL FINANCIALLY?

In the last decades, the awareness of Corporate Social Responsibility has increased significantly turning into a sensitive issue for many stakeholders including academics, business organizations, NGOs and consumers. Indeed, CSR is regarded as an important academic construct investigated by scholars of many disciplines among which marketing, management, ethics, finance and accounting (Klein and Dawar 2004). Moreover, CSR is rising as a pressing item in corporate agenda (Klein and Dawar 2004) and is a hot debated topic in the business world (Luo and Bhattacharya 2009) since the business case is still questioned.

Four general arguments are commonly used to justify CSR engagement: moral obligation, sustainability, license to operate, and reputation (Porter and Kramer 2006).

An impressive number of definitions of CSR can be found in the literature[1]. Although almost all the definitions embrace the 3 Ps (people, planet, profit), the fact that different disciplines and authors define

[1] For a review see Carroll, A. B. 1999. 'Corporate Social Responsibility : Evolution of a Definitional Construct.' *Business Society,* 38:3, 268-95.

this multidimensional construct slightly differently contributes creating a sensation of vagueness. In 2002 the Commission of the European Communities defined CSR as "a concept whereby companies integrate social and environment concerns in their business operations and in their interaction with their stakeholders on a voluntary basis, since they are increasingly aware that responsible behavior leads to sustainable business success" (Kapoor and Sandhu 2010: p.186, Menz 2010). Hence, "CSR activities signal that the firm is not completely self-interested" but "have an 'other-considering' disposition toward their various stakeholders" (Godfrey et al. 2009). Engaging in CSR activities is considered also a strategy to deal with externalities, reducing externalized costs or avoiding distributional conflicts between companies and society (Heal 2005). Despite some authors still call for a "one fits all" definition of CSR, others see CSR as a custom-made process and argue that each firm should choose the definition that best match its aim and strategy in light of the contingences and culture in which it operates (van Marrewijk 2003).

Examples of CSR activities include pro bono activities, corporate volunteerism, charitable contributions, support for community education and health care initiatives, food safety and environmental programs (Gardberg and Fombrun 2006).

Among scholars and practitioners there are two competing views regarding the financial impacts of CSR: "the social impact" and "the shift of focus" (Shen and Chang 2009), called in this section "positive view" and "skeptical view" respectively.

According to the skeptical view, companies allocating resources to CSR practices are increasing their involvement in issues traditionally under the domain of governments and NGOs which should remain such. Scholars argue that the allocation of scarce resources to CSR programs causes a shift of focus from the firm's economic objective that is maximizing shareholders' interests. Moreover, it increases the firm's operating costs, reduces market competitiveness and affects negatively the financial performance (Shen and Chang 2009). Many consumers show no willingness to pay more for "sustainable" products than for "regular" ones (van de Ven 2008, Menz 2010) and generally show willingness to pay a premium price only when they have a strong commitment to the good cause of the CSR-initiative (Bhattacharya and Sen 2004).

Advocates of CSR recognize its long-term benefits in terms of strategic advantage through differentiation and cost saving (Kapoor and Sandhu 2010) and believe that the efficiency with which business organizations deal with the challenges of sustainability will define their competitiveness and success in the coming years (Sheth et al. 2010). It is argued that wised CSR investments produce many benefits among which enhanced employee morale and productivity (Turban and Greening 1996), retaining talents and improved relationship with communities. Marketing studies have found that CSR has significant direct or indirect influences on several customer-related outcomes (Luo and Bhattacharya 2006, Peloza and Shang

2011): increased loyalty (Du et al. 2007), favorable stakeholder attitudes (Du et al. 2010), customer-company identification and heightened purchase intentions (Sen and Bhattacharya 2001), consumer product responses and increased sales (Brown and Dacin 1997), enhanced corporate image (Fombrun and Shanley 1990, Du et al. 2010) and enhanced advocacy behaviors such as positive word-of-mouth, willingness to pay a price premium and resilience to negative company news (Du et al. 2010, Du et al. 2007). All these benefits are expected to lead to greater financial performance (Artiach et al. 2010), but there is still a limited understanding of whether and how CSR affects a firm's financial outcomes (Luo and Bhattacharya 2006). Proponents of CSR expect that it will pay-off in the long-term even if engaging in sustainability-related activities may require time, effort and relevant investments causing a short-term decrease in profitability (Lopez et al. 2007).

Moreover, companies engaged in CSR practices are less scrutinized by government entities since their commitment to sustainability satisfy and go beyond regulatory compliance requirements (Kapoor and Sandhu 2010). Conversely, avoiding social responsibility may provoke governments set additional legislation altering the competitive situation and leading to higher compliance costs which hardly could be recovered by business (Russo and Fiuta 1997).

Over the last decades, many empirical researches have investigated the relationship between CSR and financial performance approaching the issue from different angles (Menz 2010). Empirical evidence to date has been decisively mixed[2]. Indeed, some studies found positive association, others reported negative returns to CSR and others no effect or inconclusive relationships (Luo and Bhattacharya 2006). However, the majority of studies found a positive correlation between CSR and financial performance (Orlitzky et al. 2003, Peloza 2009). The equivocal results could be linked to several factors among which: 1) different measures/proxy of CSR; 2) different measures of financial performance; 4) data sources; 5) control variables or lack thereof; 6) omission of the theoretical underlying processes or contingency conditions; 7) different time periods examined and different samples of firms (Lopez et al. 2007, Shen and Chang 2009, Sen and Bhattacharya 2001, Scholtens 2007, Luo and Bhattacharya 2006, Callan and Thomas 2009, Artiach et al. 2010). The pros and cons of the most used metrics used in past studies to measure CSR and its financial impact will be outline in the second chapter of this report.

Recently, it has been developed the theory of the insurance-like property of CSR in case of negative events (such as harmful products recalls or environmental damages). Then, CSR can potentially provide financial value in two distinct ways: 1) incremental gains such as increased sales and improved employee morale in

[2] For a review see Orlitzky, M., Schmidt, F. L. & Rynes, S. L. 2003. 'Corporate Social and Financial Performance: A Meta-analysis.' *Organization Studies,* 24:3, 403–41.

current settings and 2) potential mitigation of the adverse impacts of negative events which otherwise would harm much seriously a firm's financial performance (Peloza 2006). Almost all the studies about the financial impacts of CSR investigated aspects of potential incremental gains and the insurance benefits have been explored to a much lesser degree (Peloza 2006).

1.2 PROBLEM STATEMENT

Marketers are called to contribute to the business case of Corporate Social Responsibility proving that engaging in CSR activities creates/preserves shareholder value and hence it is a wise managerial practice.

1.3 AIM OF THE RESEARCH

The aim of this research is to investigate CSR as a form of risk management, i.e. whether and how it has the potential to act as an insurance policy, buffering the adverse impacts on a firm's relational wealth when a company faces negative events. Whether such "cushion effect" is visible on a firm's cost of capital will be researched.

1.4 RELEVANCE

Hereafter are reported some calls for future research to show the relevance of the issue that will be investigated in this research.

> *"An important yet underemphasized benefit from CSR is insurance against negative events that would otherwise harm financial performance" (Peloza 2006: 53, Luo and Bhattacharya 2009, Peloza 2005).*
>
> *If academics are to guide practitioners in their adoption of improved CSR practices, a detailed understanding of its impact on financial performance including processes and contingencies is necessary (Neville et al. 2005).*
>
> *The equivocal link between CSR and firm performance may be due, in part, to "extant strategy and finance literature having largely omitted the underlying processes or contingency conditions that may explain the range of observed relationships". Hence, future research is needed to investigate how and under what conditions CSR leads to positive and negative financial returns" (Sen and Bhattacharya 2001).*

Regarding investors in the stock market, it is still doubtful whether or not they value CSR strategies (Shih-Fang 2010).

… whether CSR is priced by capital markets remains an open question… and research that directly examines how CSR influences firms' cost of equity capital is needed (Ghoul et al. 2011, Renneboog et al. 2008).

1.5 RESEARCH QUESTIONS

The following research questions are formulated:

RQ 1: What are the pros and cons of the metrics used in past studies to measure CSR and its financial impact?

RQ 2: What is the theoretical underlying mechanism through which CSR can act as an insurance policy?

RQ 3: What are, according to the literature, the contingences affecting the ability of CSR to act as an insurance policy?

RQ 4: Do the capital markets recognize and value CSR as a form of insurance in terms of risk adjusted cost of capital?

2. LITERATURE REVIEW

This chapter is structured as follows. First, an overview of pros and cons of the metrics used in past studies to measure CSR and its financial impact is given. Second, firm risk is defined and the reasons for the lack of insurability of a firm's relational wealth are discussed. Third, the characteristics of the stakeholder's categorizations used in this report are presented. Fourth, definition and characteristics of negative events are given. Fifth, the theoretical underlying mechanism of the insurance from CSR is discussed and graphically represented. Sixth, the factors affecting a firm's need to rely on the insurance from CSR are outlined. Seventh, the contingences affecting the ability of CSR to act as an insurance policy are discussed. Eighth, the firm's benefits from the insurance from CSR are disentangled across vary stakeholders. Ninth, what previous studies have found about whether all CSR activities are or not equal for insurance purpose is briefly presented. Tenth, for what types of negative events the insurance from CSR holds is discussed. Eleventh, capital markets reactions to CSR are reviewed. Finally, conceptual framework and hypotheses are presented.

2.1 PROS AND CONS OF METRICS USED IN PAST STUDIES TO MEASURE CSR AND ITS FINANCIAL IMPACT

This section gives the reader an overview of how CSR and its financial impact have been measured in past studies and outlines pros and cons of the different possibilities. Such knowledge is expected to be very helpful in developing the research design for the empirical part of this thesis.

CSR ACTIVITIES

In investigating the financial impact of CSR, past studies considered a wide variety of CSR categories and activities (Maignan and Ferrell 2004). Thus is clearly a consequence of the multidimensional nature of such construct[3]. Generally, researchers have chosen one of the following three options: one CSR activity, multiple activities within the same category and multiple activities across different categories. Table 1 outlines in a structured way the pros and cons of these options and shows that there is not a "one fits all"

[3] A systematic review of all the CSR activities considered by the many studies done in the past decades is beyond the scope of this research. The interested reader is invited to read the review Peloza, J. & Shang, J. 2011. 'How can corporate social responsibility activities create value for stakeholders? A systematic review.' *Journal of the Academy of Marketing Science,* 39:1, 117-35.

solution since each choice has strengths and weaknesses. Hence, researchers are called to choose the solution that best fits the aim of each study. The pros and cons presented in Table 1 will be considered in developing the research design for the empirical part of this thesis.

	PROS	CONS
ONE CSR ACTIVITY	Depth of examination. High internal validity. Easy comparison with other studies focused on the same activity . *(Peloza and Shang 2011)*	Restricted view of a multidimensional construct *(Peloza and Shang 2011)*. Correlations and/or synergistic effects with other CSR activities can't be valued.
MULTIPLE CSR ACTIVITIES WITHIN THE SAME CATEGORY ***(e.g. pro bono work and cause-related marketing within the category "philanthropy")***	Give a more holistic picture of the CSR activities of a firm *(Peloza and Shang 2011)*. Allow a more fine-grained analysis. Potential to examine correlations and/or synergistic effects between different CSR activities.	Breath is sacrificed for depth within one single category *(Peloza and Shang 2011).*
MULTIPLE CSR ACTIVITIES ACROSS DIFFERENT CATEGORIES ***(e.g. reducing the production of wastes, philanthropic donations and product quality across the categories "business practice" "philanthropy" and "product-related" respectively)***	Holistic picture of the CSR activities of a firm *(Peloza and Shang 2011).* Best replicates reality *(Peloza and Shang 2011).* Potential to examine correlations and/or synergistic effects between different CSR activities.	Limit the ability to compare findings across studies *(Peloza and Shang 2011)* since rarely studies consider exactly the same activities.

Table 1: Pros and cons of considering only one CSR activity, multiple CSR activities within the same category and multiple CSR activities across different categories.

MEASURING CSR

The absence of clear international standards about how to measure CSR have lead to the proliferation of many different alternatives (Lopez et al. 2007) such as surveys, content analyses of annual reports, expert evaluations and reputational rankings (Turban and Greening 1996). Table 2 outlines strengths and weaknesses of the CSR measures adopted in past studies. Such information will be considered in deciding how to measure CRS in this research. Literature shows that different metrics of social initiatives may yield different results (Godfrey et al. 2009).

Another aspect complicating the measurement of CSR is the lack of standards in reporting. Indeed, each company makes its own choices about the scope and depth of its sustainability report. Moreover, only a

part of the companies reporting on sustainability issues provides quantitative data about specific sustainability issues.

Initiatives of creating reporting standards exist (e.g. Global Reporting Initiative and AccountAbility) (Du et al. 2010), but they are not compulsory and not widely spread. On the other hand, sustainability indexes seem to have the potential to play a role in unifying what, where and how companies belonging to their indexes (or trying to making part of it) disclose their CSR information. Indeed, companies belonging to sustainability indexes (such as the Down Jones Sustainability Index), being checked by third parties on the basis of specific sustainability criteria, tend to adapt their sustainability reports to such criteria.

The adoption of internationally accepted standards is expected to contribute solving at least part of the challenges linked to the assessment and measurement of CSR.

CSR MEASURES	STRENGHTS	WEAKNESSES
MONOLITHIC MEASURE AND A SINGLE PROXY ***(e.g. philanthropic giving)***	Simplicity of the approach *(Luo and Bhattacharya 2006).*	Don't allow a fine grained understanding of the different nuances and may fail to capture significant differential effects (Godfrey et al. 2009, Godfrey et al. 2010).
AMOUNT OF MONEY INVESTED IN CSR ACRIVITIES AS DISCLOSED IN FIRMS' ANNUAL REPORTS	Simplicity of the approach *(Luo and Bhattacharya 2006).*	The validity of announced investments may be doubtful if annual reports are not validated/audited by externally third parties. Announced investments may be over-reported to impress stakeholders or under-reported to keep a modest profile in promoting good deeds. Lack of consensus on what should be included in CSR investments and what not (Orlitzky et al. 2003, Luo and Bhattacharya 2006).
CONTENT ANALYSIS OF SUSTAINABILITY REPORTS & CORPORATE WEBSITES ***(referred also as CSR disclosure)***	Annual reports are among the main corporate documents representing the company; corporate websites are used to disclose social actions (Kapoor and Sandhu 2010). Measuring a qualitative 'stock' variable (participate in activities or not) facilitate a counting of initiatives. Allows to compute an overall CSR score and sub-scores for each category of CSR activities (Kapoor and Sandhu 2010). Allows to perform longitudinal research on many organizations providing detailed continuous history of social activities (Bansal 2005).	The collection of relevant data is associated with very high efforts and is time consuming (Menz 2010). It requires the development of measuring instruments to compare units of text against particular CSR activities and attribute their incidence (Orlitzky et al. 2003, Kapoor and Sandhu 2010). Content analysis provides no indication of the importance the companies attach to each information item (Gray et al. 1995 cited in Kapoor and Sandhu 2010). The relationship between what is disclosed and performed is troubling if the report is not assessed by third-parties (Richardson et al. 1999).

FORTUNE MAGAZINE MOST ADMIRED COMPANY RANKING ***(reputational ranking)***	Ranking of the US most admired corporations. Revised yearly. The ratings represent a comparison among major competing companies in a given industry. Based on the polls of financial analysts, senior executives, and Wall Street investors from large companies. (Luo and Bhattacharya 2006, Neville et al. 2005)	Assumes that reputations are good reflections of underlying values and behaviors (Orlitzky et al. 2003). Expresses more the firm's overall management than its socially responsible decisions (Waddock and Graves 1997). Highly correlated and hence influenced by other end state metrics such as ROA (Peloza 2009). The use of reputation indices as a measure of CSR is questionable since they are expected to obscure the relationship between actual CSR investments and financial performance (Wood and Jones 1995). Respondents are selected from within the business field (Neville et al. 2005).
KLD STATS ***(developed by Kinder, Lydenberg, and Domini Research and Analytics Inc,. a financial advisory firm specialized in the assessment of companies' corporate social performance)***	Considered the "gold standard" and largely used in the academic literature. Take the multidimensionality of CSR into account (Menz 2010). Offer more objectivity than a measure based on Fortune's survey data (Chand, 2006 cited in Callan 2009). Firms are rated using an objective set of screening criteria applied consistently (Turban and Greening 1996, Nelling and Webb 2009). Respondents are not affiliated with any of the rated companies (Turban and Greening 1996). Assess each CSR item in terms of strength and concerns (Menz 2010, Nelling and Webb 2009). The use of electronic database reduces the time needed to collect CSR data (Godfrey et al. 2009). It measures a qualitative 'stock' variable facilitating a counting of initiatives (Godfrey et al. 2009).	Proprietary indexes. Payment requested to get access. It contains information about U.S. corporations only (Menz 2010). Almost all factors have the same weight (Di Giulio A. et al. 2007) and this complicates the inter-sectors comparability. Indeed, different issues do not have the same importance across all industries (Steger et al., 2007 cited in Menz, 2010).

Table 2: Strengths and weaknesses of CSR measures used in past studies investigating the financial impacts of CSR.

MEASURING THE FINANCIAL IMPACT FROM CSR

The metrics used to measure the financial impact from CSR can be clustered in two categories: *end state outcome metrics* and *intermediate outcome metrics* (Peloza 2009).

END STATE OUTCOME METRICS

The majority of past studies used one or multiple end state outcome metrics. Among this cluster, three types of measures are distinguished: accounting-based, market-based and perceptual (Peloza 2009). Perceptual measures qualitatively assess firms performance using either internal or external sources. Generally, such measures consist in surveys capturing subjective estimates of a firms' financial position. However, measures where managers are asked to assess their firm's performance may be considered not so credible and biased by other stakeholders. Table 3 summarizes the pros and cons of accounting- and market-based end state measures and provide also some examples of the variables used.

CFP MEASURES	PROS	CONS
ACCOUNTING-BASED - return on assets (ROA) - return on equity (ROE) - pretax income to net sales (RPTI) - gross profit to net sales (RGM) - earnings per share (EPS) - growth in sales - growth in total net assets - etc.	Indicate what is actually happening in the firm (Lopez et al. 2007). Demonstrate how efficiently the firm uses its assets to generate value (Peloza 2009). Suited to capture the value of CSR initiatives designed to immediately reduce operating costs, e.g. decreasing waste (Peloza 2009).	Backward-looking (Luo and Bhattacharya 2006). Not always consistently applied among firms and driven by the accounting practices (Peloza 2009). Subject to managers' discretionary allocations of funds to different projects and policy choices (Orlitzky et al. 2003). Reflect internal decision-making capabilities and managerial performance rather than external market responses to organizational actions (Orlitzky et al. 2003). Not adjusted for risk and can be distorted by accounting laws and conventions (Lopez et al. 2007). Bias the short-term excessively and can misrepresent the business case for CSR given that the main benefits of CSR investments are shown in the long term (Torres et al. 2010, Luo and Bhattacharya 2006). The use of such metrics is considered one of the possible cause of the equivocal results found in prior empirical researches (Margolis and Walsh, 2003 cited in Luo and Battacharya, 2006).

MARKET-BASED (investor returns) - stock price - stock volatility - price per share - Tobin's q (the ratio of the stock market value of the company to the cost of its tangible assets) - etc.	Forward-looking and hinge on growth prospects and profits sustainability (Luo and Bhattacharya 2006). Give the perception that the stock market have of differentiating factors such as the adoption of CSR programs or negative events such as product-harm crises (Lopez et al. 2007). Reflect the notion that shareholders are a primary stakeholder group whose satisfaction determines the company's fate (Orlitzky et al. 2003).	More noisy than accounting-based measures since speculation and other macroeconomic factors could have an influence on results (Lopez et al. 2007).

Table 3: Pros and cons of accounting-based and market-based financial measures.

INTERMEDIATE OUTCOME METRICS

The use of intermediate metrics[4], whose outcomes eventually create business value in the end state, is expected to benefit managers trying to establish the business case for CSR. Indeed, such metrics provide a measure of the financial value to the firm that might not be visible in end state metrics because obscured by other noise. End state metrics "are affected by a host of other business issues such as competitive pressures, economic cycles or regulatory changes" (Peloza 2009).

Table 4 reports three categories of intermediate metrics with some examples and references of studies that used them.

Getting access to all the many financial data needed to compute some intermediate financial metrics is complicated for academics. Indeed, such information are not publicly available and managers are usually not inclined to disclose the entire financial figures of their companies. Consequently, academics can rely

[4] An example of intermediate metric is cash flow. A positive change in cash flow should lead to a positive change in share price where cash flow and share price are the intermediate and end state outcome respectively (Peloza, J. 2009. 'The Challenge of Measuring Financial Impacts From Investments in Corporate Social Performance.' *Journal of Management,* 35:6, 1518–41.)

only on survey data or secondary data available in databases (Peloza 2009) and thus is limiting the progress in understanding whether and how CSR can impact firms' financial performance.

Category	Metrics Included	Examples
Cost	Reduced use	Carter (2005)
	Operational efficiencies	Sharma and Vredenburg (1998)
	Changes in risk profile	Sharfman and Fernando (2008)
Revenue	Customer loyalty	JP Morgan (2006)
	New markets	Sustainable Asset Management/WRI (2007)
	Competitive advantage	
Integrative	Cash flow	Reed (2001)
	Profitability	Lopez, Garcia, and Rodriguez (2007)

Table 4: Intermediate outcome metrics (Source: Peloza, 2009).

2.2 FIRM RISK AND LACK OF INSURABILITY OF THE RELATIONAL WEALTH

A general definition of risk is as follows: "uncertainty about outcomes or events, especially with respect to the future" (Orlitzky and Benjamin 2001). Another definition, more related to risk management and risk communication, describes risk as "the perceived probability of harm in a given situation, as determined by the perceived nature of a given hazard and the perceived extent of one's exposure to that"(Heugens and Dentchev 2007).

Firm risk measures the amount of fluctuations over time in financial performance (Donaldson, 1999 cited by Orlitzky and Benjamin, 2001). It can be measured looking at stock prices or internal accounting return variables such as SD_{ROA} and SD_{ROE}. In the first case we speak about market risk whereas in the latter of accounting risk (Orlitzky and Benjamin 2001). Besides indicating increased variability in organizational returns, firm risk is also a sign of chance of corporate decline and mortality (Orlitzky and Benjamin 2001). Indeed, it undermines forecasts and planning activities (Bettis & Thomas, 1990, Brigham & Gapenski, 1996, Sharpe, 1990 all cited by Orlitzky and Benjamin, 2001). Evidence shows that "being a good corporate citizen tends to reduce firm risk" and that investments in CSR "appears to lower external market-based risk relatively more than internal accounting-based risk" (Orlitzky and Benjamin 2001).

Risk management practices protect shareholder value reducing a firm's exposure to specific risks that would rise to deadweight costs which investors cannot diversify away in the market (Stulz, 2002 cited in Godfrey et al., 2009). Protecting shareholder value is a pathway to add value to shareholders. Investing in risk management practices like insurance policies is considered a wise strategy even though these investments come at a price in excess of expected loss because it contributes reducing the overall firm risk (Godfrey et al. 2009). Furthermore, an insurance becomes more valuable the higher the cost of the financial distress (Stulz, 2002 cited in Godfrey et al., 2009).

Prior to discussing what are the criteria for the insurability of a firm's assets, a brief digression about what an asset is and the resource based view of the firm is worthy.

An asset can be defined as any physical, organizational or human attribute which allows a firm to settle and implement strategies aimed at improving its effectiveness and efficiency in the marketplace (Barney 1991 cited in Srivastava et al., 1998). Hence, the value of any asset is ultimately realized, directly or indirectly, in a firm's markets. The assets of a firm can be tangible or intangible, on or off the balance sheet and internal or external to the company (Srivastava et al. 1998).

According to the resource based view of the firm, not all the assets of a company contribute equally to the sustainable competitive advantage of a firm in its markets. Indeed, an asset is more likely to be valuable

when it satisfies to some extent the following criteria: 1) it is convertible; 2) it is rare; 3) it is imperfectly imitable; 4) it doesn't have perfect substitutes (Srivastava et al. 1998). Convertibility means that the asset can be used to exploit opportunities and/or to neutralize threats in the external environment. Rarity means that when many competitors possess the same resource, its potential to be a source of competitive advantage is considerably reduced. The meaning of the last two is straightforward.

Among the resources that largely contribute to the competitive advantage of a firm there are relational and intellectual market-based intangible assets. Their intangible character makes replication by competing firms considerably more difficult (Roberts and Dowling 2002). The potential of relational market-based intangible assets to generate and protect competitive advantage depends on the relationships a firm has with its stakeholders and their assessment of some elements of the firm's activities (Wood and Jones 1995). The relationship-based intangible assets, referred also as relational wealth, (Clarkson Principles of Stakeholder Management, Business Ethics Quarterly, 2002) include among others: trust, brand equity, corporate reputation, customer loyalty and employees' commitment (Godfrey 2005). Intellectual market-based assets involve marketing knowledge which provide a core competency consisting of skills, systems and information that may convey a sustainable competitive advantage to the firm in terms of identifying market opportunities and developing effective marketing strategies (Lukas et al. 2005).

The criteria for the formation and maintenance of a functioning insurance market are: 1) there must be a large number of homogeneous objects to be insured; 2) the loss must be unintentional and accidental; 3) the loss must be determinable and measurable; 4) the loss should not be catastrophic to the insurer; 5) the chance of loss must be calculable; 6) the premium must be economically feasible (Rejda, 1992 cited in Godfrey, 2005).

Despite tangible assets are insurable using the traditional insurance contracts, a firm's relational wealth cannot because it doesn't meet the first three criteria (Godfrey 2005). The first criterion is violated by relational wealth because it is idiosyncratic to specific firm-stakeholder relationships and not homogeneous among firms. The second condition is violated because not all the negative events that adversely impact firm-stakeholders relationships are accidental and unintentional. The third condition is violated since, being relational wealth intangible and off the balance sheet, it is tricky to determine and measure the magnitude of the loss. Indeed, the effects of a negative act may be textured differently in local markets and extended over a long time horizon (Godfrey 2005).

The fact that a firm's relational wealth accounts for an increasing proportion of shareholder value (Barwise and Farley 2004) and is not insurable using traditional insurance policies (Godfrey 2005), stresses the

importance of investigating the potential of CSR to perform for relational wealth the core functions of an insurance.

Before discussing the theory of the insurance from CSR, it is necessary to pinpoint the characteristics of the stakeholder's categorizations that will be referred to in this report and what is meant by negative events. Thus will be done in Sections 2.3 and 2.4 respectively.

2.3 CSR AND STAKEHOLDERS' CATEGORIZATIONS

According to the stakeholder perspective, a firm is at the center of a network of relationships with a wide range of stakeholders whose interests, goals and degree of awareness of social/ethical issues may vary significantly (van Marrewijk 2003, Neville et al. 2005). Indeed, the importance of CSR activities is likely to differ across stakeholder groups and their perceived CSR as well (Herpen et al. 2003). Stakeholders assessments depend on the congruence between the firm's behaviors and their expectations and preferences (Fombrun and Shanley 1990). Consequently, a firm's CSR portfolio of activities is framed and assed within the relationships with its stakeholders (Neville et al. 2005) and a firm is considered to act in a socially responsible way when its decisions and actions account for and balance diverse stakeholder interests (Maignan and Ferrell 2004).

Although many classifications of stakeholders can be found in the literature, Table 5 reports only the characteristics of primary, secondary, dominant and non dominant stakeholders since those are the categorizations to which it will be referred to in this report.

CATEGORIZATIONS	CHARACTERISTICS
PRIMARY STAKEHOLDERS **(e.g. customers, employees, shareholders, and suppliers)**	Essential to the operations of a business (Freeman et al. 2008 cited in Godfrey et al. 2009) Make legitimate claims on the firm and have both the urgency and the power (utilitarian, coercive, or normative) to enforce such claims (Mitchell et al. 1997)
SECONDARY STAKEHOLDERS **(e.g. local communities, the legislative branch of governments, media, NGOs, activist groups, society at a large)**	Not engaged in transactions with the corporation and hence not essential for its survival (Clarkson 1995) Can influence the firm's primary stakeholders (Freeman et al. 2008 cited in Godfrey et al. 2009) Have legitimate claims on the firm, but lack both urgency and power to enforce their claims (Mitchell et al. 1997)
DOMINANT STAKEHOLDERS **(each firm is called to identify them within its stakeholder base)**	Contribute significantly to the firm's stock of relational wealth and are central to its protection (Godfrey 2005) Have the power to negatively affect a firm's relational wealth, the legitimacy to exercise that power but lack the urgency to so (Mitchell et al. 1997)

NON DOMINANT STAKEHOLDERS	Don't contribute significantly to the firm's stock of relational wealth (Godfrey 2005)
(each firm is called to identify them within its stakeholder base)	When provoked by actions antithetical to their values, may become dangerous stakeholders having the power to negatively affect relational wealth and a sense of urgency leading to action (Godfrey 2005, Mitchell et al. 1997)

Table 5: Characteristics of the stakeholders categorizations used in this report.

The ability of a firm to meaningfully engage vary stakeholders in CSR activities, is essential to its ability to leverage them for economic benefits (Peloza 2006).

2.4 WHAT IS MEANT BY NEGATIVE EVENT

Organizational actions, conducts and operations may, even under the best circumstances, create harm or adverse impacts among stakeholders or affect the integrity and moral character of the firm (Godfrey et al. 2009, Godfrey et al. 2010). In this thesis the term *negative event* is used referring to all the organizational actions, conducts and operations that lead to such negative outcomes.

Table 6 reports in a structured way the many characteristics used to describe negative events which has been identified by reviewing the literature.

CHARACTERISTICS	DESCRIPTION
TYPE	INTEGRITY-RELATED OR STAKEHOLDER-BASED (Godfrey et al. 2009)
MAGNITUDE	VARYING FROM RELATIVELY BENIGN TO SEVERE (Godfrey 2005)
EXTENT	LOCAL OR GLOBAL (Godfrey 2005) FIRM-SPECIFIC, INDUSTRY-WIDE, ECONOMY-WIDE
STAKEHOLDERS IMPACTED	SPECIFIC GROUPS OR A WHOLE COMMUNITY TRADING PARTNERS AND SECONDARY STAKEHOLDERS (Godfrey et al. 2009)
SOURCE	MISMANAGEMENT, LACK OF ATTENTION, NEGLECT OF CSR (Herpen et al. 2003, Kolk and Pinkse 2006) IRRESPONSIBLE BEHAVIORS (Frooman 1997) DEFICIENT CONTROLS (Menz 2010) ILLICIT BEHAVIORS (Orlitzky and Benjamin 2001) DIFFERENT PERCEPTION OF WHAT IS FAIR; DISCREPANCY BETWEEN PRIVATE and SOCIAL COSTS/BENEFITS -such as negative externalities- (Heal 2005)
DURATION OF THE EFFECTS	FROM DAYS TO LONGER PERIODS
PREDICTABILITY	UNFORESEEN/UNEXPECTED; PARTLY PREDICTABLE; PREDICTABLE
INTENTIONALITY	INTENTIONAL; UNINTENTIONAL (Godfrey 2005)

Table 6: Characteristics of negative events.

Some negative events are intentional such as a facility closing or the downsizing of a plant. Others are accidentally and unintentionally such as the contamination of food products during manufacturing processes or an oil spill causing an environmental disaster. Facility closing/downsizing affects particularly employees and local communities. Food contaminations mainly impact on consumers, whereas environmental pollution adversely impacts stakeholders concerned with the protection of the natural environment and the local communities (Godfrey 2005).

Negative events are threats to a firm's social legitimacy as well. Indeed, if a company is seen by stakeholders as irresponsible or dishonest, it will lose social legitimacy and, in order to counter any losses, the firm has to reestablish congruency between the values implied by its actions and accepted societal norms (Dean 2004).

Although negative events can potentially hit any companies and lead to adverse impacts whose magnitude may vary from relative benign to severe, many firms don't have any crisis management strategic plan at all. A well designed crisis management strategic plan is expected to allow the firm to be in greater control of its destiny in the case of a negative event (Fearn-Banks, 2002 cited in Wrigley et al., 2006). Thus because a well settled and efficient crisis management plan removes some of the risk and uncertainty from the negative occurrence (Wrigley et al. 2006). Moreover, it acts for the management as a reference when it is needed to report stakeholders about causes and processes to solve the problem or at least reduce its impact. Consequently, damages to shareholder value are expected to be reduced when a accompany has a well designed crisis management plan than in the absence of it.

Firms have been shown to respond not only to negative events caused by their own operations and conducts but also to negative events involving other companies in their industries and events involving companies facing similar risks (Richardson et al. 1999).

The insurance from CSR contributes handling negative events and the consequent adverse impacts on stakeholders or firm's integrity.

2.5 INSURANCE FROM CSR: THEORETICAL UNDERLYING MECHANISM

The theoretical bases of the *theory of the insurance from CSR* have been constructed drawing on several disciplines among which business ethics, social psychology, law, risk management and strategic management (Godfrey 2005). This theory sustains that, under certain circumstances, CSR engagement creates a reservoir of positive moral capital. In case of negative events (originated by business activities, conducts or operations and adversely impacting stakeholder groups or firm's integrity), such positive moral capital acts as an insurance for the firm's relational wealth. Indeed, it prevents or at least mitigate the loss in relational wealth protecting shareholder value. The negative effects are buffered thanks to the mitigation of stakeholders' assessments and resulting sanctions (Godfrey 2005, Godfrey et al. 2010).

A study demonstrating sound theoretical bases of such theory, shows that philanthropic activity has the potential to provide insurance-like protection for a firm's relational wealth through the positive moral capital it generates (Godfrey 2005). Even if such study focus only on a facet of CSR, it is argued that the theoretical construct should hold for others discretionary CSR activities as well (Godfrey 2005). The voluntary and discretionary nature of CSR activities, meant as doing good above and beyond what is expected, is likely to lead to imputations of exemplary or good behaviors (Wood & Logsdon, 2002 cited in Godfrey, 2005).

The cost of any insurance policy is simply expensed if no claims is made and this holds for the insurance from CSR as well. Hence, if no negative event occur one firm engaging in CSR for its insurance benefits may appear less profitable than companies which don't make such investment (Peloza 2006). However, investing in risk management strategies is considered a wise management practice because it contributes reducing the overall firm risk (Godfrey et al. 2009). As for any other form of insurance, a firm may rely on the insurance from CSR only if investments in CSR activities are done prior any potential negative event happens (Peloza 2005).

Insurance from CSR should be more valuable for companies in which stakeholder relationships and the resulting shareholder wealth play a larger role in shareholder value creation (Godfrey et al. 2009).

Evidence show that corporate managers involved in CSR decision making processes recognize the importance of the insurance from CSR (Godfrey 2005) and that investing in CSR activities they would like to capture both incremental gains and protection for the firm's reputation (Peloza 2005). Although researchers and some corporate CSR managers have recently started appreciating the value of CSR as an insurance, it is not granted that firms has yet the abilities to effectively leverage their CSR for risk management. Indeed, in many companies CSR and risk management are managed by different departments and the collaboration between the two may not be in place yet (Peloza 2006).

Although CSR can be valuable in insuring against risk, evidence shows that firms which engage in CSR activities are neither more nor less likely than competitors which don't engage in CSR to create negative events (Godfrey et al. 2009). Hence, insurance from CSR can help buffering the negative effects on the firm's shareholder wealth and protecting shareholder value but not reducing the probability of unforeseen events related to corporate operations. On the other hand, a recently published study sustains that "responsible firms have negative events less often than negligent firms" (Minor 2011).

To facilitate the reader, the mechanism through which CSR can operate as an insurance policy has been split in two parts: 1) from CSR activities to moral capital; 2) from moral capital to the protection of shareholder value. Figures 1, 2 and 3 give a graphical representation of the two parts and of the complete mechanism respectively.

2.5.1 FROM CSR ACTIVITIES TO MORAL CAPITAL

The term *moral capital* (referred in the literature also as goodwill and moral reputational capital) is given by the outcome of the processes of assessment, evaluation, and imputation of CSR activities by stakeholders (Godfrey 2005).

The generation of moral capital depends on stakeholder's assessment of both act and actor. An act can be evaluated as positive or negative whereas the motivation and character of an actor can be evaluated as genuine or ingratiating. Hence, as shown in Fig. 1, there are four possible combinations: positive act/genuine actor, positive act/ingratiating actor, negative act/genuine actor and negative act/ingratiating actor (Godfrey 2005).

The necessary condition for the generation of positive moral capital from CSR engagement is that both action and actor (in this case the organization and its management) receive positive evaluations from dominant stakeholder groups (Godfrey 2005). Consequently, positive moral capital is generated only in one of the four possible combinations, that is when the CSR activity in which the company engages is evaluated positively and the firm itself is evaluated as having a genuine motivation to invest in such specific activity.

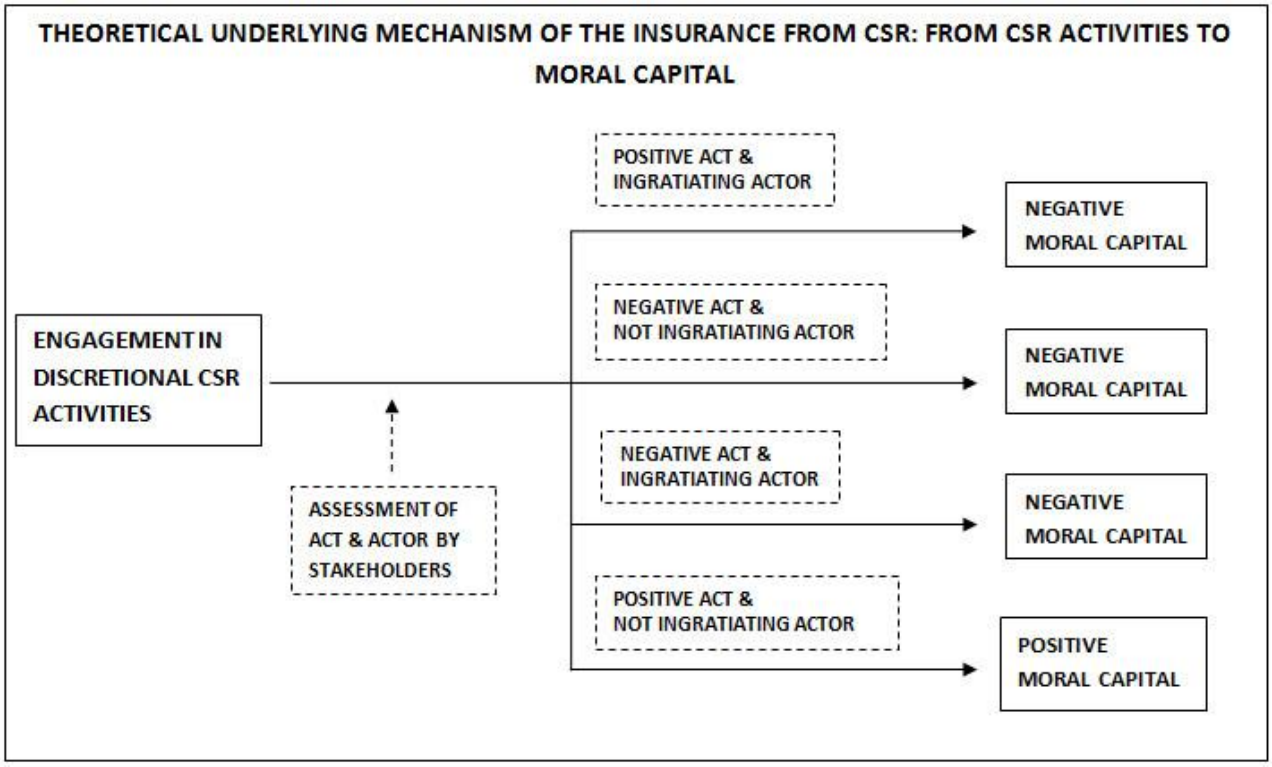


Fig. 1: Part 1 of the theoretical underlying mechanism of the insurance from CSR.

An act is evaluated as positive by stakeholders when there is consistency between it and stakeholders' ethical values (Godfrey 2005). Actor-based moral capital is generated when stakeholders impute intentions, motivations and character to an actor in relation to a specific action. Hence, the engagement in a CSR activity can be considered by stakeholders either as a genuine manifestation of responsibility or as an ingratiating act. The first case will lead to the generation of positive moral capital whereas the second to the generation of negative moral capital (Godfrey 2005).

The term *ingratiation* refers to the illicit use of strategic behaviors aimed at influencing the target about the attractiveness of the actor's quality (Jones, 1964 cited in Godfrey, 2005). Any CSR activity judged as ingratiating rather than a genuine manifestation of responsibility will diminish the actor's attractiveness perceived by stakeholders, leading to the creation of negative moral capital which doesn't provide any insurance benefits at all (Godfrey 2005). To reduce the risk that CSR activities would be seen as ingratiating, managers are called to engage in activities which are consistent with the firm's identity. It means that CSR activities should be driven by the core and enduring values that the company uses to define itself in order to be perceived as genuine.

Managers trying to optimize their portfolio should both choose CSR activities that have the potential to be considered as positive actions and manage decision processes avoiding evaluations of ingratiation (Godfrey 2005). To establish the sincerity of its CSR activities and their effectiveness as well, a firm should make its

annual sustainability report audited by third party (Heugens and Dentchev 2007) or better should strive to be accepted in sustainability stock indexes. Firms belonging to the Down Jones Sustainability Index are the best in class of each industry having a high CSR profile and are audited once a year. Only when passing the many requisites, a company can be part of this selection of high CSR companies.

It has been argued that the greater the act- and actor-based positive moral evaluations by stakeholder groups, the greater the positive moral capital generated by a CSR activity will be (Godfrey 2005).

A firm accrues its reservoir of positive moral capital when external stakeholders receive and accept the signal of "other-considering" disposition that managers provide engaging in discretional CSR activities (Herpen et al. 2003, Simon 1995). The strength of the "other considering-signal" of CSR activities and hence the potential to create positive moral capital are determined by two criteria: the activity must be public knowledge and the engagement must be substantial enough to be noticed and seen as a credible and reasonable declaration of unselfish intention and commitment (Godfrey et al. 2009).

Engagement in CSR activities by companies belonging to "sin" industries (such as tobacco and alcohol) is more likely to be perceived as "green washing", "blood money" or "ingratiating". In such cases the signal value of CSR and consequently the insurance value is destroyed or diminished at best (Godfrey et al. 2009).

The other three combinations leads to the generation of negative moral capital (Godfrey 2005) which can't be used as a buffer to mitigate the loss in shareholder value in case of negative events affecting/offending some stakeholder groups.

Given that different stakeholders groups may evaluate a specific CSR activity differently, managers deciding what activities to engage in and where to dedicate more efforts and resources, should first of all analyze their stakeholder base. Indeed, the knowledge about stakeholders base allows a firm to decide whether to invest in CSR activities targeted to specific stakeholders groups or to a broad stakeholder base.

SPECIFIC POSITIVE MORAL CAPITAL AND POSSIBLE DRAWBACKS

In order to generate specific moral capital, managers should choose CSR activities consistent with central and identity-rich values among the dominant stakeholder groups, which contribute significantly to the firm's stock of relational wealth (Albert & Whetten, 1985; Rowley & Moldoveanu, 2003 all cited in Godfrey, 2005). Such values are those differentiating the dominant stakeholders groups from others and contributing to their uniqueness. Moreover, these values will not be among those that overlap with other communities/groups and are not likely to be widely held or generally embraced moral values (Whetten and Mackey 2002).

The CSR activity-stakeholders' value consistency should produce positive moral capital among the targeted communities and this positive moral capital is expected to be deeply held since the communities identify the firm with their own core values. Hence, through this type of investments, managers can build specific positive moral capital (Godfrey 2005).

Managers should be aware that this choice could have drawbacks consisting in the generation of negative moral capital among other stakeholders (Godfrey 2005) who, in case of actions offending their values, may be urged to action and this would negatively affect the relational wealth (Mitchell et al. 1997, Godfrey 2005). Drawbacks are expected to be in form of specific negative moral capital. It seems unlikely that a firm can perfectly calibrate its CSR activities to generate positive moral capital among all the relevant stakeholders groups (Godfrey 2005).Hence, as for many other strategic decisions it is a question of trade-offs.

A solution could be investing on a CSR activity targeted to specific dominant stakeholder group only after having evaluated whether it can offense the values of other stakeholder groups. This is expected to reduce the risk of myopic choices which may lead to drawbacks. Being myopic can backfire to a firm with severe consequences as shown in the Monsanto example reported hereafter.

Monsanto invested significant amount of money in genetically modifying crops to make them more productive and less requiring in terms of insecticides to protect them. In Monsanto's mind these genetically modified crops were aimed at making agriculture more sustainable and improving crop yields in poor countries. Monsanto's CSR activity backfired so severely that the company was destroyed and taken over. The problem was that Monsanto focused on the private-social cost gap associated with the use of insecticides but missed the gap associated with people's fears of genetically modified foods. Consumers saw Monsanto as attempting to raise farm productivity and lower pollution by dumping severe externalities to consumers in the form of new and unknown risks linked to GM foods. Monsanto was also attacked by environmental groups who was concerned about the spreading of the "evil" genes among traditional crops. As a result, farmers abandoned Monsanto as seed supplier. "Monsanto's failure was not a failure to take CSR seriously, but a failure to implement it thoroughly and follow through on all of its implications" (Heal 2005).

GENERAL POSITIVE MORAL CAPITAL AND POSSIBLE DRAWBACKS

When dominant stakeholder groups belong to varied and diverse communities, a firm should choose CSR activities having the potential to create general positive moral capital. “General positive moral capital arises from philanthropic activities that rest on moral values generally accepted and widely held by multiple communities with different value systems” (Godfrey 2005). The moral values underlying activities such as AIDS relief and clear water provision are examples of general moral values held by many (Heal 2005).

Drawbacks could be linked to the creation of negative moral capital among small groups of dissenters. However, people dissenting from generally accepted norms are expected to be a local phenomenon (Donaldson & Dunfee, 1999 cited in Godfrey, 2005).

COMBINATION OF SPECIFIC AND GENERAL POSITIVE MORAL CAPITAL AND POSSIBLE DRAWBACKS

Firms having a broad stakeholder base and relevant niches as well, should try to have a diversified portfolio of CSR activities aimed at creating specific moral capital within the relevant niches and general moral capital in the broad stakeholder base (Godfrey 2005). The ultimate aim is clearly to get positive goodwill among both specific and general communities, reducing the possibility of drawbacks.

2.5.2 FROM MORAL CAPITAL TO THE PROTECTION OF SHAREHOLDER VALUE

The second part of the theoretical underlying mechanism of the insurance from CSR, i.e. from positive moral capital to the protection of shareholder value, is represented graphically in Fig. 2.

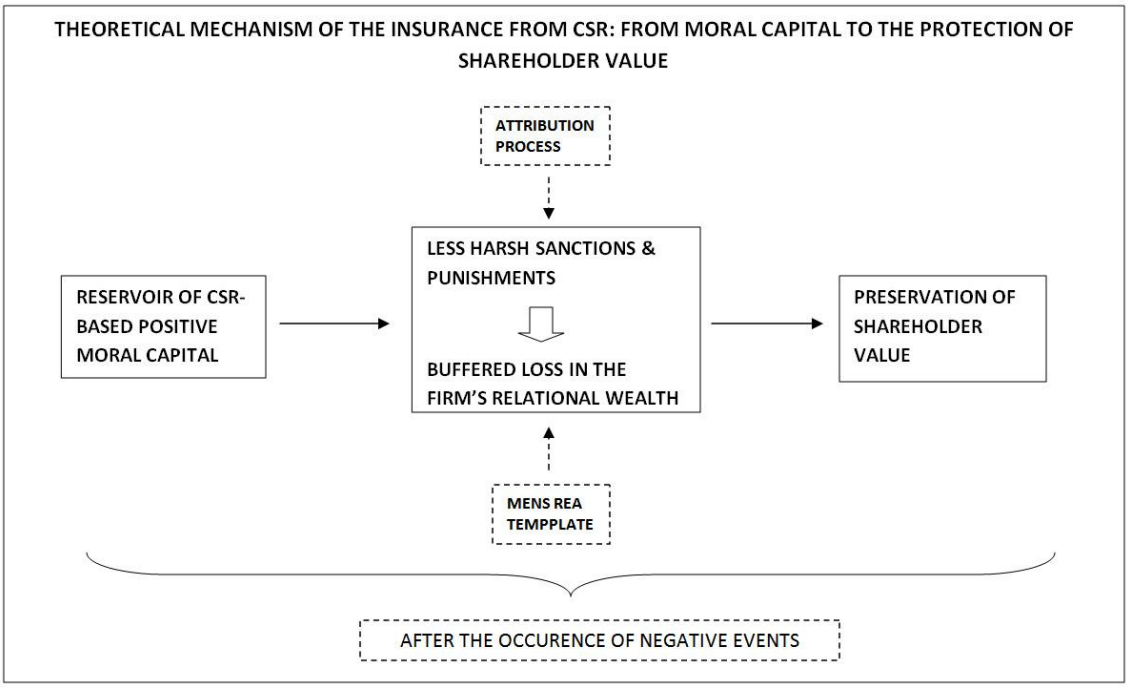


Fig. 2: Part 2 of the theoretical underlying mechanism of the insurance from CSR.

The value of the relational wealth of a firm rests in the judgments and perceptions of stakeholders (Godfrey et al., 2010) who, in case of a negative event, use the prior positive moral capital generated from CSR engagement in the cognitive processes leading to the attribution of blame (Klein and Dawar 2004) and the assessment of the actor's character and intentions according to the mens rea template (Godfrey et al. 2009).

CSR-based positive moral capital is a perception-based construct which has value since it disposes stakeholders to hold beliefs about the firm, beliefs that can mitigate sanctions and punishments in case of negative events (Godfrey 2005). Indeed, prior positive CSR has a role in mitigating stakeholders' assessment of the firm culpability providing evidence of a "good mind" by the firm and its management (Godfrey et al., 2010). Hence, the firm's bad act is consequently perceived as less malicious and out of character with the normal operations of the firm (Peloza 2006). These evidence contribute convincing stakeholders that the adverse impacts of the negative action are the exception rather than the rule (Godfrey et al. 2010) and that the negative event itself was a forgivable act, an unforeseeable event in an otherwise strong record of CSR efforts (Peloza 2006).

The positive moral capital buffers the underlying relational wealth itself and protects the relative earnings streams against the loss of economic value arising from the risks of business operations (Trieschmann & Gustavson, 1998 cited in Godfrey, 2005). Thus, CSR-based positive moral capital preserves CFP mitigating the shareholder value-loss. The protection of shareholder value is due to the mitigation of the assessment of "guilty" mind, the accordance of the benefit of the doubt to the firm and the mitigation of the attribution of blame.

"Measuring stakeholders' mental processes proves difficult, perhaps even impossible; however, we can observe whether stakeholder groups behave in a manner consistent with a theorized attribution process. Such consistency would imply that CSR activity provides 'insurance-like' protection" (Friedman, 1953 cited in Godfrey et. al, 2009, Godfrey, 2005).

In the following subsections it will be outlined how the attribution process and the *mens rea cognitive template* work.

ATTRIBUTION PROCESS

The potential of CSR to operate as an insurance policy, buffering the loss in relational wealth, has been recently investigated in an experimental study focused specifically on consumers and brand equity. The negative event considered in this study was a product-harm crisis linked to a defective product produced by a fictitious oil company. The information about previous CSR of the company was manipulated creating one case in which the company was depicted as responsible and a second case in which the firm was depicted as irresponsible. Evidence shows that consumers' attributions about a product–harm crisis are a function of consumers' CSR associations (Klein and Dawar 2004).

Attribution is a consumer cognitive process commonly activated in non-routine settings (such as in the case of negative events). In facing negative events, corporate association including CSR-associations are very likely to be activated (Brown and Dacin 1997) since consumers rely on such information in constructing attributions which are the basis of revision and updating of consumer judgments, such as brand evaluation (Klein and Dawar 2004).

According to the attribution model conceptualized by Weiner in 1980, there are three causal dimensions of attribution leading to an overall judgment of responsibility or blame: locus, stability and controllability. The first dimension refers to the fact that triggers the negative event which can be internal or external to the firm. The second dimension refers to the temporary or unchanging stability of the behavior. The third one refers to the fact that the behavior is or not in the control of the firm (Klein and Dawar 2004). If the locus is

internal and the behavior stable and controllable, stakeholders tend to attribute responsibility to the firm and hence blaming the firm itself (Klein and Dawar 2004). The attribution of blame is said to be in direct proportion to the severity of the event and the firm's apparent responsibility for the event (Benoit 1995 cited by Dean, 2004). On the other hand, when the locus is external and the behavior is temporary and not controllable by the firm, attribution of blame tend to be made to factors external to the company (Folkes, 1984 cited in Klein and Dawar, 2004).
Since attributions derive from the interaction of event-related information and the observer's prior beliefs, they may be biased from the latter (Folkes, 1988 cited in Klein and Dawar, 2004). Indeed, evidence shows that consumers' interpretations of a firm's response to a product-harm crisis are subjected to their prior expectations given by accumulated experience with the company and information about the firm past behavior included CSR (Dawar and Pillutla 2000).

An example helping illustrating the mechanism of the attribution process is the product-harm crisis which recently involved Firestone, the tire producer. Unforeseen tire blowouts caused the dead of some car drivers and Firestone recalled millions of tires. If consumers believe that the tires were poorly made, that the producer have an history of product defects and could have avoid such problems through a better quality control, they are likely to attribute the responsibility of the deaths to the company. Conversely, consumers believing that the cause of the problem was external to the company and outside of its control (such as harsh driving or cars' mechanical problems) are unlikely to attribute the responsibility to Firestone (Klein and Dawar 2004).

In line with the evidence presented above there are the results of another study which applied Weiner's model to consumer's attributions in the context of a fatal airliner crash. Also in this study consumers' attributions of the cause of the incident changed their attitudes toward the company (Jorgensen, 1994 cited in Klein and Dawar, 2004).

Hence, it has been demonstrated that the trigger of a negative event is judged as more external, less stable and less controllable for firms that can count on positive prior CSR, compared to firms that do not have positive prior CSR. This because information related to the negative event are generally interpreted in a confirmatory fashion (Klein and Dawar 2004).

Evidence confirming that stakeholders consider prior CSR in the attribution process have been found in a study investigating the insurance value from a positive CSR reputation in the chemical industry. In the days immediately following a disaster, the effects on the firms' stock price have been measured. Results show that higher level of CSR disclosure in the period prior to the disaster was a significant predictor of less-severe declines in stock price (Blacconiere and Patten 1994 cited in Peloza 2006).

Consumers reactions to positive CSR performance ("doing good") and negative CSR performance ("doing harm") have been found to be asymmetrical. Indeed, all consumers were found to react to negative CSR information whereas only those supportive of specific CSR issues reacted to positive CSR information (Sen and Bhattacharya 2001). Moreover, the impact of corporate associations on attribution has been found to depend on their relevance to consumers (Crocker, 1980; Metalsky & Abramson, 1981 cited in Klein and Dawar, 2004). Consequently, consumers who are more sensitive to CSR issues are expected to be more inclined to use information about a company's prior CSR behaviors in forming their attributions. Hence, it is expected that in current settings (i.e. not in the occurrence of negative events) only consumers who care about specific CSR issues are motivated to access CSR information and making attributions consistent with the firm's CSR records. On the other hand, it is expected that facing negative events all consumers may use prior CSR associations as a hint in the attribution of blame.

THE "MENS REA COGNITIVE TEMPLATE"

Even under the best of circumstances, business activity sometimes creates negative impacts among important stakeholder groups. When such negative events occur, stakeholders respond by punishing the firm with sanctions, having consequences on the financial performance of the company (Godfrey et al. 2009). Each stakeholder group will mete out sanctions accordingly to its power and role in society. For instance, consumers may engage in badmouthing practices or boycotts whereas governmental agencies may revoke the right to do business or condemn the company to pay fines. Sanctions may be remedial, compensatory or punitive. The first type may be represented by new regulations aimed at establishing new bounds or liabilities. The second type of sanctions is given by lawsuits and fines whereas the latter may include boycotts, negative publicity done by media or fines (Godfrey 2005).

In dealing with corporate misdeeds, law uses the so-called *"mens rea doctrine"* (*guilty mind doctrine)* which is consistent with decision making efficiency and common sense (Khanna 1999, Godfrey 2005). It argues that "actus not facit reum nisi mens sit rea" which translated means "an act does not make one guilty unless his mind is guilty" (LaFave, 2000 cited in Godfrey, 2005). Consequently, bad acts constitute an offence only when they are performed with a guilty mind. The notion that stakeholders impute moral values to corporation's actions has its roots in the earliest management studies. Indeed, individuals judge not only tangible facts but also the overall context of any interaction, imputing intentions and motivations to the actors involved (Godfrey 2005).

The doctrine of the "*mens rea"* provides a cognitive template for how groups or individuals may assess the guilty of an actor and mete out punishments and sanctions accordingly (Scott, 1995 cited in Godfrey, 2005). Punishments and sanctions are expected to be more severe when bad actions are committed by guilty actors and the degree of severity will be correlated to the attribution of the state of mind of the actor (Godfrey 2005, Godfrey et al. 2009). In the cognitive process of considering possible sanctions, the reservoir of moral capital (generated by positive prior CSR behaviors) acts as "character evidence on behalf of the firm". Indeed, it provides counterfactual evidence which mitigates the assessment of guilty mind (Godfrey 2005) reducing the probability that the firm is seen as having an evil mind, fact that would lead to harsh sanctions (Strong, 1999 cited in Godfrey, 2005). The assessment of guilty mind is mitigated since the positive moral capital encourages stakeholders giving the company the benefit of the doubt regarding intentionality, knowledge, negligence or recklessness (Godfrey 2005)

The positive moral capital derived from CSR engagement mitigates the severity of sanctions and punishments accorded by stakeholders (Fombrun et al. 2000, Godfrey et al. 2009). Indeed, when there is ambiguity over the actor's intention and character, stakeholders are encouraged by the positive moral capital to give the firm the benefit of the doubt (Uzzi, 1997 cited in Godfrey et al., 2009).

2.5.3 THE COMPLETE THEORETICAL UNDERLYING MECHANISM OF THE INSURANCE FROM CSR

In Fig. 3 the complete theoretical underlying mechanism of the insurance from CSR is reported.

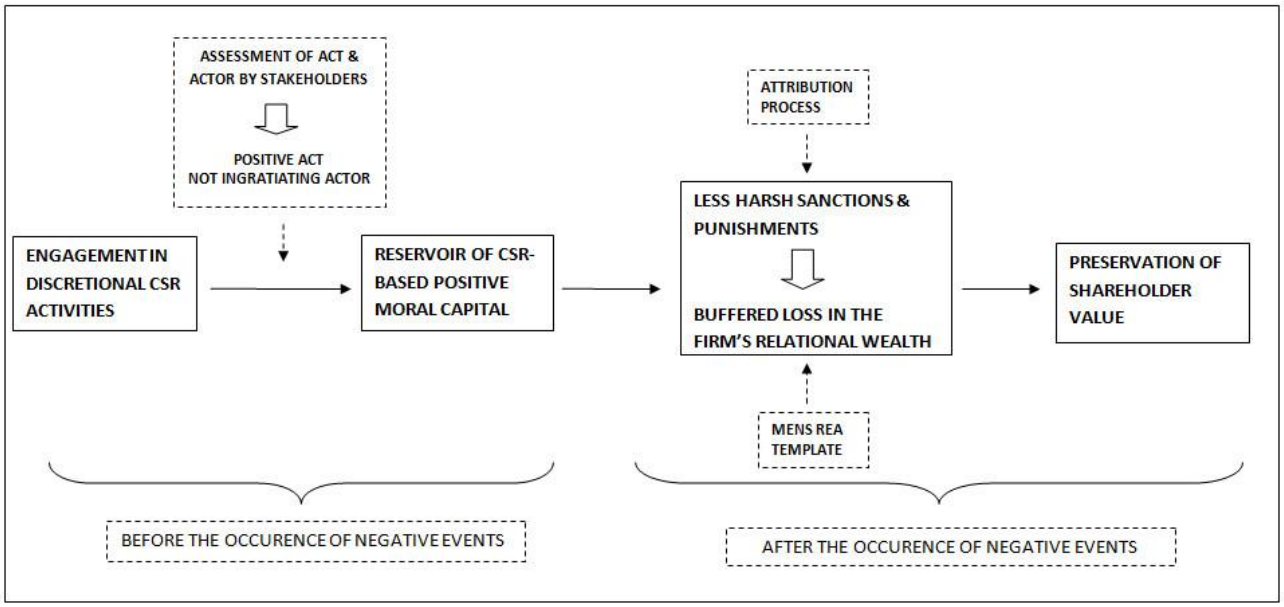


Fig. 3: Complete theoretical underlying mechanism of the insurance from CSR.

Literature shows that despite CSR activities and shareholder value map into observable variables, the mens rea template remains "an unobserved, and most likely unobservable, variable" (Godfrey and Hill 1995). Indeed, it is intra-psychic and may be a tacit or semiconscious process (Gladwell, 2005; Winter, 1987 both cited in Godfrey et al. 2009). Consequently, investors in the capital market or other stakeholders may find difficult explaining why they make rapid judgments giving or not a firm 'the benefit of the doubt' (Uzzi, 1997 cited in Godfrey et al. 2009).

It is hence expected that empirical research "cannot provide a definitive test of the underlying theoretical process of the insurance from CSR, but at best findings consistent with the theoretical argument" (Godfrey and Hill 1995, Godfrey et al. 2009). Despite that, empirical results consistent with the recently theorized arguments of the insurance from CSR would be a valuable step in proving its value. "Developing methods to uncover and understand the actual attribution processes stakeholders use to assess penalties would facilitate a quantum leap in researchers' ability to understand the insurance effects" (Godfrey et al. 2009).

2.6 FACTORS INFLUENCING FIRMS NEED TO RELY ON THE INSURANCE FROM CSR

In evaluating the need of a firm to rely on the insurance value from CSR, three factors should be assessed: industry risk, business exposure and firm size. Then, the scope and extent of the CSR program should be tailored accordingly (Brammer and Pavelin 2004, Peloza 2006).

Each factor influencing a firm's need to rely on the insurance from CSR is discussed hereafter.

INDUSTRY RISK

Industry risk is one of the components driving the type and intensity of socially responsible behaviors by firms (Godfrey 2005). Indeed, industries carry different risks of endangering/harming the natural environment and/or negatively impacting customers, suppliers, employees or the communities in which they operate. All these risks build up the so-called business risk that is affected by the nature of production processes, technologies used, products and services (Godfrey 2005, Godfrey et al. 2010). For instance, in manufacturing companies business risks may be represented by product safety. Firms belonging to riskier industries are more likely to require the insurance from CSR than either firms operating in more stable industries or industries where the potential costs of harmful events are less severe (Peloza 2006).

BUSINESS EXPOSURE

Another factor affecting the need for firms to rely on the insurance from CSR is their business exposure, defined as the degree to which a firm is vulnerable to its environment (Peloza 2006, Saiia et al. 2003). Evidence show that a firm's support for social causes is highly correlated to the faced level of business exposure (Saiia et al. 2003). Although some industries present a higher business exposure, there is a baseline of necessary insurance from CSR across all industries both in B2C and B2B (Peloza 2006).

FIRM SIZE

Compared with smaller companies, big firms usually are more diversified across geographical and product markets, have more varied stakeholder constituencies and are more visible (Brammer and Pavelin 2004). Consequently, they face greater scrutiny and social pressures from a broad range of stakeholders (Artiach et al. 2010) requiring them to manage the social consequences of their business actions, operations and conducts (Richardson et al. 1999). Moreover, firms with a larger market presence are riskier because involved in more internal and external transactions than smaller firms and thus leads to a higher probability of negative outcomes (Godfrey et al. 2009).

In light of these considerations, a passive strategy regarding sustainability issues is less acceptable for big companies than for smaller ones (Artiach et al. 2010). “If larger firms are more likely to experience negative events, either through chance or targeting from constituents (…), CSR engagement by larger firms will be more valuable because it is likely to be used more frequently in generating mens rea evidence than for smaller firms” (Godfrey et al. 2009). Hence, it is not surprising that often the largest firms in each industry are leaders in corporate social performance. Literature shows that firm size is strongly and consistently associated with high levels of Corporate Social Performance (Artiach et al. 2010) and that there is an interaction between industry and firm size, with large firms in sensitive industries most likely to engage in CSR activities and disclose CSR information (Richardson et al. 1999).

2.7 CONTINGENCES AFFECTING THE ABILITY OF CSR TO ACT AS AN INSURANCE POLICY

The ability of CSR to act as an insurance policy, mitigating the loss in relational wealth and hence protecting shareholder value, is affected by the following contingences:

- the level of effort and commitment of the firm
- the strategic fit between CSR activities and core business
- the transparency in disclosing information about CSR activities
- the promotion of CSR activities
- the industry in which the firm operates
- the effectiveness of corporate response to negative events
- the responsiveness in adapting CSR portfolios to economic/social changes

Hereafter, each factor affecting the ability of CSR to act as an insurance policy is briefly discussed.

LEVEL OF EFFORT AND COMMITMENT

In case of negative events affecting stakeholder groups or offending their ethical values, stakeholders are more likely to give the benefit of the doubt when a firm shows effort and commitment (Peloza 2006). A firm shows effort investing a considerable amount of time and resources in CSR activities. Commitment is expressed through a long-term partnerships with NGOs and sustaining the chosen causes for many years.

A pattern of consistency in CSR activities provides counterfactual evidence that decision makers engage in such activities not on an opportunistic or capricious basis. Thus reduces the risk that such investments are seen as ingratiating (Godfrey 2005). Encouraging employees volunteering or providing pro-bono company's expertise has been found to pay off more in terms of both social and economic impact than simply donating money. Moreover, when a firm makes a direct contribution of expertise providing support using its unique abilities the action is seen as less self-serving (Peloza 2006).

On the contrary, an unfocused and uncommitted approach to CSR doesn't provide insurance protection (Peloza 2006). Indeed, firms with mainly short-term relationships with NGOs and target communities are seen less favorably and judged to be exploitative of the cause (Ellen et al. 2000). Firms engaged in unfocused CSR, not integrated into the corporate culture, and having relationships with dozens of NGOs/causes are often described as affected by the "executive spouse syndrome". This expressions well

convey the image of managers in charge of choosing the CSR portfolio of activities selecting them on the basis of their personal motives instead of the relevance to the firm strategy (Peloza 2006).

STRATEGIC FIT BETWEEN CSR ACTIVITIES AND CORE BUSINESS

Firms should seek to engage in CSR activities having high degree of fit with their core business (Porter and Kramer 2006). Doing so, CSR activities are more likely to be perceived as motivated by genuine altruistic intentions. Moreover, the actions are more likely to be seen as less self-serving (Peloza 2006). Perceived altruistic and genuine intentions are needed to build up the reservoir of positive moral capital which can insure the relational wealth of a firm. Thanks to such moral capital, stakeholders are willing to give the benefit of the doubt and valuate the actor as less guilty in case of negative events (Peloza 2006).

Moreover, a high degree of fit firm/cause will gain exposure to NGOs and activist groups creating the opportunity to build a constructive dialogue and partnerships. NGOs and activists have often a relevant role in endorsing or criticizing the operate and impacts of firms' actions. Hence, it would be very important for a company having these stakeholders on its side in case of a negative event. These stakeholders could indeed intervene on the behalf of the company "giving permission" to consumers and other stakeholders to "forgive" the bad act and helping the company being seen as a good actor involved in an unforeseen bad situation. A second advantage of partnerships with NGOs is that the firm can use their advice and expertise to make better decisions in choosing the CSR portfolio of actions (Peloza 2006).

Engaging in CSR activities with a high degree of fit with the firm core strategy is expected also to be easier for the company and to reduce the risk of diluting managerial attention (Heugens and Dentchev 2007).

TRANSPARENCY IN INFORMATION DISCLOSURE

Disclosing information about CSR portfolios (reasons for specific choices, targets of the vary activities, level of support/founding and goals) is necessary. Indeed, without an adequate visibility stakeholders cannot use CSR as an informational signal of a firm's responsibility and commitment at satisfying stakeholders demands (Fombrun and Shanley 1990, Orlitzky and Benjamin 2001). Hence, firms must engage their stakeholders disclosing information about their CSR activities and ensure they are aware of the actions of the firm (Peloza 2006). One instrument often used to voluntarily disclose information about CSR is the annual sustainability report that many companies publish on their corporate web-site.

Transparency in disclosing information about CSR activities allows stakeholders to create in advance a stock of positive moral capital that can act as insurance in case of future negative events (Godfrey 2005). Moreover, firms that transparently disclose information about their CSR practices are more easily subjected to the scrutiny of interested stakeholder groups. For this reason their managers are incentivized to be accountable and engage in activities consistent with the firm's values and identity which has a greater potential to create positive moral capital (Godfrey 2005).

PROMOTION OF GOOD DEEDS

Another contingency affecting CSR ability to operate as an insurance is the way in which a company promotes its good deeds and seeks to take credits for its efforts (Peloza 2006).

Promoting CSR activities requires great care because although many consumers consider acceptable for a firm to derive some benefits from CSR (Fombrun et al. 2000, Du et al. 2010), attempts to capitalize on good deeds backfired on some firms, guilty of having spent more in promoting their actions than on the action itself (Peloza 2006). An example of CSR actions performed with positive intentions that finished to harm the actor and limited its ability to create a reservoir of goodwill as well, is the case of Philip Morris (Peloza 2006). Philip Morris has been criticized not only for having spent more on promoting its support for charity than the amount of money actually donated, but also for having aired its own antismoking campaign addressed to teenagers. Critics argued that this campaign was likely to encourage teens to smoke (Fairclough 2002).

Hence, the point of the question is how to promote good deeds without being backfired. The best strategy for building the reservoir of goodwill is corporate modesty (Peloza 2005). Indeed, many managers believe that actions always speaks louder than words (van de Ven 2008) and that over promotion might lead stakeholders to view CSR activities as self-serving. Moreover, keeping a low profile in communicating and promoting CSR reduces the risk of misalignment between communicated identity and the actual identity of the company (van de Ven 2008). Evidence shows that many managers engage in minimal or no attempts at all of self-promotion and prefer indirect promotion done by their nonprofits partners (Peloza 2005, Peloza 2006, van de Ven 2008), source that is considered as highly reliable by many stakeholders (Du et al. 2010).

Engaging external stakeholders (such as NGOs and activist groups) as partners in CSR activities can potentially have two benefits. First, reducing the need for any form of promotion to these stakeholder groups (Griffin and Mahon 1997) and second, lead them voluntarily speaking on the behalf of the firm in

the event of negative events linked to business operations (Peloza 2005). It has been demonstrated that overt self-promotion is less likely to serve as protection against negative events than third-party endorsements (Peloza 2006).

INDUSTRY

Companies whose core activities involve significant financial, production or environmental risks are expected to demonstrate higher levels of responsibility to the local communities in which they participate (Gardberg and Fombrun 2006).

The ability of CSR to operate as an insurance policy is affected by the industry in which a firm operates. Indeed, firms in the so-called "vice" or "sin" industries (such as alcohol and tobacco), firms in industry which deplete environmental resources (such as utilities) and firms in heavy polluting industries (manufacturing) have more difficulties creating a reservoir of goodwill. This is due to the fact that it is likely that their CSR engagement is seen by stakeholders as actions done to cover ongoing "sin" business practices (Peloza 2006). Evidence shows that such industries are given the benefit of the doubt only when their positive CSR did not imply profit-driven motives at all (Szykman 2004).

EFFECTIVENESS OF CORPORATE RESPONSE TO NEGATIVE EVENTS

The ability of CSR to act as an insurance may be significantly reduced if a company facing a negative event doesn't respond following the principles of the crisis management theory (Peloza 2006).

Involving stakeholders in crisis management and keeping them informed about what is happening and the actions the firm will take to solve or reduce the adverse impacts, will signal the firm' commitment to solve the issue and provide at the same time a cue for the confirmation that prior CSR were genuine. Thus, is expected to reduce the charge of hypocrisy (Peloza 2006).

One example of good response to a crisis is the *Intrawest case*. The company responded to an oil spill moving quickly to the acknowledgment of the seriousness of the spill and adopted transparency with the media and advocacy groups. A lack of transparency could lead to media speculation and the firm may be depicted as more concerned about its interest than about the affected stakeholders (Peloza 2006).

RESPONSIVENESS IN ADAPTING CSR PORTFOLIOS TO ECONOMIC/SOCIAL CHANGES

As economic and social conditions change, stakeholders' views of what constitutes a good cause to address through CSR programs shift as well (Godfrey 2005, Du et al. 2010, Richardson et al. 1999)[5]. Hence, firms should monitor what are the priority issues and adapt their CSR portfolios of activities to the changes. In doing so it is fundamental to select "hot" issues having a high degree of fit with the firm's core business (Du et al. 2010).

Being responsive in adapting CSR portfolios of activities to meet current issues and pressing needs is likely to be interpreted as a signal of genuine motivation and thus expected to increase the likelihood of generating positive moral capital (Godfrey 2005). Before dumping a CSR activity in favor of another, the firm should disclose the reasons of such a change to their dominant stakeholders in order to reduce the risk that the change would be interpreted as a cut and hence as a signal of irresponsibility.

In order to be more sure that CSR activities are responsive to current needs, a firm should consult NGOs or create a philanthropic advisory board composed also by representatives of vary stakeholder groups (Godfrey 2005).

[5] For instance, Americans ranked as priority issues crime/violence prevention, the environment and homelessness in the early 90s and education, health/disease and the environment in 2004 (Du et al. 2010).

2.8 BENEFITS FROM THE INSURANCE FROM CSR DISENTANGLED ACROSS VARY STAKEHOLDER GROUPS

A firm's potential benefits from the insurance from CSR can be disentangled across vary stakeholder groups as shown Table 7. These benefits altogether are expected to contribute to the protection of the shareholder value of a firm that has created a reservoir of positive moral capital prior to a negative event. Table 7 is expected to help the reader having a more complete picture of the insurance-like property of CSR[6].

STAKEHOLDER GROUPS	POTENTIAL BENEFITS FROM THE INSURANCE-LIKE PROPERTY OF CSR
CUSTOMERS	✓ REDUCED LOSS IN TRUST ✓ REDUCED LOSS IN LOYALTY ✓ LESS DEFECTION ✓ LESS NEGATIVE WORD OF MOUTH ✓ NO BOYCOTTS
EMPLOYEES	✓ REDUCED LOSS IN COMMITMENT ✓ REDUCED LOSS IN IDENTIFICATION WITH THE COMPANY ✓ REDUCED SELF-INTERESTED BEHAVIOR[7] ✓ REDUCED LOSS IN THE CAPACITY OF ATTRACT & RETAIN TALENTS
INVESTORS / CAPITAL MARKET	✓ REDUCED ABANDONMENT ✓ REDUCED VOLATILITY OF STOCK PRICES
ACTIVISTS AND NGOs	✓ REDUCED THREAT OF BOYCOTTS ✓ TAKING THE BEHALF OF THE COMPANY AND ALLOW OTHER STAKEHOLDERS TO "FORGIVE" THE BAD ACT
PARTNERS AND SUPPLIERS	✓ REDUCED LOSS IN TRUST ✓ REDUCED DEFECTION ✓ NO ESTABLISHMENT OF TIGHTER TERMS
COMMUNITY	✓ REDUCED RISK OF UPRISING
MEDIA	✓ REDUCED RISK OF NEGATIVE COVERAGE/PUBBLICITY ✓ REDUCED RISK OF SPECULATIONS

Table 7: Benefits from the insurance from CSR disentangled across vary stakeholder groups (Adapted from Fombrum et al., 2000 & Peloza, 2005).

[6] Analyzing in details the benefits across each stakeholder group is beyond the scope of this research.

[7] Employees' behaviors not in line with the long-term best interest of the firm (Richardson et al. 1999).

2.9 ARE ALL CSR ACTIVITIES EQUAL FOR INSURANCE PURPOSE?

To answer this questions it is necessary to investigate the insurance-like property of CSR using fine-grained measures instead of monolithic ones, as done in the past. As shown in Table 2, monolithic measures are able to capture only the overall engagement whereas fine-grained measures are expected to capture the nuances and hence boost the knowledge about the value of different CSR categories/individual activities as form of insurance (Peloza 2005).

Recently, a first step in answering this question has been done. Indeed, a study shows that the insurance effect holds for CSR activities aimed at secondary stakeholders or society at a large (i.e. Institutional CSR) whereas CSR activities targeting a firm's trading partners (i.e. Technical CSR) yields no such benefit (Godfrey et al. 2009). These findings have been explained according to the logic that TCSR activities don't create the same type of moral capital and insurance-like protection than ICSR. It is due to the fact that TCSR activities produce exchange capital, that is the potential to create more advantageous exchanges between the firm and its primary stakeholders. Hence, these activities "may be seen as wholly consistent with the firm's profit-making interest and viewed as merely self-serving, rather than other-regarding behaviors". Conversely, secondary stakeholders lack urgency and power to press their claims on the firm and so ICSR activities "provide evidence of an 'other-regarding' orientation by the firm" (Godfrey et al., 2009).

More fine-grained research evaluating the relationship between CSR engagement and its insurance value is needed, particularly in relation to employees relations (Godfrey et al. 2010).

2.10 TYPES OF NEGATIVE EVENTS AND INSURANCE FROM CSR

INTEGRITY RELATED

Integrity-related negative events are those in which the integrity or moral character of the firm is in question. Examples of such negative events are actions violating well-accepted principles of ethical behavior such as promise keeping or leading to unfair treatment of employees (Godfrey et al. 2009). Child labor abuses for instance belong to this category.

In case of integrity related-negative events, the action is almost always unambiguously evaluated as negative by stakeholders whereas the moral character/intentions of the actor need to be assessed since some stakeholders may doubt the firm good character.

In such as circumstances stakeholders are expected to solve the ambiguity either seeing actor's intentions as genuine or ingratiating. CSR engagement is expected to act as an insurance when the company can count on a reservoir of positive moral capital created in the period prior the negative event. In this case engagement in CSR will be considered evidence of good character and lack of "guilty mind". Otherwise, when the company facing the negative event cannot count on a reservoir of prior positive moral capital, stakeholders will view CSR as an evidence of hypocrisy (Godfrey et al. 2009).

Evidence shows that the strongest insurance effect from CSR has been found in the case of negative events creating doubts on a firm's fundamental character as honest and promise keeping entity. Indeed, in the context of integrity-based negative event firms engaging in CSR activities registered smaller declines in shareholder value than firms that do not (Godfrey et al. 2009).

STAKEHOLDER-BASED

Stakeholder-based negative events are those which jeopardize the well-being of stakeholders (affecting health and safety issues, endangering/polluting the environment, etc.). As for integrity-based negative events, there is little ambiguity about the badness of the act and the mens rea template has a key role in stakeholder's evaluation of the motivations of the actor (Godfrey et al. 2009). There are two possible outcomes. First, the act is viewed as the result of malevolent and self-serving intentions and hence the bad actor is considered guilty of the bad act. Second, the act is viewed as the result of facts outside the control of the management and hence the firm is seen as a good actor caught in a bad situation (Godfrey et al. 2009). When the conditions for the insurance from CSR exist, the expected outcome is the second one, leading to less harsh sanctions and punishments (Godfrey et al. 2010).

Evidence from the same study which proved the value of the insurance from CSR in case of integrity-based negative events, shows that CSR activities provide no insurance protection in case of stakeholder-based negative events (Godfrey et al. 2009). Conversely, another study investigating the insurance-like property of CSR in the case of recalls of harmful products (a specific case of stakeholder-based negative event) got evidence confirming the value of the insurance from CSR (Klein and Dawar 2004).

Stakeholder-based negative events involving defective/harmful products are called also performance-related crisis. Such negative events cause shareholder value-loss primarily reducing a brand's perceived ability to deliver functional benefits (Dawar and Pillutla 2000, Dutta and Pullig 2011) which are the core value of brand equity and largely affect brand choice (Klein and Dawar 2004). More demanding customers, the increasing complexity of products, increasing media scrutiny and the use of the Internet are making stakeholder-based negative events involving defective/harmful products an ever more frequent occurrence. Such type of negative event always leads to a product recall and evidence show that the damage to a firm's capitalization are due more to the damages to the shareholder wealth than to the recall itself (Klein and Dawar 2004).

Concluding, more research is needed to shed light on what CSR activities has the potential to ensure a firm's relational wealth in case of different negative events.

2.11 CAPITAL MARKETS REACTIONS TO CSR

Firms are valued in function of their likely future cash flows and risk in both debt and equity markets.

The rapid grown of socially responsible investments (SRI) suggests that financial markets are becoming increasingly responsive to the social, ethical and environmental consequences of companies' decisions (Derwall and Verwijmeren 2007). Moreover, it has been argued that the release of information about any value-relevant aspects of the firm and hence CSR as well, impacts capital markets' perceptions (Richardson et al. 1999), encouraging analysts monitoring the firm or resolving uncertainties about the firm riskiness or future cash flows (Gibbins et al 1992 cited in Richardson et al. 1999). The growing importance of non-financial disclosure in the overall assessment of a company's risk profile has been recently recognized by Standard and Poor (Heal 2005). However, studies investigating whether portfolios constructed by means of CSR screens do outperform or not their benchmark gave to date discordant results (Renneboog et al. 2008).

The majority of studies investigating capital markets reactions to CSR are focused on stock returns. Only recently academics have started examining whether a link between CSR and a firm's financing costs exists (Ghoul et al. 2011, Sharfman and Fernando 2008, Bassen et al. 2006).

CSR AND STOCK RETURNS

A firm's stock price is determined by "the bidding and asking process of stock market participants who rely on their perception of past, current and future returns and risk" (Orlitzky et al. 2003).

A negative correlation between a firm's CSR performance and the volatility of its stock price returns is shown by a meta-analysis done in 2001 (Orlitzky and Benjamin 2001).

Regarding the operationalization of CSR, many studies investigating the relationship between CSR and stock returns used a single CSR activity as a proxy. Conversely, a recent study (Brammer et al. 2005) used a composite CSR indicator (environment protection, community relationship and financial transparency) and found a significantly negatively relation to stock return (Shen and Chang 2009).

The event study methodology has been largely used to investigate capital markets reactions to specific negative events. Such methodology is based on the assumption that markets immediately absorb all relevant information into the stock price (Wood 2010). It is aimed at examining the gap between actual and expected stock price performance in the days immediately after some critical events (Wood 2010).

Evidence from event studies examining the link between CSR and abnormal stock returns following environmental disasters (e.g. Blacconiere and Patten 1994) shows that the capital market penalizes the firms with the worst CSR record most and that evidence of prior CSR activities and its disclosure moderate the impact on share price (Richardson et al. 1999). Another study, investigating investors' reactions to the 1999 Seattle World Trade Organization (WTO) failure, found that a reputation for social responsibility protected firms from stock declines associated with this crisis, even when controlling for possible trade and industry effects. Specifically, it has been found that firms without a positive reputation for CSR suffered stock market declines twice the size of those experienced by firms with a reputation for positive CSR (Schnietz and Epstein 2005). Such event studies show that the stock market seems to treat social costs in excess to private costs as a liability to be charged against a corporation's stock market value (Heal 2005).

To the best of our knowledge, only one empirical study examined the link between the insurance from CSR and market returns. Starting from the assumptions that negative events should generate negative stock price reactions and that CSR is expected to signal investors the presence of moral capital that may temper potential sanctions, Godfrey et al. (2009) investigated the volatility of stock prices around the time of negative events showing that no-CSR companies registered larger losses of capital.

CSR AND COST OF CAPITAL

Besides being an important determinant of a firm's valuation (Sharfman and Fernando 2008), the cost of capital is a critical component to portraying capital markets' attention to CSR (Derwall and Verwijmeren 2007). It has been argued that the cost of capital could be the channel through which capital markets encourage firms to become more socially responsible (Heinkel et al., 2001 cited in Ghoul 2011).

Since most publicly held firms generally finance themselves with both debt and equity, the firm's overall cost of capital is given by the weighted average of its cost of debt and equity capital (WACC) (Sharfman and Fernando 2008).

The cost of capital depends upon investors and lenders' assessment of the degree of risk faced by a company (Lukas et al. 2005). A firm's cost of capital is indeed the expected rate of return demanded by investors/lenders for providing capital (Derwall and Verwijmeren 2007) and bear the risk of a specific stock/debt (Fuerst 2006). It is also the rate that investors/lenders use to discount a firm's future cash flows. Hence, it is the required rate of return given the market's perception of a firm's riskiness (Ghoul et al. 2011).

Consequently, the higher the cost of capital, the lower the present value of the firm's future cash flows and the more costly is for the firm financing itself (Sharfman and Fernando 2008). Moreover, the more costly is the capital, the less chance the firm has to make a profit regardless of its level of revenues (Sharfman and Fernando 2008). A rise in investors' risk premium may also quash previously feasible projects (Fuerst 2006). Conversely, a reduced cost of capital should increases the firm's ability to make a profit from a given level of revenue and, all the other things being equal, attract more investors leading to an increased investor's base (Sharfman and Fernando 2008). A lowered cost of capital should, in turn, increase the firm's overall economic performance (Scott and Pascoe, 1984 cited in Sharfman and Fernando 2008) and so increase shareholder value. All else being equal, firms with a lower cost of capital will be more highly valued than firms with a higher cost of capital and hence more attractive to investors (Sharfman and Fernando 2008).

Evidence from a meta-analytic review shows that "risk is negatively correlated with corporate social performance" (Orlitzky and Benjamin 2001). Furthermore, prior work suggests that investors perceive socially irresponsible firms as having a higher level of risk (Frederick, 1995; Robinson et al., 2008; Starks, 2009 cited in Ghoul 2011). A possible explanation is given by the fact that potential investors/lenders may consider low-CSR firms' stock as riskier than the stock of high-CSR firms since low investments in CSR may be interpreted as a lack of management skills (Orlitzky and Benjamin 2001).

Given that socially responsible firms are generally considered to be less risky, they should have lower risk premium all other things being equal (Menz 2010). It has been showed that firms adopting a more environmentally pro-active posture experience a significant reduction in perceived riskiness to investors (Feldman et al. 1997cited in Ghoul 2011). Companies that in their business activities consume more resources or produce more waste should possess a higher risk premium than highly responsible firms (Menz 2010). Thus is assumed on the basis of prior studies showing that eco-efficient companies have better stock returns than "wasteful" companies.

Disclosing information about CSR activities is one possible path through which CSR can impact on capital market processes and affect the discount rate used by investors to value a firm's stream of cash flows (Richardson et al. 1999). Indeed, disclosing information about its CSR activities a firm reduces information asymmetries between the company and the investor community, and hence its firm's information risk as well (Hoffmann et al. 2010). Hence, disclosure can potentially translates into a lower cost of capital due to the reduced firm specific risk associated with holding equity or debts in the firm (Welker 1995 and Botosan 1997 cited in Richardson et al. 1999).

Among prior studies investigating the relationship between CSR and the cost of capital, some (e.g. Sharfman and Fernando 2008) focused on one particular dimension of CSR (such as the environment)

whereas others (e.g. Ghoul et al. 2011) took a more comprehensive approach considering more CSR dimensions/categories. Prior studies focused mainly on the cost of the equity capital, disregarding the debt financing and its cost (Sharfman and Fernando 2008).

EQUITY COST

Regarding investors in the stock market, it is still doubtful whether or not they value CSR strategies (Shih-Fang 2010). This is exemplified by the findings of two studies: Rennenboog et al. 2008 and Ghoul et al. 2011. The first research reveals no direct and conclusive empirical evidence on whether high CSR standards lead to lower cost of equity whereas the latter shows that firms with better CSR scores exhibit cheaper equity financing. Moreover the second work shows that only some of the CSR categories considered (i.e. employee relations, environmental performance, and product characteristics) are priced and associated with a cheaper equity financing, whereas all the others have little or no significant impact on firm's cost of equity (Ghoul et al. 2011). Another finding of this study is that firms related to the tobacco and nuclear power industries have significantly higher cost of equity (Ghoul et al. 2011). Such findings support the following arguments: 1) high-CSR firms have higher valuation and lower risk; 2) different CSR categories and/or activities have a different impact of the cost of equity capital (Ghoul et al. 2011). A fine-grained knowledge is fundamental for managers in charge of CSR investments decisions and is expected to allow them to invest in the activities that are priced by the capital markets.

Another study providing evidence that financial markets are attentive to CSR by affecting firms' cost of equity capital, suggests that at the aggregate level CSR does not relate to equity cost. Negative and statistically significant associations between CSR and cost of equity capital have been found only between firms scoring very high in specific CSR categories, that are environmental performance, governance and product quality. The relation between a social index (embracing diversity, human rights, employee relations, and community involvement) and the cost of equity was found to be positive (Derwall and Verwijmeren 2007).

Environmental performance and product quality resulted being significantly negative related to the cost of equity capital in both these studies. Moreover, the results of a survey to individual US investors (conducted by Epstein and Freedman 1994) suggests that, among the CSR spectrum of activities, they assign most importance to environmental performance and the quality of products and the least importance to charity donations, community involvement and diversity policies (benefits to minorities) (Derwall and Verwijmeren 2007).

DEBT COST

The cost of debt financing incurred by a company depends on the assessment of the firm's risk done by banks, bond markets and rating agencies (Sharfman and Fernando 2008). Such level of risk, called "default risk", is a function of the uncertainty inherent in a firm's future activities (Orlitzky and Benjamin 2001). The greater the uncertainty inherent in a firm's future activities, the higher will be the requested interest rate for the debt financing (Sharfman and Fernando 2008).

A recent study investigating the risk premium of debts found that bonds of socially responsible companies have, all other things being equal, a higher risk premium than those of non-socially responsible companies. The study concluded that "CSR has apparently not yet been incorporated into the pricing of corporate bonds" (Menz 2010).

Literature suggests that in Europe the credit market is dominated by institutional players and the participation of private investors is low. Hence, studies focused on European companies instead of US companies may found different results (Menz 2010). Indeed, institutional investors are expected to trade on the basis of more information, act more rationally and have the competencies to take into account complex issues like CSR in their investments (Menz 2010). Thus is expected to increase the probability that CSR will be incorporated as a factor in investment decisions (Menz 2010).

2.12 CONCEPTUAL FRAMEWORK AND HYPOTHESES

Investors and analysts are found to taking account of improvement in environmental risk factors when making investment decisions and recommendations. Moreover, evidence shows that an improved environmental risk management leads to a lower cost of capital (Sharfman and Fernando 2008).

Given that environmental management is one of the many facets of CSR and the insurance from CSR improves a firm's risk management, it is hypothesized that in the case of negative events the insurance from CSR will have a buffering effect on the increase of the risk adjusted cost of capital (Fig. 4).

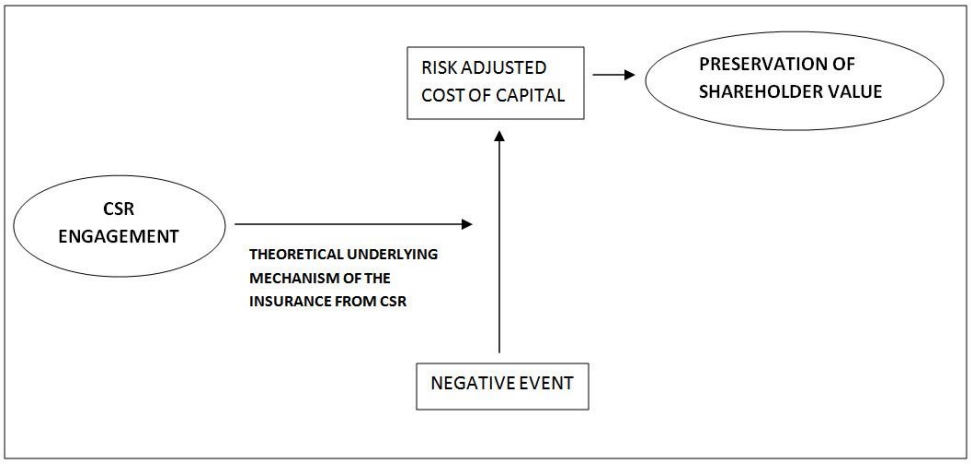


Fig. 4: Conceptual framework showing the hypothesized buffering effect of the insurance from CSR on the risk adjusted cost of capital when a company faces a negative event.

The framework focuses on the insurance-like property of CSR and other possible paths through which CSR has the potential to create shareholder value are not considered.

To the best of our knowledge, no prior studies have examined the role of the insurance from CSR in buffering the impact on the risk adjusted cost of capital in the case of negative events.

In accordance to the aim of this research, to the last research question and to the reviewed literature, the following hypotheses have been established:

H1: Facing a product recall, firms having high-CRS overall score will have a lower increase in their risk adjusted cost of capital than firms having low CSR overall score.

H2: Facing a product recall, firms having a high score in the CSR dimension "employee relations" will have a lower increase in their risk adjusted cost of capital than firms having a low score in such CSR dimension.

H3: In relation to the CSR dimension "employee relations", the CSR lever "doing good" will give more insurance than the lever "avoiding harm".

3. RESEARCH DESIGN

This chapter is structured as follows. First, the underlying logic of the two matrices developed to identify companies having high/low CSR scores is presented. Second, the formula that will be used in computing the weighted average cost of capital (used as proxy of the risk adjusted cost of capital) is detailed. Third, dependent and independent variables are presented. Fourth, the type of negative event examined and the time window considered in this research are outlined. Finally, the selective process used to identify the population satisfying the conditions needed to test the established Hypotheses is described.

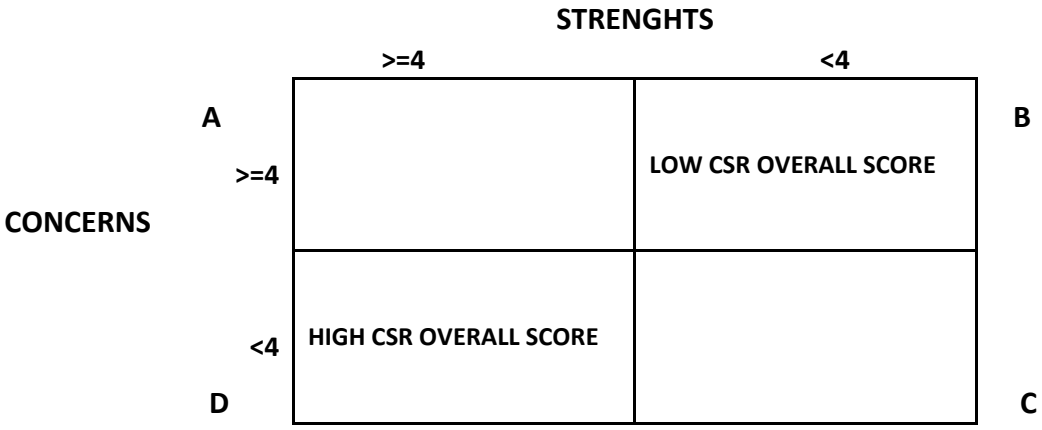
3.1 CSR MEASURES, MATRICES AND METHODOLOGY TO TEST HYPOTHESES

The established Hypotheses require to measure CSR and identify companies having high/low CSR overall score and high/low Employee Relations score. In measuring CSR the researcher will rely on the rating provided by KLD (now part of MSCI) that is largely used by academics and considered "the gold standard" (Aaron et al., 2009 cited by Minor and Morgan, 2011).

"KLD STATS is a data set with annual snap-shots of the environmental, social, and governance performance of companies" …covering…"80 indicators in seven major Qualitative Issue Areas including Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights and Product" (*source: "Getting started with KLD STATS and KLD's ratings definitions"*).

When a firm is rated by KLD analysts above a threshold in a specific indicator it receives a 1, otherwise it receives a 0. A description of the indicators is given in the Appendix 19. KLD rating provides a consistent measure of a firm's CSR activities throughout the period that will be studied in this research. The many strengths of this CSR measure have been discussed in Section 2.1.

Starting from KLD ratings, two matrices have been developed with the aim to identify companies having high/low CSR scores. The "CSR overall score matrix", reported in Fig. 5, has been obtained counting the number of CSR dimensions in which firms have strengths and concerns according to KLD rating. Given that KLD evaluates strengths and concerns in 7 "qualitative issue areas", firms having strengths in 4 or more "qualitative areas" and concerns in less than 4 "qualitative areas" have been considered as having "high CSR overall score". Similarly, firms getting a "low CSR overall score" have less than 4 strengths and 4 or more concerns in the seven qualitative issues areas. As shown in Fig. 5, firms having high and low CSR overall score are clustered respectively in cell D and cell B of the "CSR overall score matrix".



CELL A → HIGH STRENGHTS AND HIGH CONCERNS

CELL B →LOW STRENGHTS AND HIGH CONCERNS (LOW CSR OVERALL SCORE)

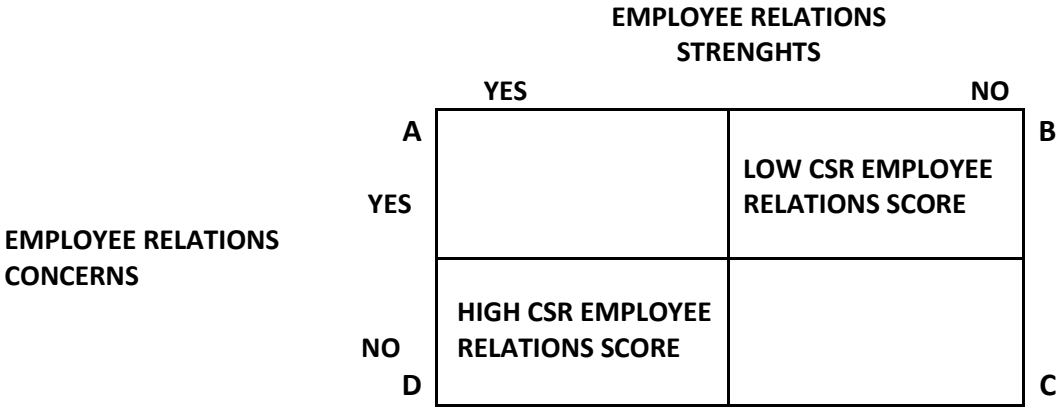
CELL C →LOW STRENGHTS AND LOW CONCERNS

CELL D → HIGH STRENGHTS AND LOW CONCERNS (HIGH CSR OVERALL SCORE)

Fig. 5: "CSR overall score matrix".

Hypothesis 1 argues that facing product recalls firms having high CSR overall score will have a lower increase in their risk adjusted cost of capital than low CSR overall score firms. In testing Hypothesis 1, the mean % changes in the Weighted Average Cost of Capital (WACC) after product recalls of low and high CSR overall score firms will be compared.

On the other hand, the "CSR Employee Relations score matrix" presented in Fig. 6 will be used in testing the formulated Hypotheses 2 and 3.



CELL B → LOW CSR EMPLOYEE RELATIONS SCORE

CELL D → HIGH CSR EMPLOYEE RELATIONS SCORE

Fig. 6: "CSR Employee Relations score matrix".

The “CSR Employee Relations score matrix” has been obtained starting from the KLD “Employee Relations Number of strengths” and “Employee Relations Number of concerns”. As shown in Fig. 6, firms having a high score in Employee Relations do have strengths and don’t have concerns in such dimension. Conversely, firms having a low CSR Employee Relations score do have concerns and don’t have strengths in such specific dimension. High CSR Employee Relations firms are clustered in cell D whereas companies having low CSR Employee Relations score are in cell B of the matrix.

Hypothesis 2 argues that, facing product recalls, firms having a high score in the CSR dimension “employee relations” will have a lower increase in their risk adjusted cost of capital than firms having a low score in such CSR dimension. In testing Hypothesis 2, the mean % changes in WACC after product recalls of low and high CSR Employee Relations score firms will be compared.

Hypothesis 3 focuses on the CSR dimension Employee Relations and argues that, facing a product recall, the positive lever of CSR “doing good” gives more insurance than the lever “avoiding harm”. Each cell of the “CSR Employee Relations score matrix” (Fig. 6) is given by the combination of two dimensions “strengths” and “concerns”, where the first corresponds to “doing good” and the latter to “doing harm”. In terms of the two levers “doing good” and “avoiding harm”, the four cells of the “CSR Employee Relations score matrix” in Fig. 6 are labeled as follows:

- Cell A → doing good and not avoiding harm
- Cell B → not doing good and not avoiding harm
- Cell C →not doing good and avoiding harm
- Cell D → doing good and avoiding harm.

Companies in cells A&D perform well in the positive lever of CSR (doing good) and differ in their standing in relation to the negative lever (not avoiding/avoiding harm respectively). Similarly, firms in cells B&C perform badly in the positive lever of CSR in relation to the CSR Employee Relations dimension (not doing good) and differ in their standing in relation to the negative CSR lever (not avoiding/avoiding harm respectively). To isolate the impact of the lever “doing good”, the Δ_1 between the mean % changes in WACC in the short, medium and long term of the cells A&D and B&C will be computed. The Δ_1 shows the contribution of performing well in the positive CSR lever “doing good” compared to performing badly in such lever.

Similarly, companies in cells C&D perform well in the negative lever of CSR (avoiding harm) and differ in relation to their standing regarding the positive CSR lever (not doing good/doing good respectively). On the other hand, firms in cells A&B perform badly in the negative CSR lever (doing harm) and differ in relation to their standing regarding the positive CSR lever (doing/not doing good respectively). To isolate the impact of

the lever "avoiding harm", the Δ_2 between the mean % changes in WACC in the short, medium and long term of the cells C&D and A&B will be computed. The Δ_2 shows the contribution of performing well in the negative CSR lever "avoiding harm" compared to performing badly in such lever (not avoiding harm = dong harm).

Hypothesis 3 will be tested comparing the two deltas. If the result is $\Delta_1 < \Delta_2$ (where Δ_1 is the contribution of "doing good" compared to perform badly in the positive CSR lever and Δ_2 is the contribution of "avoiding harm" compared to perform badly in the negative CSR lever), it can be concluded that "doing good", in relation to the Employee Relations dimension, gives more insurance than "avoiding harm".

3.2 WEIGHTED AVERAGE COST OF CAPITAL COMPUTATION

To test the established Hypotheses it is also necessary to compute the % changes in WACC after products recalls. In this research the weighted average cost of capital (WACC) will be used as proxy for the risk adjusted cost of capital. In order to estimate the % changes it is needed to first compute WACC. It will be computed on a quarterly basis using data from three different sources that are COMPUSTAT QUARTERLY NORTH AMERICA, CRSP (Center for Research in Security Prices) and the US DEPARTMENT OF THE TRESURY. It will be computed according to the formula reported hereafter. The formula is followed by the description of each of its term and the indication of the COMPUSTAT ITEMS used to compute each of them is reported as well.

$WACC = r_D * (1-Tc) * (D/V) + r_E * (E/V)$

r_D = cost of debt = XINTQ/(DLCQ+DLTTQ)

Tc = corporate tax rate = marginal tax rate = TXTQ/PIQ

D = market value of the firm's debt = total debt = DLTTQ + DLCQ

E = market value of the firm's equity = (CSHOQ*PRCCQ) + PSTKQ

V = market value of the firm = DLTTQ + DLCQ + (CSHOQ*PRCCQ) + PSTKQ

D/V = % of financing that is debt

E/V = % of financing that is equity

r_E = cost of equity = $r_f + \beta (r_m - r_f)$

r_f = risk free rate (the US treasury bond 10-years yields have been used)

β = annual beta (from CSRP)

r_m = expected market return (assumed as 11%).

3.3 VARIABLES

INDEPENDENT VARIABLES

In Hypothesis 1 → CRS OVERALL SCORE given by the two dimensions: "number of CSR dimensions in which the firm has strengths" and "number of CSR dimensions in which the firm has concerns".

In Hypotheses 2 and 3 → CSR EMPLOYEE RELATIONS SCORE given by strengths and concerns in the Employee Relations dimension.

DEPENDENT VARIABLE → mean % change in the Weighted Average Cost of Capital (WACC) after product recalls.

3.4 TYPE OF NEGATIVE EVENT AND TIME WINDOW CONSIDERED

In the USA, the Food and Drug Administration (FDA) is the governmental authority that controls the safety of food, drugs, medical devices and biological products (such as human tissues and blood). FDA classifies product recalls into three classes ranging from I to III according to the level of hazard involved, where class I means the highest level of hazard. A brief description of each class of hazard id reported hereafter for the convenience of the reader.

"Class I → dangerous or defective products that predictably could cause serious health problems or death" (e.g. food found to contain botulin toxin, food with undeclared allergens, a label mix-up on a lifesaving drug, or a defective artificial heart valve).

"Class II →products that might cause a temporary health problem, or pose only a slight threat of a serious nature" (e.g. a drug that is under-strength but that is not used to treat life-threatening situations).

"Class III →products that are unlikely to cause any adverse health reaction, but that violate FDA labeling or manufacturing laws (e.g. a minor container defect and lack of English labeling in a retail food)[8].

This research will consider food, drugs and medical devices' recalls of class I and II published in the years 2004, 2005 and 2006 in the FDA Enforcement Reports. FDA Enforcement Reports are published weekly and

[8] Source: "FDA 101: Product Recalls From First Alert to Effectiveness Checks" consulted on June 28 2011 at http://www.fda.gov/downloads/ForConsumers/ConsumerUpdates/UCM143332.pdf

contain information on actions taken in connection with the agency regulatory activities. They are publicly available starting from 2004 at http://www.fda.gov/Safety/Recalls/EnforcementReports/default.htm.

To solve any possible doubt about what is the company to blame for the harmful products, only the recalls in which the manufacturer and the recalling firms coincide will be considered.

3.5 SELECTIVE PROCESS OF THE POPULATION AND FIRMS CONSIDERED IN THIS RESEARCH

The population considered in this research is given by the US publicly traded food and pharmaceutical manufacturing companies that match simultaneously three conditions: 1) having had one or multiple product recalls of class I or II published in the FDA Enforcement Reports in the years 2004, 2005 and 2006; 2) all the necessary data to compute WACC for at least three year-quarters before and after the quarter of the recall's publication are available in COMPUSTAT QUARTERLY NORTH AMERICA and CRSP; 3) KLD rating for the year before the occurrence of the recalls is available.

If only the first two conditions were matched it would not be possible to measure CSR and cluster the population in the cells of the "CSR overall score matrix" and "CSR Employee Relations score matrix". Similarly, if only the first and third conditions were matched it would not be possible making any consideration about the % changes in WACC. Finally, as for any other form of insurance, the potential "cushion" effect of the insurance from CSR can be investigated only after the occurrence of negative events.

Only after having identified the population and clustered it in the cells of both the "CSR overall score matrix" and "CSR Employee Relations score matrix", it will be possible to decide the best sampling procedure. The researcher thinks to randomly extract from each cell of the population's matrices a probabilistic sample. Thus should allow the use of inferential statistical tests.

Statistical parametric inferential tests such as the t-test and the analysis of variance (ANOVA) and their corresponding non parametric tests (used for instance when the assumption of normality is violated but the assumption of homogeneity of variance is matched) are largely used to extrapolate the findings obtained with samples to the population using probabilistic criteria. Inferential tests are indeed used to test hypotheses referred to a population starting from the estimates computed for samples. Whenever one or more of the assumptions of parametric/non parametric tests are not met the results are not reliable. A common assumption is that the sample has to be extracted randomly from the population, i.e. all the items

have an equal probability to be extracted. Besides that, each parametric and non parametric test has its own assumptions that have to be matched in order to get reliable results. For instance, besides a random selection of samples the ANOVA test assumes that: 1) the samples are extracted from populations having normal distribution (if this can't be assumed with a reasonable degree of certainty each of the samples/groups need to have a normal distribution); 2) homogeneity of variance; 3) the observations are independent from each other (e.g. no measures done on the same firm in different quarters or years).

However, the eventuality that the population might be of a size that prevents any randomly sampling technique (for instance because some cells of interest might contain few firms years) has to be considered. If it was the case, the choice would be between using a non-probabilistic sampling technique or performing computations and analysis on all the firms years and product recalls. The second one is to prefer since it is expected to give stronger evidence in line or not with the expectations established in the Hypotheses. At least, results would be valid for the examined population and not only for some specific opportunistically chosen cases.

The population considered in this research will be identified through the four steps detailed hereafter.
First, the set of firms years matching the second and third conditions will be identified merging data from COMPUSTAT QUARTERLY NORTH AMERICA, CRSP and KLD and will result by the combination of three clusters called A, B and C. Cluster A will contain all the publicly traded US food, drugs and medical devices manufacturing companies[9] that are in the KLD dataset in the year 2003 and continuously from 2003 to 2005 both in COMPUSTAT QUARTERLY NORTH AMERICA and CRSP. To cluster B will belong all the publicly traded US food, drugs and medical devices manufacturing companies that are in the KLD dataset in the year 2004 and continuously from 2004 to 2006 both in COMPUSTAT QUARTERLY NORTH AMERICA and CRSP. Finally, to cluster C will belong all the publicly traded US food, drugs and medical devices manufacturing companies that are in the KLD dataset in the year 2005 and continuously from 2005 to 2007 both in COMPUSTAT QUARTERLY NORTH AMERICA and CRSP. This selective process allows to compute WACC at least three quarters before and three quarters after one recall in year t, independently of the quarter in which it happens since financial data will be available for both the previous and following year (t-1 and t+1, respectively). Moreover, it is expected to be the best path to get companies matching the conditions about WACC and KLD. Indeed, considering as intermediate set only the firms that are in KLD continuously from 2003 and 2005 and in COMPUSTAT and CRSP continuously from 2003 to 2007 would likely lead to a much

[9] To be more specific the following Standard Industry Classification (SIC) codes will be considered: food (SIC codes starting by 20); drugs (SIC codes 2833 and 2834) and medical devices (SIC codes starting with 384, 385 and 382 excluding 3822, 3825 and 3827). A list of the Standard Industry Classification will be provided in Appendix 18.

smaller set of firms. Indeed, both the databases and particularly KLD present discontinuities in the evaluated companies.

Second, the set of companies given by the combination of clusters A, B and C will be then refined excluding the firms that had mergers, acquisitions or accounting changes in the considered period (signaled by the "comparability status" in COMPUSTAT). The reason is that such conditions might make financial data in one year not comparable to other years and thus would invalidate the considerations done on eventual WACC variations.

Third, the resulting set of firms will be further refined excluding the year-quarters for which not all the data needed to compute WACC are available.

Finally, the resulting set of companies will be used to look for product recalls of classes I and II in the weekly FDA Enforcement Reports published in the years 2004, 2005 and 2006.

Concluding, the population considered in this research is given by all the firms that had in any of the years 2004, 2005 and 2006 one or multiple product recalls of class I or II published in the FDA Enforcement Reports, for which the WACC can be computed continuously for at least three year-quarters before and three year-quarters after the quarter of the publication of the recalls and KLD rating of the year preceding the recall is available[10].

[10] The following considerations are addressed to the reader that might be wondering why not considering all the US manufacturing companies obtained merging KLD and COMPUSTAT as population and the company which had recalls as sample. First, such sample would neither be probabilistic nor representative of a population that let's say is given by 15% of companies that had recalls in the time window considered. Second, one probabilistic sample extracted from such population would be consisting of a great majority of companies that had no recalls obscuring under "a tons of noise" the aspect that the researcher is interested in, i.e. the buffering effect of the insurance from CSR. Indeed, as explained in the literature review, the benefits of any insurance can be appreciated only after the occurrence of negative events.

4. EMPIRICAL RESULTS AND ANALYSIS

This chapter is structured as follows. First, the results of the selective process detailed in Section 3.5 are discussed and some considerations on the firms investigated in this research are done. Second, the correlation matrix between WACC and its components is analyzed. Third, the template used to compute β on a quarterly basis is presented. Fourth, the empirical results obtained clustering the firms in the "CSR overall score matrix" are discussed and Hypothesis 1 is tested. Fifth, the empirical results obtained clustering the firms in the "CSR Employee Relations score matrix" are detailed and Hypothesis 2 is tested. Sixth, the considerations emerged from an in-depth analysis of the graphs plotting WACC and N. recalls time-series of the high/low CSR Employee Relations score firms are outlined[11]. Such descriptive considerations would have not emerged through the quantitative analysis done to test the formulated Hypotheses. Finally, the process used in testing Hypothesis 3 is detailed and results are analyzed.

[11] The whole analysis is reported in the Appendix since it is an extra work completing the established research design.

4.1 RESULTS OF THE SELECTIVE PROCESS AND FIRMS CONSIDERED IN THIS RESEARCH

The first three steps of the selective process detailed in Section 3.5 resulted in a set of 376 firms years (e.g. Abbott 2004) matching the conditions about KLD and WACC. The last step, consisting in searching for recalls of class I and II had by the 376 firms years in 2004, 2005 and 2006 resulted in a population of 52 firms years. Hence, roughly 13.8% of the 376 firms years had recalls. Thus shows that product recalls of classes I and II are quite an infrequent event in the typical life of a company. Furthermore, it is a valuable indication for future studies that would like to use the same or a similar research design focusing on the same sectors.

Given the narrow size of the obtained population (52 firms years) and its distribution in both the "CSR overall score matrix "(Fig. 7) and in the "CSR Employee Relations score matrix (Fig. 8), it has been decided to do computations and data analysis on all the 52 firms years. Statistical inferential tests will be run to test the formulated Hypotheses. Indeed, the population considered in this research can be seen as a sample of a "not yet defined bigger population".

		STRENGHTS >= 4	STRENGHTS < 4
	A		LOW CSR OVERALL SCORE B
>= 4		1 FIRMS YEARS 1 RECALLS	3 FIRMS YEARS 36 RECALLS
CONCERNS		HIGH CSR OVERALL SCORE	
< 4		2 FIRMS YEARS 5 RECALLS	46 FIRMS YEARS 158 RECALLS
	D		C

Fig. 7: Distribution in the "CSR overall score matrix" of the population (52 firms years and 200 product recalls).

		STRENGHT EMP. RELATIONS YES	STRENGHT EMP. RELATIONS NO
	A		LOW CSR EMP. REL. SCORE B
YES		3 FIRMS YEARS 17 RECALLS	17 FIRMS YEARS 72 RECALLS
CONCERN EMP. RELATIONS		HIGH CSR EMP. REL. SCORE	
NO		9 FIRMS YEARS 36 RECALLS	23 FIRMS YEARS 75 RECALLS
	D		C

Fig. 8: Distribution in the "CSR Employee Relations score matrix" of the population (52 firms years and 200 product recalls).

Hereafter, it will be shown that the 52 firms years considered in this research are not "the ugly duck of the sector". First, it will be given evidence that their distribution in the cells of the two matrices is not so different from the distribution of the 376 firms years used as proxy of the sectors. Second, it will be shown that the 52 firms years considered in this research are not so different from the 376 firms years in relation to the following financial characteristics:

- Total assets (millions of $)
- Property, plant and equipment total gross (millions of $)
- Property, plant and equipment total net (millions of $)
- Number of employees (thousands)
- Market value total fiscal (millions of $).

Looking at Figures 7 and 9 it can be seen that in both the CSR overall score matrices the majority of firms years is in cell C. Moreover, few companies are in cells B and D standing as "irresponsible in relation to CSR" and as "CSR champions" respectively.

Moving the focus to the two CSR Employee Relations score matrices (Fig. 8 and 10), in both cases the majority of firms years is in cell C and the firms years in cell B are the 32,7% of the total. Finally, it can be seen that in both cases cell D is the third one in decreasing order of size and contains few companies standing as "CSR champions".

Fig. 9: Distribution in the "CSR overall score matrix" of the 376 firms years used as proxy of the sectors.

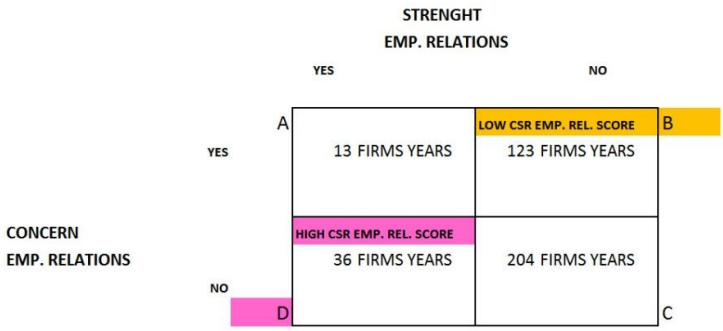


Fig. 10: Distribution in the "CSR Employee Relations score matrix" of the 376 firms years used as proxy of the sectors.

Regarding the financial characteristics, the 52 firms years show to be not so different from the sectors apart from having had product recalls in the considered time window. Thus has been checked importing in SPSS 18.0 the data about “Assets Total”, “Property Plant and Equipment” , “Number of employees” and “Market value total fiscal” for both the sets of firm years, i.e. the 376 and the 52 firms years. The descriptive statistics produced by SPSS are reported in Appendix 20. It has been verified that the means of the financial variables computed for each cell of both the “CSR overall score matrix” and the “CSR Employee Relations score matrix” containing the 376 firms years (proxy of the sectors) are within the confidential intervals at the 0.01 level of the means of the respective cells of the matrices containing the 52 firms years.

4.2 CORRELATIONS BETWEEN THE WEIGHTED AVERAGE COST OF CAPITAL AND ITS COMPONENTS

The weighted average cost of capital (WACC) has been computed quarterly for all the 376 firms years using the formula presented in Section 3.2, obtaining 2676 measures.

After that, a correlation analysis has been ran in SPSS 18.0 and the results are reported in Table 8 and briefly commented hereafter.

Correlations

		TC = CORPORATE TAX RATE	D/V WEIGHT OF DEBT	E/V WEIGHT OF EQUITY	Rf RISK FREE RATE	Rd*(1-TC) AFTER TAX COST OF DEBT	BETA ANNUAL FROM CRSP	Re COST OF EQUITY	WACC (PROXY OF RISK ADJUSTED COST OF CAPITAL)	Rd*(1-Tc)*D/V debt component	Re*E/V equity component
WACC (PROXY OF RISK ADJUSTED COST OF CAPITAL)	Pearson Correlation	,006	-,439**	,439**	,044*	,018	,927**	,927**	1	-,100**	1,000**
Re COST OF EQUITY	Pearson Correlation	,005	-,092**	,092**	,038*	,010	,998**	1	,927**	-,018	,927**

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

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

Table 8: Correlations coefficients and statistical significance of WACC’s components (N=2676).

Starting from the correlations between WACC and its equity and debt components (in the last two columns of Table 8), it can be seen that both correlations are significant at the 0.01 level but different in sign and coefficients. Indeed, the correlation between WACC and its equity component is positively significant and equal to 1 whereas the correlation between WACC and its debt component is negatively significant and equal to -0.1. Furthermore, looking at "weight of equity" and "cost of equity" (i.e. the two elements of the equity component) it can be seen that both are significantly correlated with WACC at the 0.01 level. Moreover, the "cost of equity" is among the two the most correlated with a coefficient of 0,927. In according to the CAPM model, the "*cost of equity"* is computed using the following formula: Rf + β*(Rm - Rf) where "Rm" is assumed in this study constantly equal to 11. Looking at the correlations between "cost of equity" and WACC's components (in the second part of Table 8) the output shows that the correlations between "Re"&"Rf" and "Re"&"β" are 0,038 and 0,998 respectively. In light of such considerations it can be concluded that the element that influence most WACC and its variations is β. It is confirmed also by the positively significant correlation at 0.01 level between WACC and β that is equal to 0,927.
In light of the high correlation between β and WACC, the initial choice of using annual betas (as provided by CRSP) resulted limiting and not consistent with the fact of having all the other collected data on a quarterly basis. Indeed, using a constant β in the four quarters of one year would have prevented the possibility of making considerations about variations in the company's riskiness within one same year.

To solve this weakness it has been decided to compute betas on a quarterly basis. Thus will allow to make consistent considerations on a quarterly basis about: 1) the variation of companies' riskiness within one year; 2)the variations of WACC; 3) the insurance value of CSR.

4.3 TEMPLATE FOR THE COMPUTATION OF β ON A QUARTERLY BASIS

In order to compute β on a quarterly basis two sets of data are needed: 1) the daily closing stock price of a specific company and 2) the daily closing stock price of its stock market.

Data about historical stock prices can be found in CRSP and are also freely downloadable from websites such as Google Finance and Yahoo Finance. Moreover, all the three sources provide information about the stock market on which a specific stock is traded.

Quarterly betas for all the 52 firms years considered in this research have been computed using stocks daily closing price and their actual stock markets. Hence, betas of the companies traded on NYSE have been computed using the closing price of such Index and the same has been done for the companies traded on NASDAQ. The use of the actual stock market instead of a proxy is expected to give results closer to reality.

The formula used to compute the quarterly betas is as follows:

β = Covariance (stock versus market returns)/ variance of the stock market

The template reported in Fig. 11 has been developed to speed up quarterly betas computations.

Stock Ticker: K NYSE

	Beta	
	NYSE	K
	1.000	0.767

	Beta	
	NASDAQ	K
	1.000	0.401

	Beta	
	S&P 500	K
	1.000	0.793

	Beta	
	NYSE	K
	1.000	0.461

	Beta	
	NASDAQ	K
	1.000	0.232

	Beta	
	S&P 500	K
	1.000	0.536

		Daily Stock Prices					Returns			
	Day Market	Day Stock	K	NYSE	NASDAQ	S&P500	K	NYSE	NASDAQ	S&P500
Q1	02/01/2004	02/01/2004	37.8	6451.26	2006.68	1108.48				
	05/01/2004	05/01/2004	38.25	6534.58	2047.36	1122.22	0.0119	1.29%	2.03%	1.24%
	06/01/2004	06/01/2004	37.88	6541.15	2057.37	1123.67	-0.0097	0.10%	0.49%	0.13%
	07/01/2004	07/01/2004	37.61	6525.3	2077.68	1126.33	-0.0071	-0.24%	0.99%	0.24%
	08/01/2004	08/01/2004	37.82	6569.32	2100.25	1131.92	0.00558	0.67%	1.09%	0.50%
	09/01/2004	09/01/2004	37.45	6526.17	2086.92	1121.86	-0.0098	-0.66%	-0.63%	-0.89%
	12/01/2004	12/01/2004	37.77	6543.68	2111.78	1127.23	0.00854	0.27%	1.19%	0.48%
	13/01/2004	13/01/2004	37.36	6509.45	2096.44	1121.22	-0.0109	-0.52%	-0.73%	-0.53%
	14/01/2004	14/01/2004	38.08	6559.81	2111.13	1130.52	0.01927	0.77%	0.70%	0.83%
	15/01/2004	15/01/2004	37.3	6550.04	2109.08	1132.05	-0.0205	-0.15%	-0.10%	0.14%
	16/01/2004	16/01/2004	37.89	6567.68	2140.46	1139.83	0.01582	0.27%	1.49%	0.69%
	20/01/2004	20/01/2004	37.44	6599.48	2147.98	1138.77	-0.0119	0.48%	0.35%	-0.09%
	21/01/2004	21/01/2004	37.86	6658.32	2142.45	1147.62	0.01122	0.89%	-0.26%	0.78%
	22/01/2004	22/01/2004	37.65	6657.09	2119.01	1143.94	-0.0055	-0.02%	-1.09%	-0.32%
	23/01/2004	23/01/2004	37.87	6626.82	2123.87	1141.55	0.00584	-0.45%	0.23%	-0.21%
Q2	26/01/2004	26/01/2004	38.11	6672.04	2153.83	1155.37	0.00634	0.68%	1.41%	1.21%
	27/01/2004	27/01/2004	38.01	6639.78	2116.04	1144.05	-0.0026	-0.48%	-1.75%	-0.98%
	28/01/2004	28/01/2004	38	6555.97	2077.37	1128.48	-0.0003	-1.26%	-1.83%	-1.36%
	29/01/2004	29/01/2004	38.44	6555.71	2068.23	1134.11	0.01158	0.00%	-0.44%	0.50%
	30/01/2004	30/01/2004	37.81	6551.63	2066.15	1131.13	-0.0164	-0.06%	-0.10%	-0.26%
	02/02/2004	02/02/2004	37.56	6568.7	2063.15	1135.26	-0.0066	0.26%	-0.15%	0.37%
	03/02/2004	03/02/2004	37.2	6574.82	2066.21	1136.03	-0.0096	0.09%	0.15%	0.07%
	04/02/2004	04/02/2004	37.75	6526.1	2014.14	1126.52	0.01478	-0.74%	-2.52%	-0.84%
	05/02/2004	05/02/2004	37.72	6544.28	2019.56	1128.59	-0.0008	0.28%	0.27%	0.18%
	06/02/2004	06/02/2004	38.05	6632.67	2064.01	1142.76	0.00875	1.35%	2.20%	1.26%
	09/02/2004	09/02/2004	38.15	6641.82	2060.57	1139.81	0.00263	0.14%	-0.17%	-0.26%
	10/02/2004	10/02/2004	38.45	6677.04	2075.33	1145.54	0.00786	0.53%	0.72%	0.50%
	11/02/2004	11/02/2004	38.7	6751.05	2089.66	1157.76	0.0065	1.11%	0.69%	1.07%
	12/02/2004	12/02/2004	38.55	6716.19	2073.61	1152.11	-0.0039	-0.52%	-0.77%	-0.49%

Fig. 11: Template for the computation of quarterly betas.

Being user-friendly it can be used also by users interested in computing betas on themselves but who are not familiar with linear regression techniques. Indeed, having all the formulas already set, it doesn't require any specific statistical knowledge and is very helpful in speeding up computations when it is required to

compute betas of many companies in a specific time window. Indeed, after having entered the dates of the closing price of the market in “column I” and its closing price in “columns L, M or N”, the model can be saved. After that, it is just needed to enter the daily closing price of the examined stock in “column K” and the corresponding dates in “column J”. Automatically, the betas will be displayed in the “column C” in the boxes referred to the market on which the company stock is traded. “Column F” is a check column that computes the difference between the “Day market” and “Day stock” warning the user if the imported dates don’t coincide, fact that would result in wrong beta computation. If everything is ok, “column F” will contain all zeros and will be colored in yellow as shown in Fig. 11. Otherwise, in case of errors in importing dates it will show the difference between the two entered dates and cells won’t be highlighted in yellow.

The empty template and some computations done for this research are reported in Appendices 7 and 8. The author will make all the computations available to the interested reader.

Writing an application program it will be possible to speed up greatly β computations, automating the data input and the creation of the desired outputs.

Fig. 12 is an extract of the Excel spreadsheet (reported in Appendix 9) containing all the results of the β and WACC computations. It shows that the computation of quarterly β allows a more fine grained analysis of the WACC variations from one quarter to another and hence better represents reality.

Data Date	Ticker Symbol	TC = CORPORATE TAX RATE=MARGINAL TAX RATE (MILLIONS OF DOLLARS)	TOTAL DEBT (MILLIONS OF DOLLARS)	MARKET VALUE OF EQUITY (MILLIONS OF DOLLARS)	D/V WEIGHT OF DEBT	E/V WEIGHT OF EQUITY	Rf RISK FREE RATE (US TREASURY BOND 10-YEARS YIELDS)	Rd	Rd*(1-TC) AFTER TAX COST OF DEBT	Rm expected market return assumption	Rm-Rf equity market premium	BETA ANNUAL FROM CRSP	Re COST OF EQUITY COMPUTED USING ANNUAL BETA	WACC COMPUTED USING BETA ANNUAL FROM CRSP	QUARTERLY BETA COMPUTED USING DAILY STOCK PRICES	Re COST OF EQUITY COMPUTED USING QUARTERLY BETA	WACC COMPUTED USING QUARTERLY BETA
31/03/2003	AGN	0.280	620.600	8865.663	0.065	0.935	3.83	0.006	0.004	11	7.170	0.61605	8.247	7.708	0.757	9.254	8.649
30/06/2003	AGN	0.406	625.800	10054.919	0.059	0.941	3.54	0.007	0.004	11	7.460	0.61605	8.136	7.659	0.915	10.367	9.760
30/09/2003	AGN	0.280	628.700	10274.265	0.058	0.942	3.96	0.006	0.004	11	7.040	0.61605	8.297	7.819	0.901	10.304	9.710
31/12/2003	AGN	-0.726	597.700	9996.284	0.056	0.944	4.27	0.006	0.010	11	6.730	0.61605	8.416	7.942	0.929	10.521	9.928
31/03/2004	AGN	0.302	593.200	11050.292	0.051	0.949	3.86	0.006	0.004	11	7.140	1.04979	11.356	10.777	0.794	9.532	9.047
30/06/2004	AGN	0.248	602.800	11793.275	0.049	0.951	4.62	0.006	0.005	11	6.380	1.04979	11.318	10.768	0.625	8.607	8.188
30/09/2004	AGN	0.304	589.900	9524.291	0.058	0.942	4.14	0.012	0.008	11	6.860	1.04979	11.342	10.681	0.999	10.992	10.351
31/12/2004	AGN	0.299	583.200	10653.976	0.052	0.948	4.24	0.007	0.005	11	6.760	1.04979	11.337	10.748	1.532	14.597	13.840
31/03/2005	AGN	0.329	580.100	9059.444	0.060	0.940	4.5	0.008	0.005	11	6.500	0.88786	10.271	9.653	0.878	10.209	9.595
30/06/2005	AGN	0.754	577.900	11142.743	0.049	0.951	3.94	0.008	0.002	11	7.060	0.88786	10.208	9.705	0.458	7.172	6.819
30/09/2005	AGN	0.115	701.600	12056.551	0.055	0.945	4.34	0.007	0.006	11	6.660	0.88786	10.253	9.690	0.797	9.651	9.120
31/12/2005	AGN	0.172	747.100	14339.679	0.050	0.950	4.39	0.007	0.005	11	6.610	0.88786	10.259	9.751	0.585	8.254	7.845

Fig. 12: Annual and quarterly betas for one of the firm considered in this research.

4.4 "CSR OVERALL SCORE MATRIX" AND HYPOTHESIS 1

4.4.1 EMPIRICAL RESULTS

The 52 firms years and 200 product recalls considered in this research have been clustered in the "CSR overall score matrix" on the basis of the number of CSR dimensions in which a specific firm has strengths and concerns. According to the research design, firms having strengths in 4 or more of the seven qualitative areas evaluated by KLD and concerns in less than 4 of the 7 qualitative areas are considered having a HIGH CSR OVERALL SCORE. Similarly, firms getting a LOW CSR OVERALL SCORE are the ones having less than 4 strengths and 4 or more concerns in the KLD qualitative areas.

Fig. 13 and Fig. 14 are Extracts of the Excel spreadsheet used to automatically cluster firms years and recalls in the cells of the "CSR overall score matrix". The complete spreadsheet is reported in the attached CD-ROM in Appendix 2.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	TYPE	Ticker	Year KLD (t-1)	YEAR RECALL (t)	Company KLD Name	TOT CLASS I RECALLS (RECALLER= MANUFACTURER)	Q1	Q2	Q3	Q3	TOT CLASS II RECALLS (RECALLER=MANUFACTURER)	Q1	Q2	Q3	Q4
4	D	ABT	2003	2004	Abbott Laboratories	0					27	13	3	8	3
5	D	ABT	2005	2006	Abbott Laboratories	0					8	2		1	5
6	D	AGN	2003	2004	Allergan, Inc.	0					1		1		
7	Z	ARRO	2003	2004	Arrow International, Inc.	0					2	1		1	
8	Z	ARRO	2004	2005	Arrow International, Inc.	1	1				2		2		
9	Z	BCR	2004	2005	Bard (C.R.), Inc.	0					3		1		2
10	Z	BDX	2003	2004	Becton Dickinson and Company	0					6	2	2		2
11	Z	BDX	2004	2005	Becton Dickinson and Company	1	1				7	2		4	1
12	Z	BDX	2005	2006	Becton Dickinson and Company	0					6	4		1	1

Fig. 13: Extract 1 of the Excel spreadsheet used to cluster firms years and products recalls in the "CSR overall score matrix".

	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU
1	COUNT OF THE NUMBER OF DIMENSIONS IN WHICH THE FIRM HAS STRENGHTS	COUNT OF THE NUMBER OF DIMENSIONS IN WHICH THE FIRM HAS CONCERNS	PARAMETER FOR STRENGHTS >=	PARAMETER FOR CONCERNS >=	CELL A	CELL B	CELL C	CELL D	N. RECALLS CELL A	N. RECALLS CELL B	N. RECALLS CELL C	N. RECALLS CELL D
2			4	4								
3												
4	2	4	NO	YES	NO	YES	NO	NO	0	27	0	0
5	3	5	NO	YES	NO	YES	NO	NO	0	8	0	0
6	2	3	NO	NO	NO	NO	YES	NO	0	0	1	0
7	0	0	NO	NO	NO	NO	YES	NO	0	0	2	0
8	0	0	NO	NO	NO	NO	YES	NO	0	0	3	0
51	1	1	NO	NO	NO	NO	YES	NO	0	0	7	0
52	1	0	NO	NO	NO	NO	YES	NO	0	0	2	0
53	3	6	NO	YES	NO	YES	NO	NO	0	1	0	0
54	0	2	NO	NO	NO	NO	YES	NO	0	0	1	0
55	2	1	NO	NO	NO	NO	YES	NO	0	0	4	0
56												
57					TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
58					1	3	46	2	1	36	158	5

Fig. 14: Extract 2 of the Excel spreadsheet used to cluster firms years and products recalls in the "CSR overall score matrix".

The “CSR overall score matrix” in Fig. 15 shows how the 52 firms years and 200 recalls considered in this research are distributed in the different cells of the matrix.

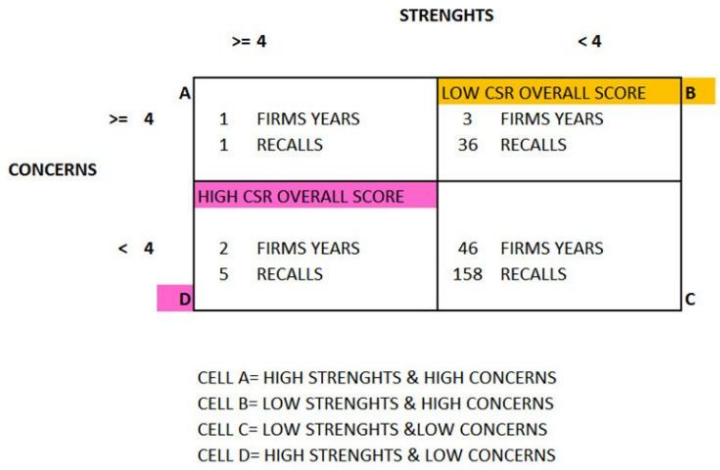


Fig. 15: Distribution of the 52 firms years and 200 product recalls considered in this research in the four cells of the “CSR overall score matrix”.

The great majority of firms years are in cell C, characterized by both strengths and concerns < 4. Thus is not terribly surprising considering that the thresholds used by KLD to get a 1 in many of the qualitative items are quite demanding. Belonging to cell C doesn’t mean that a company doesn’t care about CSR but that it doesn’t stand out neither as “irresponsible” (cell B) nor as a “CSR champion” (cell D).

In cell B we find companies having a low CSR overall score since they score high in the number of concerns and low in the number of strengths. Such companies might be labeled as “irresponsible in relation to sustainability” or “caring very little about it”.

Conversely, companies in cell D might be defined as “CSR champions” or “exceptional corporate citizens” since they perform impressively well in both the positive and negative aspects of CSR, doing particularly good in 4 or more qualitative areas and avoiding harm in 4 or more of them.

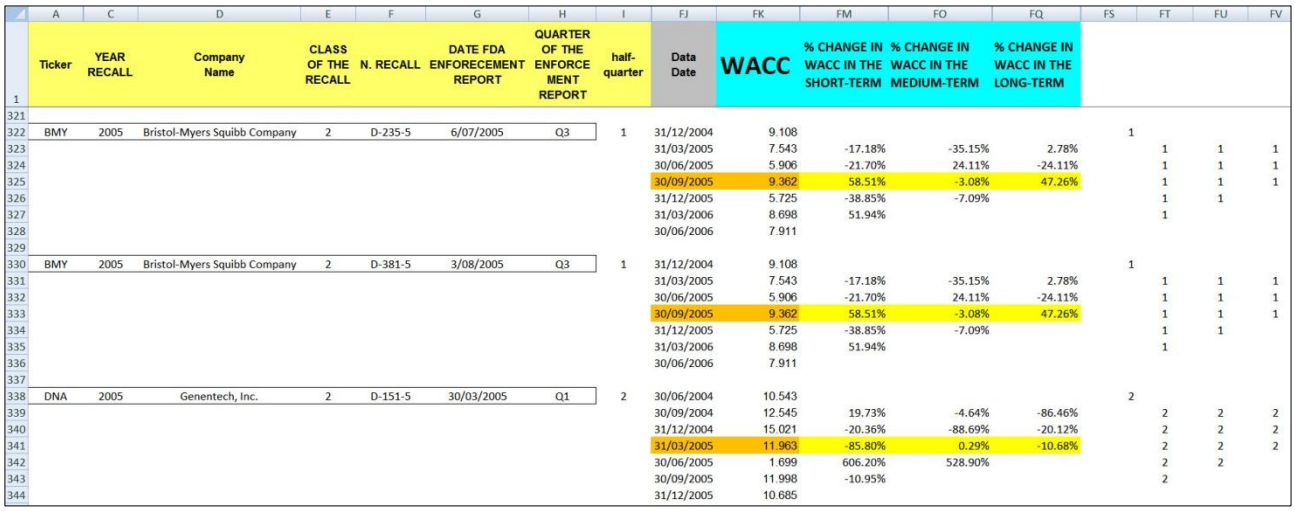
Finally, in cell A we find firms having a not so clear position regarding CSR hence they are at the same time doing good but doing harm.

In answering Hypothesis 1, the mean % change in WACC of cell D will be compared with the mean % change in WACC of cell B after product recalls. It is expected that companies having a HIGH CSR OVERALL SCORE and hence performing particularly well in both the positive and negative levers of CSR, will have, thanks to the insurance from CSR, a lower increase or a bigger decrease in their financing cost than companies having a LOW CSR OVERALL SCORE when facing products recalls.

The comparison between “irresponsible firms” and “CSR champions” is expected to have the highest probability to show evidence, if any. As for any other form of insurance, CSR is not expected to offer 100%

insurance. Companies having a high CSR score likely lose value during a negative event but they are expected to lose less value than low CSR companies that cannot count on the positive moral capital created before the occurrence of the product recall.

No indications about whether the potential effects of the insurance from CSR are visible on a firm's financing costs in the short, medium or long term were found in the literature. Consequently, as shown in Fig. 16, the % change in WACC has been computed in the short, medium and long term for each of the recalls in cells B and D.



	A	C	D	E	F	G	H	I	FJ	FK	FM	FO	FQ	FS	FT	FU	FV
1	Ticker	YEAR RECALL	Company Name	CLASS OF THE RECALL	N. RECALL	DATE FDA ENFORECEMENT REPORT	QUARTER OF THE ENFORCEMENT REPORT	half-quarter	Data Date	WACC	% CHANGE IN WACC IN THE SHORT-TERM	% CHANGE IN WACC IN THE MEDIUM-TERM	% CHANGE IN WACC IN THE LONG-TERM				
321																	
322	BMY	2005	Bristol-Myers Squibb Company	2	D-235-5	6/07/2005	Q3	1	31/12/2004	9.108				1			
323									31/03/2005	7.543	-17.18%	-35.15%	2.78%		1	1	1
324									30/06/2005	5.906	-21.70%	24.11%	-24.11%		1	1	1
325									30/09/2005	9.362	58.51%	-3.08%	47.26%		1	1	1
326									31/12/2005	5.725	-38.85%	-7.09%			1	1	
327									31/03/2006	8.698	51.94%				1		
328									30/06/2006	7.911							
329																	
330	BMY	2005	Bristol-Myers Squibb Company	2	D-381-5	3/08/2005	Q3	1	31/12/2004	9.108				1			
331									31/03/2005	7.543	-17.18%	-35.15%	2.78%		1	1	1
332									30/06/2005	5.906	-21.70%	24.11%	-24.11%		1	1	1
333									30/09/2005	9.362	58.51%	-3.08%	47.26%		1	1	1
334									31/12/2005	5.725	-38.85%	-7.09%			1	1	
335									31/03/2006	8.698	51.94%				1		
336									30/06/2006	7.911							
337																	
338	DNA	2005	Genentech, Inc.	2	D-151-5	30/03/2005	Q1	2	30/06/2004	10.543				2			
339									30/09/2004	12.545	19.73%	-4.64%	-86.46%		2	2	2
340									31/12/2004	15.021	-20.36%	-88.69%	-20.12%		2	2	2
341									31/03/2005	11.963	-85.80%	0.29%	-10.68%		2	2	2
342									30/06/2005	1.699	606.20%	528.90%			2	2	
343									30/09/2005	11.998	-10.95%				2		
344									31/12/2005	10.685							

Fig. 16: Computations of the % change in WACC for each of the product recalls in cells B and D of the "CSR overall score matrix" in the short, medium and long term.

A distinction has been made between recalls published in the first and in second half of each quarter. Indeed, it has been assumed that one recall published in the first half of a quarter might show effects on the WACC already at the end of the same quarter. Consequently, the % changes in WACC in the short, medium and long term has been computed using different formulas for recalls published in the first-half and in the second-half of a quarter.

Hereafter, the criteria used in the computation of the % changes in WACC and the formulas entered in the Excel spreadsheet are detailed:

- % CHANGE IN WACC IN THE SHORT TERM → if the date of the Enforcement Report is in the first half-quarter, the result is the % change between the end of the quarter before the publication (t-1) and the end of the quarter of the publication (t); if the date of the Enforcement Report is in the second half-quarter, the result is the % change between the end of the quarter of the publication (t) and the end of the quarter after the publication (t+1).

- % CHANGE IN WACC IN THE MEDIUM TERM → *if the date of the Enforcement Report is in the first half-quarter, the result is the % change between the end of the quarter before the publication (t-1) and the end of the quarter after the publication (t+1); if the date of the Enforcement Report is in the second half-quarter, the result is the % change between the end of the quarter of the publication (t) and the end of the second quarter after the publication (t+2).*

- % CHANGE IN WACC IN THE LONG TERM → *if the date of the Enforcement Report is in the first half-quarter, the result is the % change between the end of the quarter before the publication (t-1) and the end of the second quarter after the publication (t+2); if the date of the Enforcement Report is in the second half-quarter, the result is the % change between the end of the quarter of the publication (t) and the end of the third quarter after the publication (t+3).*

The time window between the date of the publication of the Enforcement Report and the computed % change in WACC ranges in the *short term* from a minimum of 1.5 months to a maximum of 4.5 months, in the *medium term* from a minimum of 4.5 months to a maximum of 7.5 months and in the *long term* from a minimum of 7.5 months to a maximum of 10.5 months. Longer the period considered, bigger is the chance that the computed % change in WACC might be the combination of capital markets' reactions to the product recalls and other factors.

Having all the data to compute WACC on a quarterly basis, 3 months is the highest level of sensitivity possible.

As shown in Fig. 16, the computed % changes in WACC in the short, medium and long terms are reported in line with the final day of the quarter in which the Enforcement Report has been published and are highlighted in yellow. In such a way, the reader can easily identify the variations of interest.

Once the % changes in WACC after recalls for all the high CSR overall score firms (cell D) and low CSR overall score firms (cell B) have been computed, results have been structured per cell and term as shown in Figures 17 and 18.

CELL D OF THE "CSR OVERALL MATRIX": MEAN OF THE % CHANGE IN WACC

SHORT TERM

TICKER	YEAR RECALL	COMPANY NAME	COUNT OF THE N. OF CSR DIMENSIONS IN WHICH THE FIRM HAS STRENGHTS	COUNT OF THE NUMBER OF CSR DIMENSIONS IN WHICH THE FIRM HAS CONCERNS	QUARTER OF THE PUBBLICATION OF THE RECALL	HALF-QUARTER	N. RECALLS PUBBLISHED IN THE SAME HALF-QUARTER	% CHANGE IN WACC IN THE SHORT-TERM	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS FOR EACH FIRM YEAR	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS CONSIDERING ALL FIRMS YEARS
BMY	2005	Bristol-Myers Squibb Company	5	3	Q1	2	1	-21.698%			
					Q2	2	1	58.506%			
					Q3	1	2	58.506%		31.771%	
DNA	2005	Genentech, Inc.	4	3	Q1	2	1	-85.798%		-85.798%	
									2.379%		-27.013%

Fig. 17: Extract of the Excel spreadsheet reported in Appendix 10. It reports the computed % changes in WACC had by high CSR overall score firms (cell D) in the short term and resulting type I and II means.

CELL B OF THE "CSR OVERALL MATRIX": MEAN OF THE % CHANGE IN WACC

SHORT TERM

TICKER	YEAR RECALL	COMPANY NAME	COUNT OF THE N. OF CSR DIMENSIONS IN WHICH THE FIRM HAS STRENGHTS	COUNT OF THE N. OF CSR DIMENSIONS IN WHICH THE FIRM HAS CONCERNS	QUARTER OF THE PUBBLICATION OF THE RECALL	HALF-QUARTER	N. RECALLS PUBBLISHED IN THE SAME HALF-QUARTER	% CHANGE IN WACC IN THE SHORT-TERM	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS FOR EACH FIRM YEAR	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS CONSIDERING ALL FIRMS YEARS
ABT	2004	Abbott Laboratories	2	4	Q1	1	9	-32.76%			
						2	4	20.832%			
					Q2	1	3	20.832%			
					Q3	1	4	11.912%			
						2	4	-11.734%			
					Q4	1	3	-11.734%		-0.442%	
ABT	2006	Abbott Laboratories	3	5	Q1	2	2	-27.846%			
					Q3	1	1	4.661%			
					Q4	1	2	7.311%			
					Q4	2	3	-19.505%		-8.845%	
WYE	2004	Wyeth	3	6	Q4	1	1	6.145%		6.145%	
									-2.899%		-1.047%

Fig. 18: Extract of the Excel spreadsheet reported in Appendix 10. It reports the computed % changes in WACC had by low CSR overall score firms (cell B) in the short term and resulting type I and II means.

Such spreadsheet reports for each firm year the following information: ticker, year of the recall, company name, count of the number of dimensions in which the company has strengths and concerns, quarter of the publication of the recall, half-quarter, number of the recalls published in the same half-quarter and the computed % changes in WACC.

It has to be stressed that in case a company had more than one recall in the same half-quarter of the same year, the % change in WACC get the overall effect and it is not possible to determine the weight of each of them.

As shown in Figures 17 and 18, two different means have been computed. The one highlighted in green (hereafter called “mean of type I”) is computed considering one % change in WACC for each half-quarter in which the company has recalls. Clearly, whether one company has more recalls in the same half-quarter, the variation is considered only once since it get the overall effects of the recalls. For instance, ABT 2004 presents six % changes in WACC since in the year 2004 it had recalls in 6 out of 8 half-quarters.

The second mean (highlighted in orange in Figures 17 and 18 and hereafter called “mean of type II”) is meant to balance the weight of firms having many recalls in different half-quarters within one year and the weight of firms having only one. In this way the assumption of independence of observations requested by statistical inferential tests such as t-test and ANOVA is matched. Clearly, the number of items entering in the computation is equal to the number of firms years in the examined cell of the matrix. Consequently, given that in cell B of the “CSR overall score matrix” there are 3 firms years, the result of the mean of type II is given by the average of the mean % changes in WACC of such 3 firms years.

It would be myopic arguing that the obtained % changes in WACC are due entirely to product recalls and the insurance from CSR. Hence, it is likely that the obtained % changes in financing costs are a combination of: 1) direct costs of product recalls; 2) the buffering effect of the insurance from CSR; 3) managerial decisions not related to CSR; 4) speculations in the stock market.

The possibility of relying only on the data disclosed quarterly by companies, makes very tricky going further general considerations on mean changes and general patterns that seem or not in line with the theory of the insurance from CSR. As stated by Peloza 2009, the possibility for academics of relying only on surveys and/or secondary data available in databases and the impossibility of getting access to the complete financial statement of a company are clearly limiting the progress in understanding whether and how CSR can impact firms' financial performance.

Clearly, firms-academics conjoint research might produce valuable findings with mutual benefits. Indeed, on the one hand academics can offer companies research skills and sound knowledge of the many theories involved. On the other hand, managers possess the information to estimate the actual weight had by one product recall on the company financing costs. Furthermore, they might better determine to what degree the reservoir of positive moral capital (obtained thanks to the firm's standing in relation to CSR activities) acted as a buffer, protecting the relational wealth of the firm and hence its value.

Working separately, academics will keep striving to get fine-grained data to test theories, whereas marketing managers will keep striving proving top management that investments in CSR are worthy. Indeed, the latter can't spend months or years doing research having many daily operative tasks to follow.

Nowadays, the interests of academics and practitioners are converging and conjoint research would likely produce valuable findings with mutual benefits.

4.4.2 ANALYSIS OF THE RESULTS

Hypothesis 1 argues that high CSR overall score firms will have a lower increase in their weighted average cost of capital than low CSR overall score firms when facing product recalls. This has been tested comparing the mean % changes in WACC in the short, medium and long terms of high and low CSR overall score firms running both independent t-tests and a Mann-Whitney tests (the non-parametric equivalent to t-test). Both are aimed at testing whether a significant difference among the two groups exists.

The *two independent samples t-test* is used to compare the mean of a normally distributed dependent variable for two independent groups. When the test shows a *Sig. value > α value*, the null hypothesis (H_0) is not rejected, meaning that the two means are not statistically different and hence data comes from one population. Conversely, when *Sig. value < α*, H_0 is rejected meaning that there are sufficient empirical evidence to accept the alternative hypothesis (H_1), sustaining that there is a statistically significant difference between the means of the two groups. In this second case it can be concluded that the two groups derive from two different populations. The Mann-Whitney test is generally used when the t-test's assumption regarding the normality of the distribution is not met. It tests whether the distribution of the dependent variables is the same across the considered categories. The Sig. value of the Mann-Whitney test is read as seen for the t-test.

Parametric tests are generally preferred to their equivalent non-parametric ones since the have greater power even they are more requiring in terms of assumptions to be met in order to produce reliable results. In social science research it is pretty rare that real data match all the assumptions required by parametric tests. However, even when some assumptions of the t-test are not met and hence other samples might give different results, the obtained results are considered solid when parametric and non-parametric tests agree in rejecting/not rejecting H_0.

To determine whether a t-test or a Mann-Whitney test was the most appropriate to test Hypothesis 1, it has been checked whether and when the t-test's assumptions were met. The computed % changes in WACC in the short, medium and long term for high/low CSR overall score firms have been imported in SPSS 18.0 and Exploratory Data Analysis (EDA), normality tests (Shapiro-Wilk test) and Levene's tests of homogeneity of variance have been run. Descriptive analyses have been run as well. The resulting outputs are reported in Appendix 21.

Shapiro-Wilk test run using type I observations[12] shows that in the short, medium and long terms the % changes in WACC of low CSR overall score firms (cell B) have a normal distribution (in all the cases p-value > 0.05), whereas low CSR overall score firms (cell D) have a normal distribution in the short and long terms

[12] one observation for each half-quarter in which a firm had recalls

but not in the medium term. Hence, the normality assumption is violated in the medium term. In such a case the Mann-Whitney test is expected to give much more reliable results.

The assumption of independence of observations is violated by type I observations. Indeed, we have multiple observations of the same company if it had multiple product recalls in different half-quarters within one year. Such assumptions is however met by type II observations where the number of observations coincide with the number of firm years in the examined cell of the CSR matrix.

Levine's test (Appendix 21) shows that the assumption of homogeneity of variance isn't met in all the cases. When it is not met it is sufficient to read the t-test's Sig. value when *no equal variance is assumed*.

Concluding, given that some assumptions of the t-test are not always met, it has been decided to run both the *two independent samples t-test* and the *Mann-Whitney test* in order to get much more solid results.

Table 9 reports the descriptive statistics of high/low CSR overall score firms obtained using type I observations.

Group Statistics

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error Mean	Lower Bound	Upper Bound	Minimum	Maximum
% change in WACC SHORT TERM	CELL B (LOW CSR OVERALL SCORE)	11	-.028987	.1880056	.0566858	-.155291	.097317	-.3276	.2083
	CELL D (HIGH CSR OVERALL SCORE)	4	.023790	.6989393	.3494696	-1.088378	1.135958	-.8580	.5851
% change in WACC MEDIUM TERM	CELL B (LOW CSR OVERALL SCORE)	11	.003251	.2083312	.0628142	-.136708	.143210	-.2448	.3523
	CELL D (HIGH CSR OVERALL SCORE)	4	.045637	.1312937	.0656468	-.163280	.254555	-.0308	.2411
% change in WACC LONG TERM	CELL B (LOW CSR OVERALL SCORE)	11	-.026002	.1847956	.0557180	-.150150	.098145	-.2967	.1936
	CELL D (HIGH CSR OVERALL SCORE)	4	.149344	.3773143	.1886572	-.451048	.749735	-.2411	.4726

Table 9: Group statistics obtained using type I observations relative to high/low CSR overall score firms.

As shown In Table 10, reporting the results of the independent t-test run using type I observations, in all the short, medium and long terms the Sig. value is > α value. Hence, no significant statistical difference between type I means % changes in WACC between high/low CSR overall score firms exists. Such results are confirmed by the Mann Whitney test that found the same distribution among the two categories in the short (Sig. 0.793), medium (Sig. 0.432) and long (Sig. 0.513) terms. The results of such test are reported Appendix 21.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
% change in WACC in the SHORT TERM	Equal variances assumed	22.492	.000	-.242	13	.813	-.0527767	.2184063	-.5246148	.4190613
	Equal variances not assumed			-.149	3.159	.891	-.0527767	.3540372	-1.1480165	1.0424631
% change in WACC in the MEDIUM TERM	Equal variances assumed	1.232	.287	-.376	13	.713	-.0423858	.1128616	-.2862085	.2014370
	Equal variances not assumed			-.467	8.796	.652	-.0423858	.0908578	-.2486488	.1638772
% change in WACC in the LONG TERM	Equal variances assumed	12.091	.004	-1.235	13	.239	-.1753461	.1419697	-.4820530	.1313608
	Equal variances not assumed			-.891	3.538	.429	-.1753461	.1967130	-.7508114	.4001193

Table 10: Independent sample t-test comparing the type I means of high/low CSR overall score firms.

Considering type II means, both the independent t-test and the Mann Whitney test suggest to not reject $H_{0.}$ Mann-Whitney test's significance is equal to 1 in the short term, equal to 0.564 in the medium and equal to 1 in the long term. Descriptive statistics and t-test results are reported hereafter in Table 11 and 12.

Group Statistics							
		N	Mean	Std. Deviation	Std. Error Mean	Minimum	Maximum
% change in WACC short term	CELL B (LOW CSR OVERALL SCORE)	3	-.0104726	.07513035	.04337653	-.08845	.06145
	CELL D (HIGH CSR OVERALL SCORE)	2	-.2701344	.83134341	.58784857	-.85798	.31771
% change in WACC medium term	CELL B (LOW CSR OVERALL SCORE)	3	-.0592161	.13652575	.07882318	-.20439	.06659
	CELL D (HIGH CSR OVERALL SCORE)	2	.0314004	.04026724	.02847324	.00293	.05987
% change in WACC long term	CELL B (LOW CSR OVERALL SCORE)	3	-.0251223	.01835351	.01059640	-.03947	-.00444
	CELL D (HIGH CSR OVERALL SCORE)	2	.0639464	.24153997	.17079455	-.10685	.23474

Table 11: Descriptive group statistics of high/low CSR overall score firms considering type II observations.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
% change in WACC short term	Equal variances assumed	324.812	.000	.588	3	.598	.25966178	.44172044	-1.14608980	1.66541336
	Equal variances not assumed			.441	1.011	.735	.25966178	.58944674	-7.04173183	7.56105539
% change in WACC medium term	Equal variances assumed	1.830	.269	-.872	3	.448	-.09061655	.10394979	-.42143118	.24019809
	Equal variances not assumed			-1.081	2.472	.374	-.09061655	.08380823	-.39265935	.21142626
% change in WACC long term	Equal variances assumed	858.543	.000	-.696	3	.537	-.08906864	.12803565	-.49653522	.31839794
	Equal variances not assumed			-.520	1.008	.694	-.08906864	.17112294	-2.22449227	2.04635499

Table 12: Independent samples t-test run using type II observations for high/low CSR overall score firms.

T-tests and Mann-Whitney tests show that there is not a statistical significant difference between high and low CSR overall scores firms in relation to their mean % changes in WACC after product recalls in none of the terms considered. Hence, in relation to their mean % changes in WACC after recalls, high and low CSR overall score firms resulted to derive from one unique population and not to be two different groups. Hypothesis 1 is hence rejected in all the time windows considered in this research.

Results suggests that investors in the US capital markets don't recognize and value CSR, as an overall construct, as a form of insurance for the cost of capital. Thus might be explained in three alternative ways: 1) investors don't care about sustainability issues, see CSR investments as a cost and are interested only in the return on investments; 2) investors are not aware of the many potential benefits of the insurance from CSR and hence don't appreciate it; 3) the theorized insurance from CSR doesn't exist. If the second one was the truth, there might be still plenty of work for marketers in making investors aware of the mechanism through which CSR can act as an insurance policy, protecting shareholder value. Another plausible explanation is that CSR and its potential insurance benefit appeal more to consumers, employees and other stakeholders who are more concerned with social and environmental sustainability issues than investors.

Concluding, in relation to the considered population, it emerges that being a CSR champion doesn't pay off financially in terms of cost of capital when product recalls occur. Indeed, high CSR companies showed no significant differences in relation to their mean % changes in WACC compared to low CSR overall score

firms. Such findings are aligned with the skeptical view of CSR, arguing that being socially sustainable doesn't pay off financially and that companies should leave such issues to governments and NGOs.

4.5 "CSR EMPLOYEE RELATIONS SCORE MATRIX" AND HYPOTHESIS 2

4.5.1 EMPIRICAL RESULTS

The 52 firms years and 200 product recalls considered in this research have been clustered in the four cells of the "CSR Employee Relations score matrix" using the Excel spreadsheet reported in Appendix 12, whose extract is shown in Fig. 19.

Emp. Relations - Number of Strengths	Emp. Relations - Number of Concerns	strenghts	concerns	CELL A	CELL B	CELL C	CELL D	RECALLS CELL A	RECALLS CELL B	RECALLS CELL C	RECALLS CELL D
0	0	NO	NO	NO	NO	YES	NO	0	0	2	0
0	1	NO	YES	NO	YES	NO	NO	0	1	0	0
0	0	NO	NO	NO	NO	YES	NO	0	0	2	0
0	0	NO	NO	NO	NO	YES	NO	0	0	4	0
0	0	NO	NO	NO	NO	YES	NO	0	0	2	0
0	0	NO	NO	NO	NO	YES	NO	0	0	7	0
0	0	NO	NO	NO	NO	YES	NO	0	0	2	0
1	1	YES	YES	YES	NO	NO	NO	1	0	0	0
0	1	NO	YES	NO	YES	NO	NO	0	1	0	0
0	1	NO	YES	NO	YES	NO	NO	0	4	0	0
				TOT	TOT	TOT	TOT	TOT	TOT	TOT	TOT
				3	17	23	9	17	72	75	36

Fig. 19: Extract of the Excel spreadsheet used to cluster the 52 firms years and 200 recalls in the four cells of the "CSR Employee Relations score matrix".

The structure is similar to the spreadsheet used in relation to the CSR overall score with the difference that in this case only one of the seven qualitative issues evaluated by KLD is considered. Formulas used to cluster each firm year and recalls in the cells of the matrix follow the logic detailed in relation to Hyp.1.

As can be seen looking at the matrix in Fig. 20, firms having high score in the CSR dimension "Employee Relations" have strengths and don't have concerns in such specific dimension and are clustered in cell D. Conversely, firms which have concerns and don't have strengths in the CSR "Employee Relations" dimension are labeled as having a low CSR Employee Relations score and are clustered in cell B.

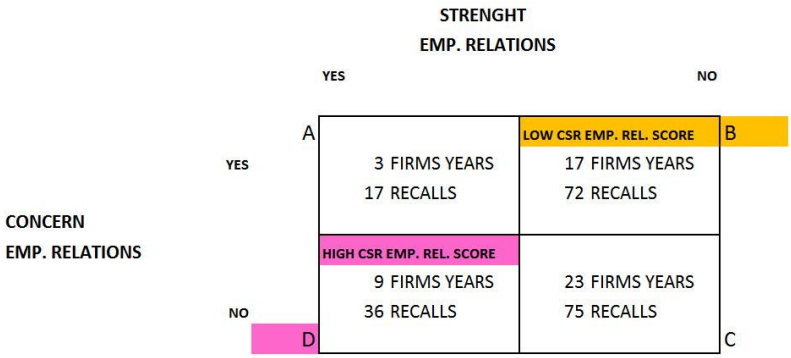


Fig. 20: Distribution of the 52 firms years and 200 product recalls in the four cells of the "CSR Employee Relations score matrix".

Focusing on a specific CSR dimension is expected to allow to get a more fine grained knowledge of the potential effects of the insurance from CSR. Moreover, it is expected to give practitioners indications about what are the dimensions that the capital markets appreciate most. This research will make a step in such direction investigating the Employee Relations dimension.

The reasons behind the choice of such specific dimension are basically three. First, it is one of the dimensions that in previous research about CSR and abnormal returns in the stock market gave significant results. Second, the researcher believes that, in order to be more credible as a responsible corporate citizen in dimensions such as "human rights" or "community", a firm should first be responsible towards its employees. Third, it is expected that high CSR standards in the Employee Relations dimension might give manufacturing companies an edge on competitors attracting and retaining talents and keeping employees committed.

The choice of focusing on the Employee Relations dimension turned out to be a good one once completed data collection. Indeed, as can be seen in Figures 20 and 21, Employee Relations is the dimension having the highest number of firms years in the cells that will be analyzed in testing Hypothesis 2 (cells B and D) compared to "Environment" and "Product" (i.e. the other dimensions which gave significant results in previous studies). Indeed, the "CSR Environment score matrix" (on the left side) shows only 3 and 2 firms years in cells B and D respectively whereas in the "CSR Product score matrix" (on the right side) none of the 52 firms years considered resulted to be a "CSR champion".

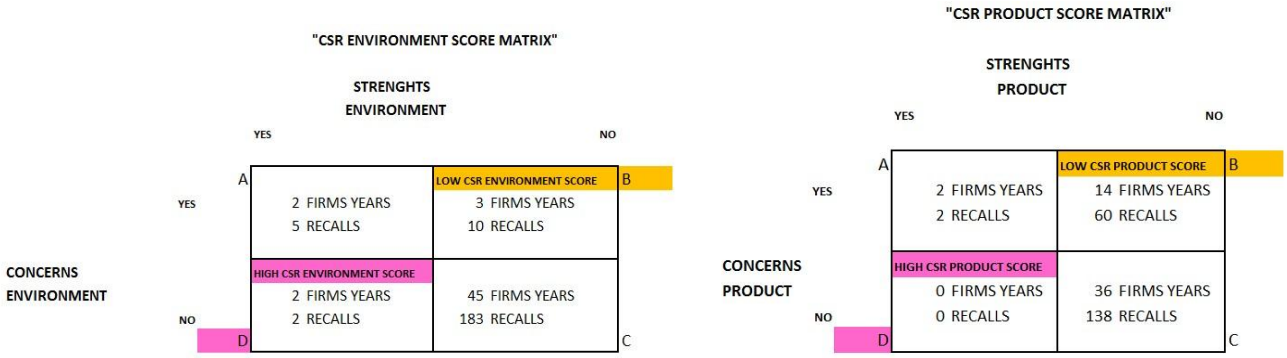


Fig. 21: Distribution of the 52 firms years and 200 recalls in the "CSR environment score matrix" (on the left) and "CSR product score matrix" (on the right).

Regarding the distribution of firms years and product recalls in the "CSR Employee Relations score matrix" (Fig. 20), the biggest cluster is in cell C, characterized by no strengths and no concerns in the considered dimension. Indeed, it contains about 44% of the firms years and 37,5% of the recalls. The second biggest cluster is given by firms having a low CSR Employee Relations score (cell B) and counts 17 firms years and 72 recalls corresponding to 32,7% of the total firms years and 36% of the total recalls respectively. After cell B, we find cell D containing firms having high CSR Employee Relations score and precisely 9 firms years and 36 recalls corresponding to 17% of the firms years and 18% of the total recalls. Cell A is the last one in decreasing order of size with 3 firms years and 17 recalls corresponding to around 5,77% of the firms years and 8,5% of the recalls. Belonging to cell C doesn't mean don't caring about Employee Relations but not standing out neither as "irresponsible" (cell B) nor as a "CSR champion" (cell D). Finally, in cell A we find firms having a not so clear position regarding the Employee Relations dimension. Hence they are at the same time doing good and doing harm.

Table 13 shows how the 52 firms years are distributed in the different cells of the "CSR Employee Relations score matrix" over the three years considered. The totals on the last column correspond to the number of firms years seen in each cell of the "CSR Employee Relations matrix" in Fig. 20. On the other hand, the totals in the fourth line indicate the total N. of firms/year.

	2004	2005	2006	Tot.
Cell A (firms which do good but don't avoid harm in relation to the CSR Employee Relations dimension)	1	1	1	3
Cell B LOW CSR EMPLOYEE RELATIONS SCORE FIRMS (firms which both don't do good and don't avoid harm in relation to the CSR Employee Relations dimension)	5	5	7	17
Cell C (firms which don't do good but avoid harm in relation to the CSR Employee Relations dimension)	7	8	8	23

Cell D HIGH CSR EMPLOYEE RELATIONS SCORE FIRMS (firms which both do good and avoid harm in relation to the CSR Employee Relations dimension)	3	4	2	9
Tot.	16	18	18	52

Table 13: Distribution of the 52 firms years per year and cell of the "CSR Employee Relations score matrix".

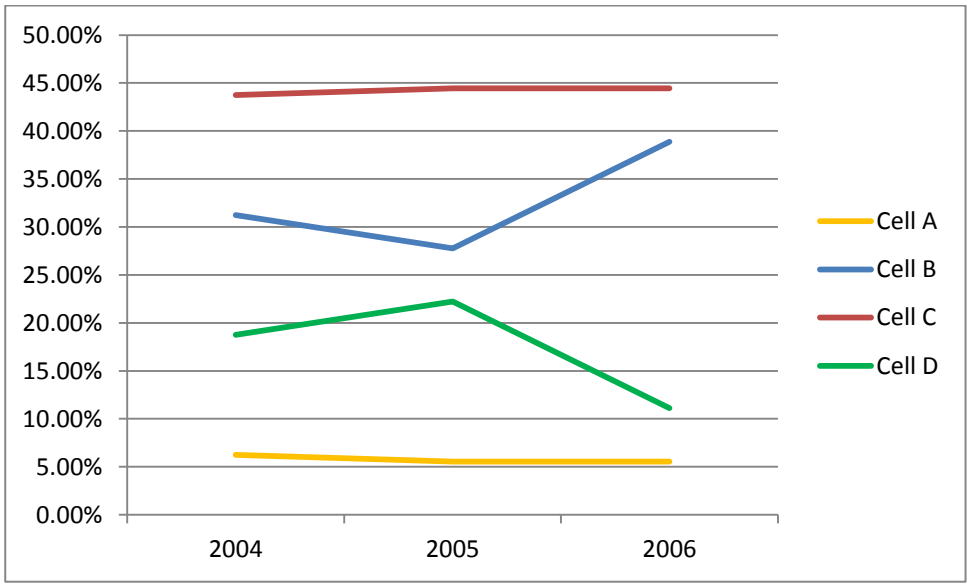
Similarly, Table 14 shows how the 200 product recalls are distributed over the three years considered. The totals on the last column correspond to the N. of recalls in each cell of the "CSR Employee Relation score matrix" (Fig. 20) whereas the totals in the fourth line indicate the total N. of recalls/year.

	2004	**2005**	**2006**	**Tot.**
Cell A (firms which do good but don't avoid harm in relation to the CSR Employee Relations dimension)	1	1	15	17
Cell B LOW CSR EMPLOYEE RELATIONS SCORE FIRMS (firms which both don't do good and don't avoid harm in relation to the CSR Employee Relations dimension)	37	12	23	72
Cell C (firms which don't do good but avoid harm in relation to the CSR employee relations dimension)	29	21	25	75
Cell D HIGH CSR EMPLOYEE RELATIONS SCORE FIRMS (firms which both do good and avoid harm in relation to the CSR employee relations dimension)	17	17	2	36
Tot.	84	51	65	200

Table 14: Distribution of the 200 product recalls per year and cell of the "CSR Employee Relations score matrix".

Graph 1 shows the incidence of the firms in each cell of the "CSR Employee Relations score matrix" in relation to the total number of firms/year over the period considered in this study. Focusing on cell B, containing firms with a low CSR Employee Relations score, it can be seen that in 2004 their incidence was 31.25% (made 100% the total number of firms in 2004). Then, in 2005 it decreased to 27.78% and in 2006 it jumped to 38.89%. Conversely, the incidence of firms having high CSR Employee Relations score (cell D) was

18.75% in 2004 and 22.22% in 2005. The incidence shows a sharp decrease in 2006 reaching 11.11%. The variations registered from 2005 to 2006 are quite relevant since the total number of firms remained stable at 18 as shown in Table 13. Finally, firms in cells A (doing good but don't avoiding harm in relation to the CSR Employee Relations dimension) and C (don't doing good but avoiding harm in relation to the CSR Employee Relations dimension) shows no big changes in their incidence in the period considered in this study.



Graph 1: Incidence firms/year in each cell od the "CSR Employee Relations score matrix" (made 100% the total N. of firms in each year).

	Average N. recalls/firm/year
Cell A (firms which do good but don't avoid harm in relation to the CSR Employee Relations dimension)	1.89
Cell B LOW CSR EMPLOYEE RELATIONS SCORE FIRMS (firms which both don't do good and don't avoid harm in relation to the CSR Employee Relations dimension)	1.41
Cell C (firms which don't do good but avoid harm in relation to the CSR employee relations dimension)	1.09
Cell D HIGH CSR EMPLOYEE RELATIONS SCORE FIRMS (firms which both do good and avoid harm in relation to the CSR employee relations dimension)	1.33
Tot.	1.28

Table 15: Average N. of recalls/firm/year in the four cells of the "CSR Employee Relations score matrix".

Another interesting consideration is suggested by Table 15. Indeed, it can be seen that firms having a low CSR Employee Relations score (cell B)had on average 1.41 recalls/year whereas firms having high CSR Employee Relations score (cell D)had on average 1.33 recalls/year.

The average N. recalls/firm/year had by the firms considered in this study is, even slightly, in line with the finding of a recently published study sustaining that "responsible firms have negative events less often than negligent firms" (Minor 2011).

In investigating Hypothesis 2, the mean % changes in WACC of firms having high/low CSR Employee Relations scores will be compared after the occurrence of product recalls. It is expected that companies having a high CSR score in the Employee Relations dimension will have a lower increase or a bigger decrease in their cost of capital than companies having a low Employee Relations score. The comparison between "irresponsible firms" and "CSR champions" is expected to have the highest chance to show evidence, if any.

The % changes in WACC have been computed for product recalls had by high/low CSR Employee Relations score firms in the short, medium and long term (as explained in Section 4.4.1). All the computations can be found in Appendix 15.

Figures 22 and 23 report the computations of type I and II means of the % changes in WACC for high/low CSR Employee Relations score firms in the short term.

SHORT TERM

TICKER	YEAR RECALL (t)	COMPANY NAME	QUARTER OF THE PUBBLICATION OF THE RECALL	HALF-QUARTER	N. RECALLS PUBBLISHED IN THE SAME HALF-QUARTER	% CHANGE IN WACC IN THE SHORT-TERM	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS FOR EACH FIRM YEAR	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS CONSIDERING ALL FIRMS YEARS
BMY	2005	Bristol-Myers Squibb Company	Q1	2	1	-21,698%			
			Q2	2	1	58,506%			
			Q3	1	2	58,506%		31,771%	
DNA	2005	Genentech, Inc.	Q1	2	1	-85,798%		-85,798%	
EW	2005	Edwards Lifesciences Corporation	Q1	1	1	43,633%			
			Q2	2	1	23,875%		33,754%	
HAE	2006	Haemonetics Corporation	Q2	1	1	-8,428%		-8,428%	
K	2004	Kellogg Company	Q3	1	1	6,822%		6,822%	
KG	2004	King Pharmaceuticals, Inc.	Q3	1	2	-67,149%		-67,149%	
KG	2006	King Pharmaceuticals, Inc.	Q3	2	1	8,856%		8,856%	
MDT	2004	Medtronic, Inc.	Q3 2003/04	2	1	-43,241%			
			Q4 2003/04	1	1	-43,241%			
			Q4 2003/04	2	1	-4,586%			
			Q1 2004/05	1	4	-4,586%			
			Q1 2004/05	2	4	73,937%			
			Q2 2004/05	1	1	73,937%			
			Q2 2004/05	2	2	-21,485%		4,391%	
MDT	2005	Medtronic, Inc.	Q3 2004/05	2	1	-16,772%			
			Q4 2004/05	1	2	-16,772%			
			Q4 2004/05	2	3	16,625%			
			Q1 2005/06	1	1	16,625%			
			Q1 2005/06	2	1	-23,370%			
			Q2 2005/06	2	1	6,049%			
			Q3 2005/06	1	1	6,049%		-1,652%	
							1,512%		-8,604%

Fig. 22: Extract of the Excel spreadsheet in Appendix 15. It reports the % changes in WACC in the short term had by high CSR Employee Relations score firms and the computations of the means of type I and II.

SHORT TERM

TICKER	YEAR RECALL (t)	COMPANY NAME	QUARTER OF THE PUBBLICATION OF THE RECALL	HALF-QUARTER	N. RECALLS PUBBLISHED IN THE SAME HALF-QUARTER	% CHANGE IN WACC IN THE SHORT-TERM	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS FOR EACH FIRM YEAR	MEAN OF THE % CHANGE IN WACC IN QUARTERS WITH RECALLS CONSIDERING ALL FIRMS YEARS
ABT	2004	Abbott Laboratories	Q1	1	9	-32,758%			
			Q1	2	4	20,832%			
			Q2	1	3	20,832%			
			Q3	1	4	11,912%			
			Q3	2	4	-11,734%			
			Q4	1	3	-11,734%		-0,442%	
ABT	2006	Abbott Laboratories	Q1	2	2	-27,846%			
			Q3	1	1	4,661%			
			Q4	1	2	7,311%			
			Q4	2	3	-19,505%		-8,845%	
AGN	2004	Allergan, Inc.	Q2	2	1	26,414%		26,414%	
BDX	2005	Becton Dickinson and Company	Q1	2	3	-9,154%			
			Q3	1	2	2,569%			
			Q3	2	2	-0,843%			
			Q4	2	1	43,669%		9,060%	
BDX	2006	Becton Dickinson and Company	Q1	1	4	43,669%			
			Q3	2	1	-5,717%			
			Q4	2	1	-8,908%		9,682%	
BOL	2004	Bausch & Lomb Incorporated	Q1	1	1	-8,854%			
			Q3	1	1	8,384%			
			Q4	2	1	22,879%		7,470%	
COO	2006	Cooper Companies, Inc. (The)	Q1	2	1	160,737%		160,737%	
CPHD	2005	Cepheid	Q3	2	1	-8,212%		-8,212%	
HSP	2006	Hospira, Inc.	Q1	1	2	60,943%			
			Q1	2	2	-32,511%			
			Q4	1	1	-4,111%		8,107%	
NEWP	2005	Newport Corporation	Q3	2	1	-5,768%		-5,768%	
NTY	2005	NBTY, Inc.	Q3	2	1	-13,182%		-13,182%	
PBG	2006	Pepsi Bottling Group, Inc.	Q1	2	1	-3,098%		-3,098%	
STAA	2004	STAAR Surgical Company	Q1	1	1	21,541%			
			Q1	2	1	30,263%		25,902%	
STE	2006	STERIS Corporation	Q3	2	1	2,384%		2,384%	
TFX	2005	Teleflex Inc.	Q3	2	1	-3,317%		-3,317%	
XRAY	2006	Dentsply International, Inc.	Q4	2	1	0,828%		0,828%	
ZMH	2004	Zimmer Holdings, Inc.	Q2	1	1	-12,440%			
			Q3	1	1	37,892%			
			Q3	2	1	4,913%			
			Q4	1	1	4,913%		8,819%	
							8,365%		12,738%

Fig. 23: Extract of the Excel spreadsheet in Appendix 15. It reports the % changes in WACC in the short term had by low CSR Employee Relations score firms and the computations of the means of type I and II.

4.5.2 ANALYSIS OF THE RESULTS

Hypothesis 2 argues that, facing product recalls, firms having a high CSR Employee Relations score will have a lower increase in their WACC than firms having a low score in such dimension. This has been tested running independent t-tests and Mann-Whitney tests using both type I and II % changes in WACC in the short, medium and long term. The first test tell us whether a statistically significant difference between the mean % changes in WACC of firms having high and low CSR Employee Relations score exists. The second test tell us whether the distribution of the dependent variables is/is not the same across the considered categories.

To determine which tests was the most appropriate in each of the three time window considered, Exploratory Data Analysis (EDA), normality tests (Shapiro-Wilk test) and Levene's tests of homogeneity of variance have been run for both type I and II observations. SPSS outputs can be found in Appendix 22. Only results relative to type II observations will be reported and commented in this Section since type II observations match the assumption of independence of observations. It is worthy to stress that tests run using type I observations leaded to the same conclusions.

Table 16 reports mean, standard deviation, standard error of mean and other descriptive statistics for high/low CSR Employee Relations score firms in the short, medium and long term.

	CELL	N	Mean	Std. Deviation	Std. Error Mean	Minimum	Maximum
% change in WACC SHORT TERM	low CSR employee relations score firms	17	.127376	.3968762	.0962566	-.1318	1.6074
	high CSR employee relations score firms	9	-.086037	.4118682	.1372894	-.8580	.3375
% change in WACC MEDIUM TERM	low CSR employee relations score firms	17	.057939	.4314071	.1046316	-.3935	1.4706
	high CSR employee relations score firms	9	.046780	.1275851	.0425284	-.1312	.2632
% change in WACC LONG TERM	low CSR employee relations score firms	17	.077191	.6819161	.1653890	-.5153	2.5586
	high CSR employee relations score firms	9	-.018422	.2038972	.0679657	-.4438	.2347

Table 16: Descriptive statistics fir high/low CSR employee relations score firms.

As can be seen looking at Table 17, reporting the results of the Shapiro-Wilk test, the normality assumption is met by firms having low CSR Employee Relations score in all the time windows considered, whereas it is violated by high CSR Employee Relations score firms in all the cases. Thus confirms the need of running the Mann-Whitney test as well. The non-parametric test is expected to give much more reliable results being the assumptions of normality not met. Moreover, as already told, when results of the two tests lead to the same conclusion about rejecting/not rejecting the null hypothesis, statistical results are considered solid.

The assumption of homogeneity of variance is met. Indeed, as can be seen looking at the table reported in Appendix 22, we have Sig. 0.463 in the short term, Sig. 0.183 in the medium term and Sig. 0.267 in the long term.

		Shapiro-Wilk		
		Statistic	df	Sig.
SHORT TERM	LOW CSR EMPLOYEE RELATIONS SCORE FIRMS	.513	17	.000
	HIGH CER EMPLOYEE RELATIONS SCORE FIRMS	.839	9	.056
MEDIUM TERM	LOW CSR EMPLOYEE RELATIONS SCORE FIRMS	.698	17	.000
	HIGH CER EMPLOYEE RELATIONS SCORE FIRMS	.977	9	.950
LONG TERM	LOW CSR EMPLOYEE RELATIONS SCORE FIRMS	.596	17	.000
	HIGH CER EMPLOYEE RELATIONS SCORE FIRMS	.932	9	.505

Table 17: Normality test for high/low CSR employee relations score firms using type II observations.

Both the t-test (Table 18) and the Mann-Whitney test (Table 19) lead to the not rejection of H_0. Indeed, there is not a statistically significant difference in the mean % changes in WACC among firms scoring high and low in relation to the CSR dimension employee relations. Consequently, in all the three time window considered (short, medium and long) CSR champions and irresponsible CSR companies resulted belonging to the same population. Hence The formulated hypothesis is rejected in all the time window considered.

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SHORT TERM	Equal variances assumed	.556	.463	1.288	24	.210	.2134129	.1656905	-.1285554	.5553812
	Equal variances not assumed			1.273	15.880	.221	.2134129	.1676715	-.1422537	.5690795
MEDIUM TERM	Equal variances assumed	1.878	.183	.075	24	.941	.0111590	.1483464	-.2950129	.3173309
	Equal variances not assumed			.099	20.599	.922	.0111590	.1129444	-.2240004	.2463185
LONG TERM	Equal variances assumed	1.290	.267	.408	24	.687	.0956135	.2345971	-.3885711	.5797980
	Equal variances not assumed			.535	20.681	.599	.0956135	.1788095	-.2765912	.4678181

Table 18: Independent samples t-test for high/low CSR employee relations score firms using type II observations.

Mann-Whitney			
	SHORT TERM	MEDIUM TERM	LONG TERM
Mann-Whitney U	70.000	54.000	65.000
Wilcoxon W	115.000	207.000	218.000
Z	-.350	-1.213	-.620
Asymp. Sig. (2-tailed)	.726	.225	.535
Exact Sig. [2*(1-tailed Sig.)]	.751	.241	.560

Table 19: Results of the Mann-Whitney tests for high/low CSR employee relations core firms using type II observations.

It emerges that investors in the capital markets seem not to recognize the insurance value of CSR -neither as a whole nor as employee relations-in buffering the negative effects of product recalls on a firms financing costs. Investors don't seem to price CSR strategies in terms of cost of capital.

One plausible explanation is that investors are not particularly attentive to how employees are treated. Hence, a high score in this CSR dimension doesn't seem to contribute creating a reservoir of positive moral capital thanks to which investors are prone to accord the company the benefit of the doubt when negative events occur. An alternative explanation might be that mechanism of the insurance from CSR doesn't work at all or at least with the type of negative event considered in this research.

The in-depth qualitative analysis reported in the Appendix has been done with the aim of getting out more from the collected data. Indeed, a case study approach is expected to show patterns that could not be revealed through a quantitative analysis. Some considerations emerged from this in-depth analysis are reported in the following Section.

4.6 CONSIDERATIONS EMERGED FROM THE ANALYSIS OF WACC AND N. RECALLS TIME-SERIES

In this Section are discussed the considerations emerged from the in-depth analysis of the graphs plotting WACC and N. recalls time-series of high/low CSR Employee Relations score firms.

The reader is invited to read the firm-level qualitative analysis reported in the Appendix. The descriptive approach is expected to allow the identification of patterns and potential benefits of the insurance from CSR besides the ones investigated in this research.

Focusing on the three high (DNA, HAE, K) and nine low (AGN, COO, CPHD, NEWP, NTY, PBG, STE, TFX, XRAY) CSR Employee Relations score companies that had only one product recall over the period considered, the following general patterns come to light.

First, two out of three of the high CSR Employee Relations score firms (DNA, HAE), corresponding to the 67%, showed after the recall a WACC pattern aligned with the theory of the insurance from CSR. Indeed, their WACC pattern is consistent with the granting by stakeholders and investors in the capital markets of the benefit of the doubt and hence less harsh sanctions. Concerning low CSR firms, five out of nine (AGN, COO, NTY, STE, XRAY), corresponding to the 56%, showed after the recalls a pattern in their WACC aligned with the theory of the insurance from CSR. They indeed seem to have felt harshly the negative effects of the recall on their financing cost.

Second, within the companies that showed patterns in line with the theory of the insurance from CSR, all the high CSR Employee Relations score firms had in the long period a value of their WACC lower than the value pre-negative event[13]. Regarding low Employee Relations score firms, it emerges that 3 out of 5 (60%) had in the long term a WACC higher the value pre-negative event (AGN, COO, NTY). Hence, it emerges that in the long term high CSR Employee Relations score firms showed a much more convenient situation then low CSR firms. Indeed, the first had in the long term a WACC lower than the value pre-negative event whereas 60% of the low CSR firms had a WACC higher than the value pre-recall.

[13] For recalls happened in the first half-quarters, the pre-negative event value is the one had in the quarter before the occurrence of the recalls (since it has been assumed that the effects of such negative events will be visible already at the end of the quarter in which the recall was published). For recalls happened in the second half-quarters, the pre-negative event value is the one had in the quarter of publication of the recall (since it has been assumed that in such cases the effects of the recall will be visible starting from the quarter after).

Finally, the 4 low CSR Employee Relations score firms that showed patterns of their WACC not aligned with the theory of the insurance from CSR (CPHD, NEWP, PBG, TFX) had a behavior similar to high CSR firms. There might be two different explanations for such a pattern: 1) these companies score high in one or more of the other qualitative areas ranked by KLD ; 2) the pattern is not linked to CSR but to other managerial/financial aspects not taken into consideration in this study.

Looking at Appendix 2 reporting the "CSR overall score matrix" for the 52 firms years considered in this thesis and the details of the KLD ratings, it has been verified that neither NEWP nor TFX scored high in none of the seven qualitative issues evaluated by KLD. Hence, it is reasonable to conclude that for these two companies this shown pattern is not due to CSR but likely to other factors.

Conversely, CPHD resulted scoring high in both "Corporate governance" and "Diversity" whereas PBG scored particularly high in the dimension "Diversity" and in its category "Gay and Lesbians Policies" as the reader could have guessed looking at the recent "Pepsi MAX" commercials broadcasted in TV. Such considerations are the proof that the patterns showed by CPHD and PBG' WACC is not misaligned at all with the theory of the insurance from CSR. Indeed, these companies are low in relation to the Employee Relations dimension but high CSR firms in relation to other specific dimensions not considered singularly in this research.

4.7 "CSR EMPLOYEE RELATIONS SCORE MATRIX" AND HYPOTHESIS 3

CSR consists of a more visible dimension given by "doing good" such as charitable giving or treating employees impressively well and a less visible one consisting in "not doing harm". The first one is referred also as "positive CSR lever" whereas the second one is the "lever of avoiding negative CSR", where an example of negative CSR is employing (or buying from a supplier who employs) child labor (Minor and Morgan 2011). According to the same authors, both levers play a role in determining where the balance of responsibility lies when a negative event such a product recall occurs. "Doing good activities are generally more visible and easily measured" whereas "the costs from avoiding harm activities are often opportunity costs and hence more difficult to quantify" (Minor and Morgan 2011). Opportunity cost can be defined as the cost of any activity in terms of the best alternative available, picking among several mutually exclusive choices. For instance, in relation to the choice of a supplier, the opportunity cost is given by the difference in cost between choosing the cheapest one who use child labor and the second-best alternative who doesn't exploit workers.

Hypothesis 3 argues that, in relation to the CSR dimension Employee Relations, the positive lever of CSR "doing good" gives more insurance than "avoiding harm" when facing a product recall. Each cell of the "CSR Employee Relations score matrix" (shown in Fig. 20 and reported hereafter for convenience of the reader) is given by the combination of two dimension "strengths" and "concerns" where the first corresponds to "doing good" and the latter to "doing harm". Consequently, in terms of the two levers "doing good" and "avoiding harm", the four cells of the matrix are as follows:

- Cell A → doing good and not avoiding harm
- Cell B → not doing good and not avoiding harm
- Cell C →not doing good and avoiding harm
- Cell D → doing good and avoiding harm.

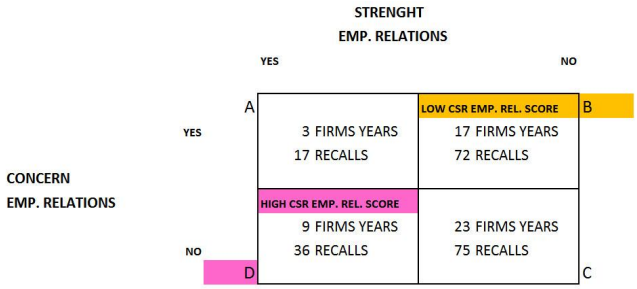


Fig. 20- Distribution of the 52 firms years and 200 product recalls in the four cells of the "CSR Employee Relations score matrix".

Companies in cells A&D perform well in the positive lever of CSR (doing good) and differ in their standing in relation to the negative lever (not avoiding/avoiding harm respectively). Similarly, firms in cells B&C perform badly in the positive lever of CSR in relation to the CSR Employee Relations dimension (not doing good) and differ in their standing in relation to the negative CSR lever (not avoiding/avoiding harm respectively). To isolate the impact of the lever "doing good", the Δ_1 between the computed mean % changes in WACC in the short, medium and long term of the cells A&D and B&C was computed. The Δ_2 shows the contribution of performing well in the positive CSR lever "doing good" compared to performing badly in such lever.

Similarly, companies in cells C&D perform well in the negative lever of CSR (avoiding harm) and differ in relation to their standing regarding the positive CSR lever (not doing good/doing good respectively). On the other hand, firms in cells A&B perform badly in the negative CSR lever (doing harm) and differ in relation to their standing regarding the positive CSR lever (doing/not doing good respectively). To isolate the impact of the lever "avoiding harm", the Δ_2 between the computed mean % changes in WACC in the short, medium and long term of the cells C&D and A&B was computed. The Δ_2 shows the contribution of performing well in the negative CSR lever "avoiding harm" compared to performing badly in such lever .

According to the research design, Hypothesis 3 will be tested comparing the two deltas. If the result is $\Delta_1 < \Delta_2$ (where Δ_1 is the contribution of "doing good" compared to perform badly in the positive CSR lever and Δ_2 is the contribution of "avoiding harm" compared to perform badly in the negative CSR lever), it can be concluded that "doing good", in relation to the Employee Relations dimension, gives more insurance than "avoiding harm". Given that in this research we are interested at comparing the mean % changes in WACC had by the 52 firms years, before making any considerations about the comparison of the two deltas, it necessary to first run statistical tests to determine whether statistically differences exist between: 1) companies that are doing good and not doing good in relation to the CSR Employee Relations dimension; 2) firms that are avoiding harm and not avoiding harm in this specific dimension. Indeed, if no statistically significant differences exist, it would not be possible saying that one delta is bigger/smaller than the other.

Table 20 reports type II mean % changes in WACC and descriptive statistics in all the time window considered of the companies that perform:

- well in the positive lever of CSR in relation to the CSR Employee Relations dimension and differ in their standing in relation to the negative lever (cells A&D)
- badly in the positive lever of CSR in relation to the CSR Employee Relations dimension and differ in their standing in relation to the negative CSR lever (cells B&C)
- well in the negative lever of CSR (avoiding harm) and differ in relation to their standing regarding the positive CSR lever (cells C&D)
- badly in the negative CSR lever (doing harm) and differ in relation to their standing regarding the positive CSR lever (A&B)

In the SPSS outputs it will be referred to such four sets of firms using the labels L1, L2, L3 and L4 where L1 = A&D; L2 = B&C; L3 = C&D and L4 = A&B.

Descriptives

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
SHORT TERM	L1	12	-.1064804	.37133482	.10719513	-.3424153	.1294545	-.85798	.33754
	L2	40	.0978041	.31251373	.04941276	-.0021427	.1977508	-.32733	1.60737
	L3	32	.0303887	.29998480	.05303032	-.0777673	.1385448	-.85798	.77788
	L4	20	.0830979	.38980574	.08716321	-.0993368	.2655326	-.47683	1.60737
MEDIUM TERM	L1	12	.0479675	.10957797	.03163243	-.0216550	.1175900	-.13119	.26323
	L2	40	.0637855	.31198741	.04932954	-.0359929	.1635639	-.40840	1.47060
	L3	32	.0621088	.17510106	.03095379	-.0010219	.1252394	-.40840	.45367
	L4	20	.0569775	.39601329	.08855126	-.1283624	.2423175	-.39351	1.47060

LONG TERM	L1	12	-.0040687	.18052543	.05211320	-.1187691	.1106316	-.44376	.23474
	L2	40	.0419635	.45056311	.07124028	-.1021335	.1860606	-.51526	2.55855
	L3	32	.0062653	.15868996	.02805269	-.0509486	.0634791	-.44376	.27490
	L4	20	.0714614	.62670186	.14013480	-.2218441	.3647669	-.51526	2.55855

Table 20: Type II means and descriptives of L1, L2, L3 and L4 (where: L1 = A&D; L2 = B&C; L3 = C&D and L4 = A&B).

Given that each cell of the CSR Employee Relations score matrix enters in the computation two times, it has been decided to run two independent t-tests/Mann-Whitney tests instead of one one-way ANOVA/Kruskal-Wallis test to avoid collinearity problems.

As can be seen looking at the Significance values of the tests of normality reported in Tables 21, the assumption of normality of the distribution in the compared group is not met. Consequently, besides the two t-tests, two Mann-Whitney tests comparing the distribution of L1 and L2 and then L3 and L4 have been run. The non-parametric tests are expected to give much more reliable results than the t-tests, being the assumption of normality violated. In this Section only the results of the Mann Whitney tests will be reported. The output of the t-tests can be found in Appendix 23. It is worthy to stress that parametric and non-parametric tests showed coherent results indicating to not reject the null hypothesis.

Tests of Normality (Shapiro-Wilk)				
		Statistic	df	Sig.
SHORT TERM	L1	.870	12	.066
MEDIUM TERM	L1	.981	12	.989
LONG TERM	L1	.920	12	.288

Tests of Normality (Shapiro-Wilk)				
		Statistic	df	Sig.
SHORT TERM	L2	.677	40	.000
MEDIUM TERM	L2	.793	40	.000
LONG TERM	L2	.540	40	.000

Tests of Normality (Shapiro-Wilk)				
		Statistic	df	Sig.
SHORT TERM	L3	.909	32	.011
MEDIUM TERM	L3	.986	32	.943
LONG TERM	L3	.968	32	.439

Tests of Normality (Shapiro-Wilk)				
		Statistic	df	Sig.
SHORT TERM	L4	.588	20	.000
MEDIUM TERM	L4	.684	20	.000
LONG TERM	L4	.578	20	.000

Table 21: Results of the tests of Normality (Shapiro-Wilk) run for L1, L2, L3 and L4. (Sig. value > α normal distribution; Sig. value < α not normal distribution).

As the results of the Mann-Whitney tests (Table 22) show, it is not possible to say that there is a statistically significant difference between the two deltas. Indeed, none of the two couples of levers (L1 and L2; L3 and L4) show a statistically significant difference in the distribution of their % change in WACC in all the time

windows considered. Such findings reinforce the evidence that Employee Relations doesn't seem to have a buffering effects on firms WACC after the occurrence of product recalls.

	Mann-Whitney		
	SHORT TERM	MEDIUM TERM	LONG TERM
Mann-Whitney U	309.000	234.000	276.000
Wilcoxon W	519.000	444.000	486.000
Z	-.207	-1.618	-.828
Asymp. Sig. (2-tailed)	.836	.106	.408

	Mann-Whitney		
	SHORT TERM	MEDIUM TERM	LONG TERM
Mann-Whitney U	191.000	218.000	223.000
Wilcoxon W	269.000	1038.000	1043.000
Z	-1.064	-.478	-.369
Asymp. Sig. (2-tailed)	.287	.633	.712

Table 22: Results of the tests of Normality (Shapiro-Wilk) run for L1, L2, L3 and L4. (Sig. value > α normal distribution; Sig. value < α not normal distribution).

None of the two CSR levers "doing good" and "avoiding harm" seem to have a role in determining where the balance of responsibility lies after the occurrence of product recalls. Indeed, investors in the capital markets seem not attentive to how firms treat their employees and don't use high performance in this specific CSR dimension as a an element contributing to the creation of a reservoir of positive moral capital, having the potential to protect a firm relational wealth.

Concluding, being responsible towards its own employees doesn't seem to insure the weighted average cost of capital when product recalls occur.

5. CONCLUSION

The aim of this chapter is showing that, thanks to the analysis of the literature and of the empirical results presented in this report, it is possible to answer to the established research questions. A brief answer to each of them follows.

RQ 1: What are the pros and cons of the metrics used in past studies to measure CSR and its financial impact?

Past studies investigating the financial impact of CSR approached this multidimensional construct from different angles. On the one hand, the focus on *one CSR activity* allows high internal validity and a deep examination but give a restricted view of a concept having so many facets. On the other hand, the choice of considering *multiple CSR activities within one category* or *multiple activities across different categories* gives a more holistic pictures of CSR programs and allow a more fine-grained analysis. However, such choices sacrifice depth for breath and limit the comparability of findings across studies since rarely exactly the same activities are considered. Each approach has its own strengths and weaknesses and a "one fits all" solution doesn't exists.

The lack of clear international standards about how to measure and report CSR have lead to the proliferation of many different CSR measures, whose pros and cons are presented in Table 2 reported hereafter. The choice of one alternative instead of another may lead to different results.

Table 2: Strengths and weaknesses of CSR measures used in past studies investigating the financial impacts of CSR.

CSR MEASURES	STRENGHTS	WEAKNESSES
MONOLITHIC MEASURE AND A SINGLE PROXY *(e.g. philanthropic giving)*	Simplicity of the approach *(Luo and Bhattacharya 2006).*	Don't allow a fine grained understanding of the different nuances and may fail to capture significant differential effects (Godfrey et al. 2009, Godfrey et al. 2010).
AMOUNT OF MONEY INVESTED IN CSR ACTIVITIES AS DISCLOSED IN FIRMS' ANNUAL REPORTS	Simplicity of the approach *(Luo and Bhattacharya 2006).*	The validity of announced investments may be doubtful if annual reports are not validated/audited by externally third parties. Announced investments may be over-reported to impress stakeholders or under-reported to keep a modest profile in promoting good deeds. Lack of consensus on what should be included in CSR investments and what not (Orlitzky et al. 2003, Luo and Bhattacharya 2006).

CONTENT ANALYSIS OF SUSTAINABILITY REPORTS & CORPORATE WEBSITES ***(referred also as CSR disclosure)***	Annual reports are among the main corporate documents representing the company; corporate websites are used to disclose social actions (Kapoor and Sandhu 2010). Measuring a qualitative 'stock' variable (participate in activities or not) facilitate a counting of initiatives. Allows to compute an overall CSR score and sub-scores for each category of CSR activities (Kapoor and Sandhu 2010). Allows to perform longitudinal research on many organizations providing detailed continuous history of social activities (Bansal 2005).	The collection of relevant data is associated with very high efforts and is time consuming (Menz 2010). It requires the development of measuring instruments to compare units of text against particular CSR activities and attribute their incidence (Orlitzky et al. 2003, Kapoor and Sandhu 2010). Content analysis provides no indication of the importance the companies attach to each information item (Gray et al. 1995 cited in Kapoor and Sandhu 2010). The relationship between what is disclosed and performed is troubling if the report is not assessed by third-parties (Richardson et al. 1999).
FORTUNE MAGAZINE MOST ADMIRED COMPANY RANKING ***(reputational ranking)***	Ranking of the US most admired corporations. Revised yearly. The ratings represent a comparison among major competing companies in a given industry. Based on the polls of financial analysts, senior executives, and Wall Street investors from large companies. (Luo and Bhattacharya 2006, Neville et al. 2005)	Assumes that reputations are good reflections of underlying values and behaviors (Orlitzky et al. 2003). Expresses more the firm's overall management than its socially responsible decisions (Waddock and Graves 1997). Highly correlated and hence influenced by other end state metrics such as ROA (Peloza 2009). The use of reputation indices as a measure of CSR is questionable since they are expected to obscure the relationship between actual CSR investments and financial performance (Wood and Jones 1995). Respondents are selected from within the business field (Neville et al. 2005).
KLD STATS ***(developed by Kinder, Lydenberg, and Domini Research and Analytics Inc,. a financial advisory firm specialized in the assessment of companies' corporate social performance)***	Considered the "gold standard" and largely used in the academic literature. Take the multidimensionality of CSR into account (Menz 2010). Offer more objectivity than a measure based on Fortune's survey data (Chand, 2006 cited in Callan 2009). Firms are rated using an objective set of screening criteria applied consistently (Turban and Greening 1996, Nelling and Webb 2009). Respondents are not affiliated with any of the rated companies (Turban and Greening 1996). Assess each CSR item in terms of strength and concerns (Menz 2010, Nelling and Webb 2009). The use of electronic database reduces the time needed to collect CSR data (Godfrey et al. 2009). It measures a qualitative 'stock' variable facilitating a counting of initiatives (Godfrey et al. 2009).	Proprietary indexes. Payment requested to get access. It contains information about U.S. corporations only (Menz 2010). Almost all factors have the same weight (Di Giulio A. et al. 2007) and this complicates the inter-sectors comparability. Indeed, different issues do not have the same importance across all industries (Steger et al., 2007 cited in Menz, 2010).

Regarding the financial impact from CSR, two categories of metrics have been used in past studies: *end state outcome metrics* and *intermediate outcome metrics.* Within end state metrics, three types of measures are distinguished: accounting-based, market-based and perceptual. Pros and cons of the first two, largely used in past studies, are presented in Table 3 reported hereafter. Perceptual measures generally consist in surveys capturing managers' subjective estimates of a firm's financial position and hence may be considered not so credible and biased by other stakeholders.

CFP MEASURES	PROS	CONS
ACCOUNTING-BASED - return on assets (ROA) - return on equity (ROE) - pretax income to net sales (RPTI) - gross profit to net sales (RGM) - earnings per share (EPS) - growth in sales - growth in total net assets - etc.	Indicate what is actually happening in the firm (Lopez et al. 2007). Demonstrate how efficiently the firm uses its assets to generate value (Peloza 2009). Suited to capture the value of CSR initiatives designed to immediately reduce operating costs, e.g. decreasing waste (Peloza 2009).	Backward-looking (Luo and Bhattacharya 2006). Not always consistently applied among firms and driven by the accounting practices (Peloza 2009). Subject to managers' discretionary allocations of funds to different projects and policy choices (Orlitzky et al. 2003). Reflect internal decision-making capabilities and managerial performance rather than external market responses to organizational actions (Orlitzky et al. 2003). Not adjusted for risk and can be distorted by accounting laws and conventions (Lopez et al. 2007). Bias the short-term excessively and can misrepresent the business case for CSR given that the main benefits of CSR investments are shown in the long term (Torres et al. 2010, Luo and Bhattacharya 2006). The use of such metrics is considered one of the possible cause of the equivocal results found in prior empirical researches (Margolis and Walsh, 2003 cited in Luo and Battacharya, 2006).
MARKET-BASED (investor returns) - stock price - stock volatility - price per share - Tobin's q (the ratio of the stock market value of the company to the cost of its tangible assets) - etc.	Forward-looking and hinge on growth prospects and profits sustainability (Luo and Bhattacharya 2006). Give the perception that the stock market have of differentiating factors such as the adoption of CSR programs or negative events such as product-harm crises (Lopez et al. 2007). Reflect the notion that shareholders are a primary stakeholder group whose satisfaction determines the company's fate (Orlitzky et al. 2003).	More noisy than accounting-based measures since speculation and other macroeconomic factors could have an influence on results (Lopez et al. 2007).

Table 3: Pros and cons of accounting-based and market-based financial measures.

Intermediate metrics (such as cash flow and changes in risk profiles), whose outcomes eventually create business value in the end state, provide a measure of the financial value to the firm that might not be visible in end state metrics because obscured by noise due to competitive pressures, economic cycles or regulatory changes. However, getting access to all the financial data needed to compute some intermediate metrics may be tricky for researchers since managers are not inclined to publicly disclose the entire financial figures of their companies.

RQ 2: What is the theoretical underlying mechanism through which CSR can act as an insurance policy?

The theoretical underlying mechanism of the insurance from CSR is graphically represented in Fig. 3.

The engagement in discretional CSR activities creates a reservoir of positive moral capital when stakeholders assess the act as positive and the firm itself (actor) as having a genuine motivation to invest in a specific CSR activity. An act is evaluated as positive when there is consistency between it and stakeholders' ethical values.

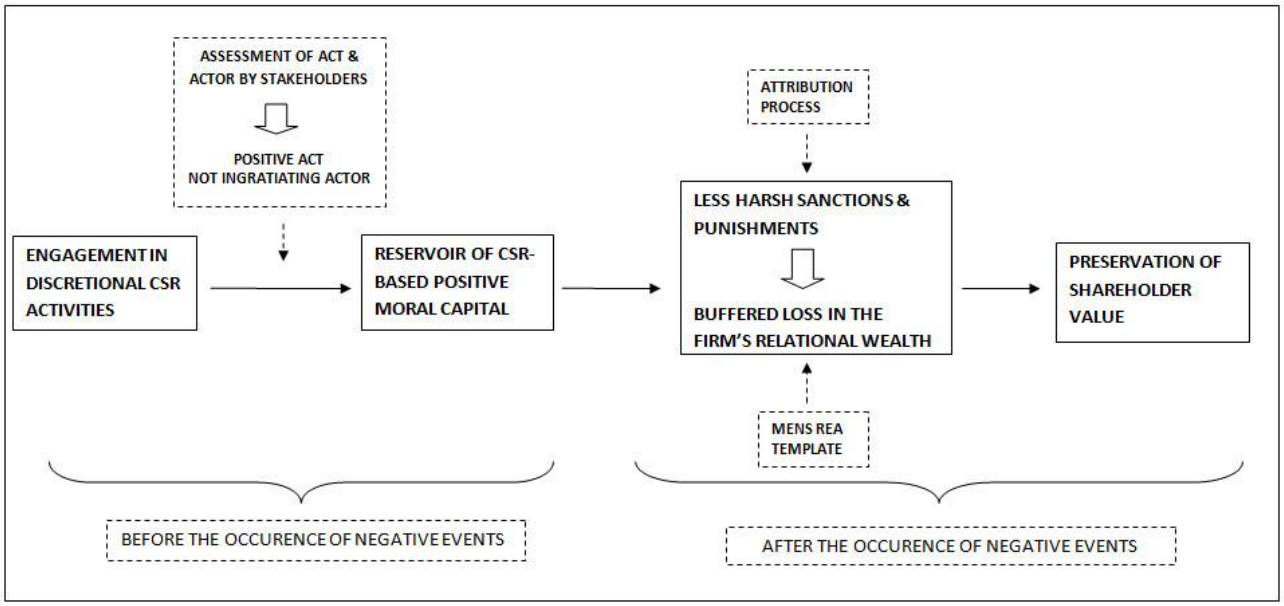


Fig. 3: Complete theoretical underlying mechanism of the insurance from CSR

Given that an act can be evaluated as positive or negative and the intentions/motivation/character of an actor as genuine or ingratiating, positive moral capital is generated only in one of the four possible combinations. To reduce the risk that CSR activities would be seen as ingratiating, managers are called to engage in activities that are consistent with the firm's identity. It means that CSR activities should be driven by the core and enduring values that the company uses to define itself. Moreover, firms should analyze their stakeholder base before deciding whether to invest in CSR activities targeted to specific stakeholders groups or to a broad base. Indications about how to tailor CSR programs to dominant stakeholder groups and avoid possible drawbacks are given in Section 2.5.1.

Engagement in CSR activities by companies belonging to "vice" industries (such as tobacco and alcohol) is more likely to be perceived as "green washing", "blood money" or "ingratiating". In such cases the signal value of CSR and consequently its insurance value is diminished or destroyed.

The value of a firm's relational wealth rests in the judgments and perceptions of its stakeholders. In case of negative events (originated by business activities, conducts or operations and adversely impacting

stakeholder groups or the firm's integrity) the positive moral capital prevents or at least mitigate the loss in relational wealth, protecting shareholder value. The negative effects are buffered thanks to the mitigation of stakeholders' assessments and resulting sanctions and punishments. CSR-based positive moral capital contribute convincing stakeholders that the negative event is due to bad luck and not to bad management. Moreover, it contributes seeing the negative event as a forgivable act, an unforeseeable event in an otherwise strong record of CSR efforts. The protection of shareholder value is due to the accordance of the benefit of the doubt to the firm and the mitigation of the attribution of both blame and guilty mind. The cognitive processes involved are the "*attribution process*" and the "*mens rea template*", discussed in Sections 2.5.2.

According to the attribution model conceptualized by Weiner in 1980, if the locus is internal and the behavior stable and controllable, stakeholders tend to attribute the responsibility to the firm and hence blaming it for the negative event. Moreover, the attribution of blame is said to be in direct proportion to the severity of the event and the firm's apparent responsibility. On the other hand, when the locus is external and the behavior is temporary and not controllable by the firm, blame tends to be attributed to factors external to the company. Since attributions derive from the interaction of event-related information and the observer's prior beliefs, they may be biased from the latter. Indeed, evidence shows that consumers' interpretations of a firm's response to negative events are subjected to their prior expectations, given by accumulated experience with the company and information about the firm past CSR behavior. Information related to the negative event are indeed generally interpreted in a confirmatory fashion.

When negative events occur, each stakeholder group mete out sanctions accordingly to its power and role in society. In tailoring sanctions/punishments stakeholders follow the cognitive template suggested by the "mens rea doctrine". The reservoir of positive moral capital provides counterfactual evidence which mitigates the assessment of guilty mind and stakeholders see the negative event more as due to bad luck than to negligence or irresponsibility.

As for any other form of insurance, a firm may rely on the insurance from CSR only if investments in CSR activities are done prior any potential negative event happens.

RQ 3: What are, according to the literature, the contingences affecting the ability of CSR to act as an insurance policy?

The ability of CSR to act as an insurance policy, mitigating the loss in a firm's relational wealth and hence protecting shareholder value, is affected by the contingences briefly described hereafter.

Level of effort and commitment

In case of negative events, stakeholders are more prone to accord the benefit of the doubt and less harsh sanctions when firms show effort and commitment to their CSR programs. *Effort* is shown investing a considerable amount of time and resources in CSR activities whereas *commitment* is expressed through long-term partnerships with NGOs and sustaining the chosen causes for many years. A pattern of consistency provides counterfactual evidence that decision makers engage in CSR activities for genuine motivations and not on an opportunistic or capricious basis. Furthermore, the direct contribution of expertise, for instance providing support using unique abilities, is seen as less self-serving and more altruistic. Conversely, an unfocused CSR (not integrated into the corporate culture and resulting in dozens of short-term relationships with NGOs) doesn't provide insurance protection. Indeed it is generally judged as exploitative of the cause and not genuine.

Strategic fit between CSR activities and core business

Engaging in CSR activities having a high degree of fit with a firm's core business is likely to be perceived as motivated by genuine altruistic intentions. It hence contribute building up the reservoir of positive moral capital on which a firm can count when facing negative events. Moreover, a high degree of fit firm/cause will gain exposure to NGOs and activist groups building a constructive dialogue and partnerships with them. NGOs and activists might intervene on the behalf of the company giving to consumers and other stakeholders the permission to forgive the bad act. Thus is expected to help the firm to be seen as a good actor involved in an unforeseen negative event and hence less guilty. A second advantage of partnerships with NGOs is that the firm can use their advice and expertise to make better decisions in choosing the best portfolio of CSR activities. Finally, engaging in CSR programs with a high degree of fit with the firm core strategy is expected to be easier for the company itself, reducing in turn the risk of diluting managerial attention.

Transparency in disclosing information about CSR activities

Without an adequate visibility and transparency, stakeholders cannot use CSR as an informational signal of a firm's social responsibility and commitment. It is hence clear that disclosing information about the reasons for specific choices, who are the targets of the vary CSR activities, the level of support given and

the goals is fundamental. Firms should ensure their dominant stakeholders are aware of CSR programs in order to create a stock of positive moral capital that can act as insurance in case of eventual negative events. Among the media usually used to disclose information about CSR there are annual sustainability reports and corporate web-sites.

Promotion of CSR activities

The best strategy to promote CSR activities and create a reservoir of positive moral capital is corporate modesty. Many managers believe that actions speak louder than words and that over-promotion might lead stakeholders to view CSR activities as self-serving. Third-party endorsements such as indirect promotion done by nonprofits partners is preferable.

Industry in which the firm operates

The ability of CSR to operate as an insurance policy is affected by the industry in which a firm operates. Indeed, firms in the so-called "vice" or "sin" industries (such as alcohol and tobacco), firms in industry which deplete environmental resources (such as utilities) and manufacturing companies in heavy polluting industries have more difficulties creating a reservoir of positive moral capital. It is indeed likely that their CSR engagement is seen by stakeholders as done to cover ongoing "sin" business practices rather than for genuine reasons.

Effectiveness of corporate response to negative events

The ability of CSR to act as an insurance policy may be significantly reduced if a company facing a negative event doesn't involve stakeholders and doesn't keep them informed about what is happening and the actions that it will take to solve/reduce the adverse impacts. Such actions signal the firm' commitment to solve the issue and at the same time provide a cue for the confirmation that prior CSR performance were genuine. A lack of transparency could lead to media speculation and backfire to the company.

Responsiveness in adapting CSR portfolios to economic/social changes

As economic and social conditions change, stakeholders' views of what constitutes a good cause to address through CSR programs shift as well. Being responsive in adapting CSR portfolios of activities to meet current issues and pressing needs is likely to be interpreted as a signal of genuine motivation and thus expected to increase the likelihood of generating positive moral capital. Finally, before dumping a CSR activity in favor of another, a firm should disclose the reasons of such a change to their dominant stakeholders. In such a way, managers might reduce the risk that the change would be interpreted as a cut and hence as a signal of irresponsibility.

RQ 4: Do the capital markets recognize and value CSR as a form of insurance in terms of risk adjusted cost of capital?

A firm's cost of capital is the expected rate of return demanded by investors/lenders for providing capital and bear the risk of a specific stock/debt. It is also the rate used to discount a firm's future cash flows. Consequently, the higher the cost of capital, the lower the present value of the firm's future cash flows and the more costly is for the firm financing itself. Moreover, the more costly is the capital, the less chance the firm has to make a profit regardless of its level of revenues. A rise in investors' risk premium may also quash previously feasible projects. Conversely, a reduced cost of capital should increases the firm's ability to make a profit from a given level of revenue and, all the other things being equal, attract more investors leading to an increased investors base. Besides being an important determinant of a firm's valuation, the cost of capital is a critical component to portraying capital markets' attention to CSR. Since most publicly held firms finance themselves with both debt and equity, the firm's overall cost of capital is given by the weighted average of its cost of debt and equity capital (WACC).

To investigate whether the capital markets recognize and value CSR as a form of insurance and if its buffering effect is visible on a firm's WACC when a product recalls occur, three Hypotheses have been tested. Hereafter, the findings obtained testing each Hypothesis are briefly reported and discussed.

Hypothesis 1 argues that high CSR overall score firms will have a lower increase in their weighted average cost of capital than low CSR overall score firms when facing product recalls. This has been tested comparing the mean % changes in WACC in the short, medium and long terms of high and low CSR overall score firms running both independent samples t-tests and Mann-Whitney tests (non-parametric equivalent to the t-test). Evidence shows that being a CSR champions doesn't pay off financially in terms of a lower increase in WACC when facing product recalls. Indeed, high CSR overall score firms show no statistically significant differences in their mean % changes in WACC compared to low CSR overall score firms. Such findings suggest that investors in the US capital markets don't recognize and value CSR as an overall construct as a form of insurance in terms of cost of capital. Thus might be explained in three alternative ways: 1) investors don't care about sustainability issues, seeing CSR investments as a cost and being interested only in the return on investments; 2) investors are not aware of the many potential benefits of the insurance from CSR and hence don't appreciate it; 3) the theorized insurance from CSR doesn't exist. If the second one was the truth, there might be still plenty of work to do for marketers in making investors aware of the mechanism through which CSR can act as an insurance policy protecting shareholder value. Another plausible explanation is that CSR and its potential insurance benefit appeal more to consumers, employees and other stakeholders who are more concerned with social and environmental sustainability issues than investors. Such findings are aligned with the skeptical view of CSR, arguing that being socially sustainable doesn't pay

off financially and that companies should leave such issues to governments and NGOs. In relation to the examined population, Hypothesis 1 is rejected in all the short, medium and long terms. Such findings are in line with a prior study showing that at the aggregate level CSR does not relate to equity cost (Derwall and Verwijmeren 2007).

Hypothesis 2 argues that, facing product recalls, firms having a high CSR Employee Relations score will have a lower increase in their WACC than firms having a low score in such dimension. It has been tested running independent t-tests and Mann-Whitney tests on the mean % changes in WACC in the short, medium and long term. The choice of focusing on one specific CSR dimension is explained as follows: a fine-grained knowledge is expected to be valuable for managers in tailoring their CSR programs to the activities priced most by the capital markets. Moreover, a recent study suggests that investments in improving responsible employee relations, environmental policies and product strategies contribute substantially to reducing firms cost of equity (Ghoul et al. 2011). The data analyzed in this thesis leaded to the rejection of the formulated Hypothesis 2 in all the three time windows considered. Indeed, they show no statistically significant differences between firms having high/low CSR Employee Relations score in terms of mean % changes in WACC after product recalls. Such findings are coherent with the evidence found in relation to the CSR overall score. Indeed, it emerges that investors in the capital markets seem not to recognize the insurance value of CSR -neither as a whole nor as employee relations- in buffering the negative effects of product recalls on a firms financing costs. Investors don't seem to price CSR Employee Relations strategies in terms of cost of capital. One plausible explanation is that investors are not particularly attentive to how employees are treated, being mainly focused on return on investments.

Hypothesis 3 argues that, in relation to the CSR dimension Employee Relations, the positive CSR lever "doing good" gives more insurance than "avoiding harm". Evidence shows that none of the two CSR levers seems to have a role in determining where the balance of responsibility lies after the occurrence of product recalls. Indeed, investors in the capital markets don't seem to use high performance in this specific CSR dimension as a an element contributing to the creation of a reservoir of positive moral capital, having the potential to protect a firm relational wealth.

Altogether the findings of this research show that CSR champions did not shown any significant cushion effect on firms WACC after the occurrence of product recall neither considering CSR as an overall construct nor in its specific dimensions, employee relations. Thus increases our knowledge on whether and how CSR create/protect shareholder value, showing that it doesn't. This study, that is a first attempt of investigating the cushion effect of the insurance from CSR on a firm's risk adjusted cost of capital, produced coherent results. Indeed, as can be seen in Table 23, it leads to the rejection of all the formulated Hypotheses in the

short, medium and long term. This research contributes shedding light on the highly debated question whether or not investors in the stock market value CSR strategies, producing evidence that they don't.

HYPOTHESIS	SHORT TERM	MEDIUM TERM	LONG TERM
H1: FACING A PRODUCT RECALL, FIRMS HAVING HIGH-CRS OVERALL SCORE WILL HAVE A LOWER INCREASE IN THEIR RISK ADJUSTED COST OF CAPITAL THAN FIRMS HAVING LOW CSR OVERALL SCORE.	REJECTED	REJECTED	REJECTED
H2: FACING A PRODUCT RECALL, FIRMS HAVING A HIGH SCORE IN THE CSR DIMENSION "EMPLOYEE RELATIONS" WILL HAVE A LOWER INCREASE IN THEIR RISK ADJUSTED COST OF CAPITAL THAN FIRMS HAVING A LOW SCORE IN SUCH CSR DIMENSION.	REJECTED	REJECTED	REJECTED
H3: IN RELATION TO THE CSR DIMENSION "EMPLOYEE RELATIONS", THE CSR LEVER "DOING GOOD" WILL GIVE MORE INSURANCE THAN THE LEVER "AVOIDING HARM".	REJECTED	REJECTED	REJECTED

Table 23: Rejection of all the three formulated Hypothesis in the short, medium and long term.

6. DISCUSSION

The structure of this chapter is as follows. First, the academics and managerial implications of this thesis are discussed. Second, the limitations of this work are presented. Finally, indications for future research are given.

6.1 ACADEMIC AND MANAGERIAL IMPLICATIONS

The implications of this thesis for scholars and practitioners are discussed In this Section.

First, the study of the financial impacts of CSR has been approached from a new angle. Only recently academics have started examining whether a link between CSR and a firm's financing costs exists and, to the best of our knowledge, no prior studies have examined the role of the insurance from CSR in buffering the impact of product recalls on the weighted average cost of capital. Despite prior studies focused mainly on the cost of the equity capital disregarding the debt cost, this research considered both the equity and debt components. The importance of investigating CSR potential to perform the core functions of an insurance for a firm's relational wealth is stressed by both the increasing weight of such intangible assets and their lack of insurability using traditional insurance contracts.

Second, the extensive analysis of the literature about the marketing/finance interface and others fields of study within the social science gives to the reader a complete picture of the theory the insurance from CSR and up-to-date empirical evidence. Scholars may find interesting the overview of pros and cons of the metrics used in past studies to measure CSR and its financial impact. Indeed, the awareness of strengths and weaknesses of past studies is expected to be helpful in developing research designs aimed at proving/controvert the business case for CSR. Other relevant contributions are: the definition of negative events and the identification of their characteristics, the graphical representation of the state of the art of the underlying theoretical mechanism of the insurance from CSR and the analysis of the contingences affecting the ability of CSR to act as an insurance policy. Finally, the disentanglement of the potential benefits of the insurance-like property of CSR across vary stakeholder groups is expected to be a valuable tool for practitioners in showing top management the many ways in which being sustainable may pat off.

Third, an ad hoc selective process has been developed to identify the population of firms matching simultaneously the three conditions necessary to test the established hypotheses. If only the first two conditions were matched it would not be possible to measure CSR and cluster the population in the cells of the "CSR overall score matrix" and "CSR Employee Relations score matrix". Similarly, if only the first and third conditions were matched it would not be possible making any consideration about the % changes in

WACC. Finally, as for any other form of insurance, the potential "cushion" effect of the insurance from CSR can be investigated only after the occurrence of negative events.

Fourth, the underlying logic of the matrices developed to identify companies having high/low CSR scores and of the Excel spreadsheet used to automatically cluster firms and recalls in the different cells of the matrices are expected to have a broad applicability (e.g. different CSR dimensions and/or other methodologies to investigate CSR as an overall concept).

Fifth, this study contributed shedding light on an open question: whether responsible firms have or not negative events less often than negligent firms. The high CSR firms considered in this study had, in the examined time window, less product recalls than low CSR firms confirming the findings of a recent study (Minor, 2011).

Sixth, from the analysis of the WACC and N. recalls time-series of high/low CSR Employee Relations score companies it emerged that all the high CSR firms having a pattern in line with the theory of the insurance from CSR had in the long period a value of their WACC below the one pre-negative event. On the other hand, 60% of the low CSR companies had in the long term a WACC higher the value pre-negative event. Thus suggests that in the long run after the occurrence of a negative event, "CSR champions" seem to have an edge on "socially irresponsible firms". In future research it would be interesting investigating whether there are differences among high/low CSR firms in terms of the length of recovery time after a negative event.

Finally, this research got coherent findings showing that that CSR champions haven't had any significant cushion effect on their WACC after the occurrence of product recall, neither considering CSR as an overall construct nor its specific dimensions, employee relations.

6.2 LIMITATIONS

This thesis shows two main limitations. First, the impossibility of determining the actual weight of each recall in case a company had multiple recalls in the same half-quarter of a given year. Second, it is likely that the obtained % changes in WACC are a combination of: 1) direct costs of product recalls; 2) the buffering effect of the insurance from CSR; 3) managerial decisions not related to CSR; 4) speculations in the stock market.

The possibility of relying only on the data disclosed quarterly by companies, makes very tricky for researcher outside a specific company going further general considerations on mean changes and general patterns that seem or not in line with the theory of the insurance from CSR. Indeed, as stated by Peloza 2009, the possibility for academics of relying on secondary data available in databases and the impossibility of getting access to the complete financial statement of a company are clearly limiting the progress in understanding whether and how CSR can impact firms' financial performance. For instance, companies tend to not disclose the direct costs of product recalls.

Both limitations might be overcome if companies and academics will perform conjoint research, expected to produce valuable findings with mutual benefits. Indeed, on the one hand, academics can offer companies research skills and sound knowledge of the many theories involved. On the other hand, managers possess detailed information to estimate the actual weight had by one product recall on the company financing costs and to what degree the reservoir of positive moral capital acted as a buffer protecting the relational wealth of the firm and hence its value. Only managers might have a clear picture of the many others managerial decision and speculations that could have contributed to WACC variations. Conversely, working separately, academics will keep striving to get fine-grained data to test theories whereas marketing managers will keep striving proving top management how investments in CSR are worthy.

6.3 FUTURE RESEARCH

In future research it would be interesting considering different types of negative events to test whether the findings of this research can be generalized. Thus is expected to increase the current knowledge on whether being responsible pay off more in case of integrity-related or stakeholder-based negative events. It is not excluded that research focused on different industrial sectors and/or different type of negative events (such as integrity related ones) might find results different from the evidence discussed in this report.

Investigating other specific CSR dimensions besides employee relations might increase the fine-grained knowledge of the potential buffering effects of the insurance from CSR on the financing costs of companies. The underlying logic used to construct the matrices can easily be adapted to a different realities and to specific CSR activities.

Future research might also investigate the correlations and/or synergistic effects of different CSR activities/dimensions eventually found to buffer the adverse impacts of negative events on the cost of capital. Thus is expected to give managers unique indications on what combinations of CSR activities pay off financially.

It would be interesting also testing the conceptual framework in Europe, where companies tend to finance themselves using more the debt market than equity. In Europe the credit market is dominated by institutional players who are expected to trade on the basis of more information, act more rationally and have the competencies to take into account complex issues like CSR in their investments more than individual investors. Hence, studies focused on European companies instead of US companies may found different results.

Applying the framework in North and South Europe, USA, Latin America, Asia, etc. would allow scholars to investigate eventual differences in CSR programs and investors preferences for sustainability issues. Such knowledge would be particularly valuable for multinationals companies since would allow them to tailor CSR programs choosing the activities taken into biggest considerations by the capital markets.

It would also be interesting investigating eventual differences among high/low CSR firms in relation to the length of recovery time, i.e. how long do they take to get a value of WACC closed to the one pre-negative event. Both a quicker recovery and/or the settlement in the long term on a lower WACC level than the pre-negative events one, could be source of competitive advantage for high CSR firms, contributing proving the business case of CSR.

Finally, a sensitivity analysis on how the results found in this research would change plugging into the used WACC formula different interest rates or using different models to compute its components, is expected to significantly increase the current knowledge about whether and how CSR impact financing costs.

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APPENDIX

LIST OF GRAPHS IN THE APPENDIX

ANALYSIS OF THE GRAPHS PLOTTING WACC AND N. RECALLS TIME-SERIES OF THE HIGH/LOW CSR EMPLOYEE RELATIONS SCORE FIRMS

Before analyzing the graphs plotting the WACC and product recalls time-series of the firms in cells B and D of the "CSR Employee Relations score matrix", it is worthy to briefly explain how they are structured.

Each graph presents the time (in year-quarters) in the x-axis and two y-axes, the one on the left referred to WACC and the one on the right referred to the N. of recalls. The time-series of WACC are plotted using a blue line whereas the time-series of the N. of recalls are plotted using a dashed grey line. The N. of recalls is reported also in correspondence to the quarters in which they had been published in the FDA Enforcement Reports. Each graph shows two other lines: a green one and a red one. The green one is the moving average using N=2. The red one is the moving average obtained considering a number of past observation ranging from 3 to 6. N=6 means that the forecast is made considering 6 quarters before the quarter of publication of the recall, i.e. 18 months. When the years 2003 and 2007 are in the graph, the N. of recalls is not indicated for these two years since they are outside the time window considerate in this research.

Finally, each graph is followed by a Table reporting the following information: 1) final day of the quarter; 2) WACC computed as explained in the previous sections; 3) N. recalls; 4) an indication of whether the recalls occurred in the first or second half-quarter; 5) the values of the moving average with N=2; 6) the values of the second moving average (red line); 7) the Δ given by the difference of the actual WACC and the one resulting from the moving average in red.

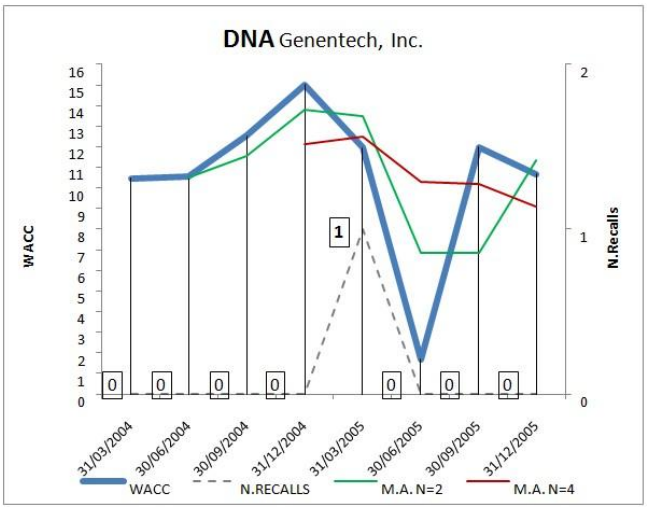
The moving average method will be used to attempt to forecast what would have been the pattern of the weighted average cost of capital whether the product recall would not have happened. The moving average approach is a smoothing technique that less the impact of randomness in individual short-range forecast, averaging several prior values. As any other time-series method, the moving average approach can be seen as a study of the past combined with the assumption that some of the causal relationship will hold in the future. If N past observations are considered, the moving average method would forecast the next period as 1/N of the total of prior values. Indeed, as the number of observations considered in computing the moving average grows larger, the smoothing effect becomes greater. The average is referred as moving since when new data becomes available, the newest observation replaces the oldest (Lilien et al. 2007). As any other forecasting technique the moving average approach has strengths and weaknesses. For instance, it is particularly effective for forecasting a single period in advance, but do not adapt easily to pattern changes. However, any forecast is an estimate at best and no perfect method exist.

HIGH CSR EMPLOYEE RELATIONS SCORE FIRMS HAVING HAD ONLY ONE RECALL

According to the assumption done in this research, it is expected that recalls happened in the second-half quarters will show their effects on WACC starting from the quarter after the one in which the recall was published. On the other hand, recalls published in the first half-quarters are expected to show their effects on the WACC starting from the end of the same quarter.

Graphs A.1, A.2 and A.3 refer to the companies DNA, HAE and K, all three having had high CSR Employee Relations score and only one product recall in the time window considered. Looking at such graphs it is possible to identify some patterns in line with the theory of the insurance from CSR.

DNA (Graph A.1) had no product recalls in 2004 and its WACC was stable around 10.5 in the first two quarters and then increased to 12.5 and 15 respectively in Q3 and Q4 2004. As can be seen looking at the blue line, its pattern is higher than the one extrapolated considering N=2 in both Q3 and Q4 2004. In the second-half of Q1 2005 DNA had one product recall. DNA's WACC showed a deep valley in the short term after the recall, dropping from 11.9 to 1.7. In the medium term it jumped back to 11.9 and then decreased a bit in the long period reaching 10.68. Such pattern is partially in line with the theory of the insurance from CSR regarding high CSR firms. However, it is unlikely that the deep valley is a consequence of the buffering effects of the insurance from CSR alone.



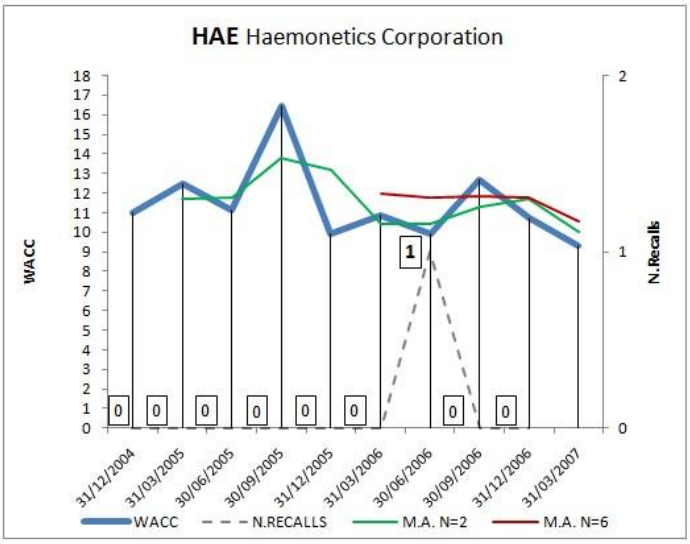
Final day of the Q	WACC	N. Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC – $WACC_{M.A.\ N=4}$
31/03/2004	10.460	0					
30/06/2004	10.543	0			10.502		
30/09/2004	12.545	0			11.544		
31/12/2004	15.021	0			13.783	12.142	2.878
31/03/2005	11.963	1		1	13.492	12.518	-0.555
30/06/2005	1.699	0			6.831	10.307	-8.608
30/09/2005	11.998	0			6.848	10.170	1.828
31/12/2005	10.685	0			11.341	9.086	1.599

Graph A.1: DNA company: time-series of WACC, N. recalls and moving averages.

Clearly other factors intervened, for instance speculations in the stock market. This assumption seem confirmed by the fact that in the quarter immediately after the valley the WACC jumped up to the same

value. Such a valley was not expected in light of past values as shown by the red line (the moving average with N=4).

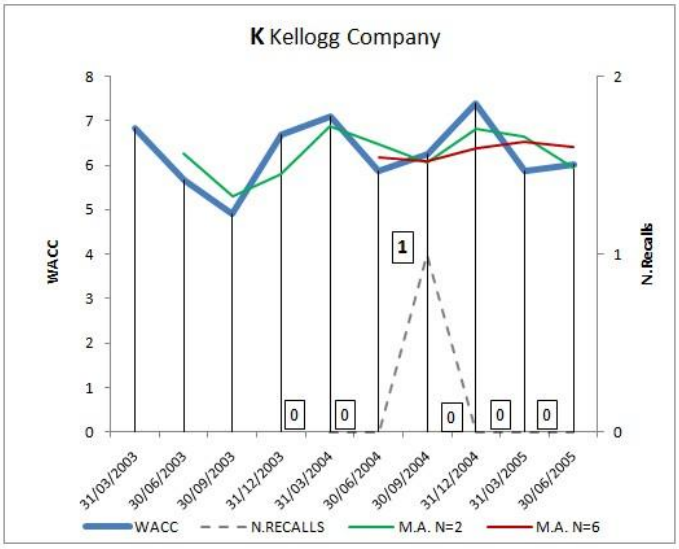
It would be tempting arguing that the Δ between the actual WACC and the one got using the moving average with N =4 is the WACC variation due to the product recall but, to assert it, a more precise forecasting technique would be needed. What can be said is that in such Δ there are the effects of the product recall and of the insurance from CSR since the red line shows the extrapolation for Q4 2004 on the basis of 4 periods with no recalls and the extrapolation for Q1 2005 reducing at ¼ the weight of the recall.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/12/2004	10.988	0					
31/03/2005	12.474	0			11.731		
30/06/2005	11.110	0			11.792		
30/09/2005	16.475	0			13.792		
31/12/2005	9.924	0			13.199		
31/03/2006	10.855	0			10.390	11.971	-1.116
30/06/2006	9.940	1	1		10.398	11.796	-1.856
30/09/2006	12.652	0			11.296	11.826	0.826
31/12/2006	10.730	0			11.691	11.763	-1.032
31/03/2007	9.321				10.026	10.570	-1.250

Graph A.2: HAE company: time-series of WACC, N. recalls and moving averages.

Looking at HAE in Graph A.2, it can be seen that when the product recall occurred in the first-half of Q2 2006 the WACC (blue line) stopped increasing and changed its slope decreasing to 9.94 which is 1.856 lower than the level forecasted for Q2 2006 using the moving average with N=6 (red line). Hence, even the negative event occurred, the actual WACC decreased to a level lower than the forecasted ones (that consider the fact that from Q4 2004 to Q1 2006 there were no recalls). Conversely, in the medium term the WACC increased from roughly 10 to 12,65 but in the long term dropped again at 10,73, value quite near to the WACC pre-recall. Such pattern is in line with the theory of the insurance from CSR, particularly in the short term. Indeed, it is expected that a high CSR company can count on the reservoir of positive moral capital crated before the occurrence of negative events. Thanks to such reservoir, stakeholders should be much prone to give the company the benefit of the doubt and considering the negative event as "bad luck" and not as the result of negligence or bad management.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2003	6.846						
30/06/2003	5.680				6.263		
30/09/2003	4.918				5.299		
31/12/2003	6.691				5.804		
31/03/2004	7.092	0			6.891		
30/06/2004	5.859	0			6.475	6.181	-0.322
30/09/2004	6.259	1	1		6.059	6.083	0.176
31/12/2004	7.402	0			6.830	6.370	1.032
31/03/2005	5.872	0			6.637	6.529	-0.657
30/06/2005	6.025	0			5.948	6.418	-0.393

Graph A.3: K company: time-series of WACC, N. recalls and moving averages.

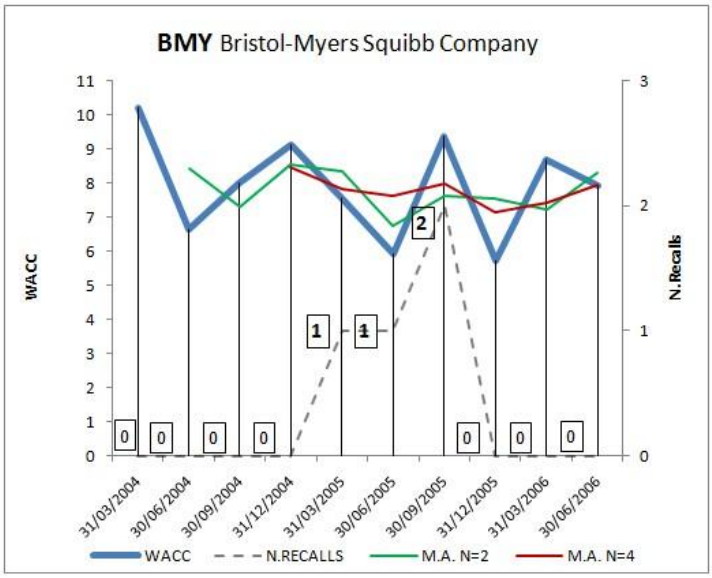
Kellogg (in Graph A.3) shows an increase in its WACC both in the quarter of the recall and in the following one. Two quarters after the publication of the recall its WACC dropped at the level pre-recall. The actual WACC is higher than the extrapolated one using both the moving averages with N=2 and N=6 in the quarter of the recall. Part of the Δ between the actual WACC and the forecasted one is attributable to the recall. Unlike DNA and HAE, K seems to have felt more the effects of the recall in the Q of the publication since the blue line is above the red one.

HIGH CSR EMPLOYEE RELATIONS SCORE FIRMS HAVING HAD MULTIPLE RECALLS

Time-series of companies BMY, EW, KG and MDT, all having high CSR Employee Relations score and multiple product recalls in the time window considered, are illustrated in Graphs A.4, A.5, A.6 and A.7.

Starting with BMY in Graph A.4, we see that this company had a first product recall in Q1 2005. In the quarters preceding the recall the WACC had an increasing trend but in Q1 2005 it changed slope decreasing and reaching a level lower the red line that is the moving average with N=4. BMY's WACC kept decreasing also when a second recall occurred in Q2 2005 and again the blue line is below the red one. It seems that BMY's stakeholders see such company as a socially responsible one which had some "bad luck" but is still trustable as a social responsible company and attentive at starting necessary products recalls to safeguard potential users. The situation changed when in Q3 2005 BMY had other 2 recalls. Indeed, the WACC not only stopped its decreasing but changed slope and started increasing. According to the insurance from CSR, even high CSR companies that can count on a reservoir of positive moral capital are not likely to get any

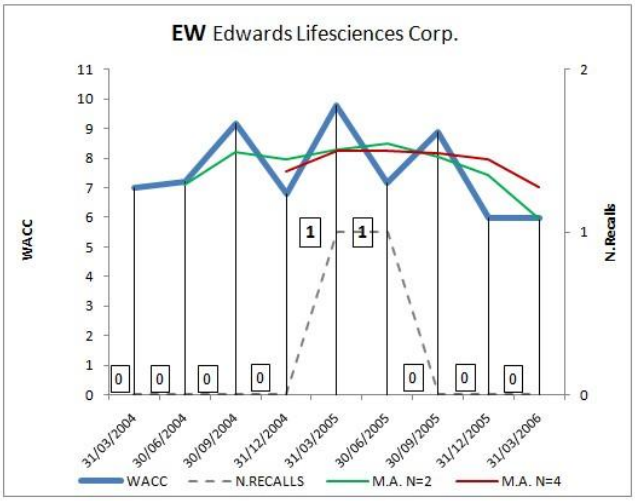
benefit out of it when having multiple recalls in a row. Even the most CSR committed stakeholder at the fourth recall in a row would start doubting that maybe it is not just a matter or bad luck and that the company might be guilty of being defective in safety controls or management. In Q4 2005 BMY's WACC stopped increasing and closed around the level before the last two recalls to jump up again in Q1 2006.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2004	10.181	0					
30/06/2004	6.634	0			8.407		
30/09/2004	7.987	0			7.310		
31/12/2004	9.108	0			8.548	8.478	0.630
31/03/2005	7.543	1		1	8.325	7.818	-0.275
30/06/2005	5.906	1		1	6.724	7.636	-1.730
30/09/2005	9.362	2	2		7.634	7.980	1.382
31/12/2005	5.725	0			7.543	7.134	-1.409
31/03/2006	8.698	0			7.211	7.422	1.275
30/06/2006	7.911	0			8.304	7.924	-0.013

Graph A.4: BMY company: time-series of WACC, N. recalls and moving averages.

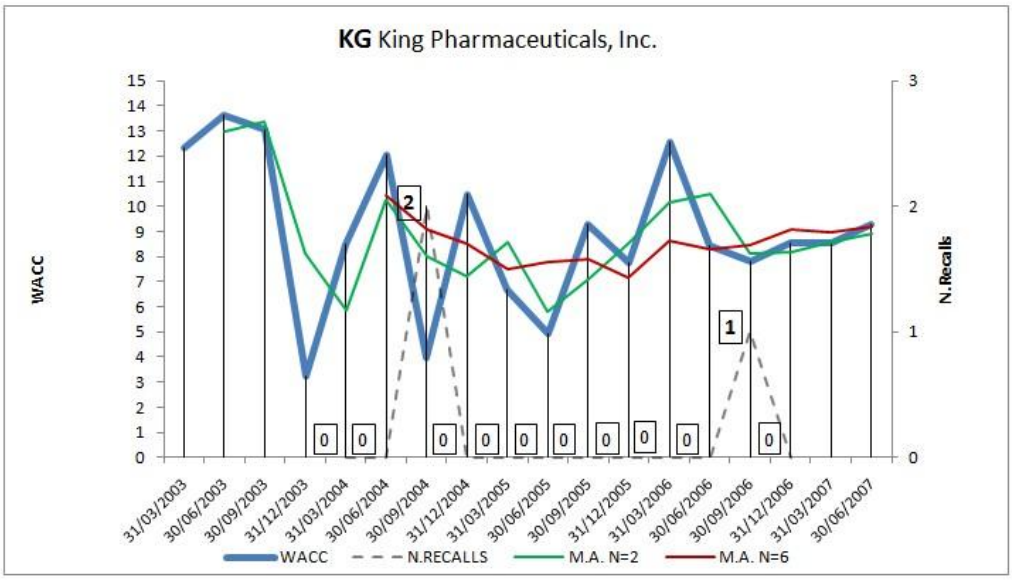
Regarding EW in Graph A.5, a first recall occurred in the first-half of Q1 2005 and, as expected, it showed its effects already at the closing of the same quarter. Indeed, the blue line shows an increasing slope from 31/12/2004 and 31/03/2005 and the actual WACC is above both the average means. In Q2 2005, EW's WACC changed slope decreasing. In the second-half of Q2 2005 EW had another recall that, as expected, showed its effects on the firm's financing costs in the quarter after when WACC had a pike. Already in Q2 2005 the actual WACC decreased and in the long term it stabilized around 5.9. This high CSR firms seems having had quite a rapid recovery after both the recalls.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2004	7.020	0					
30/06/2004	7.224	0			7.122		
30/09/2004	9.164	0			8.194		
31/12/2004	6.804	0			7.984	7.553	-0.749
31/03/2005	9.772	1	1		8.288	8.241	1.531
30/06/2005	7.182	1		1	8.477	8.230	-1.049
30/09/2005	8.896	0			8.039	8.163	0.733
31/12/2005	5.991	0			7.444	7.960	-1.969
31/03/2006	5.961	0			5.976	7.008	-1.046

Graph A.5: EW company: time-series of WACC, N. recalls and moving averages.

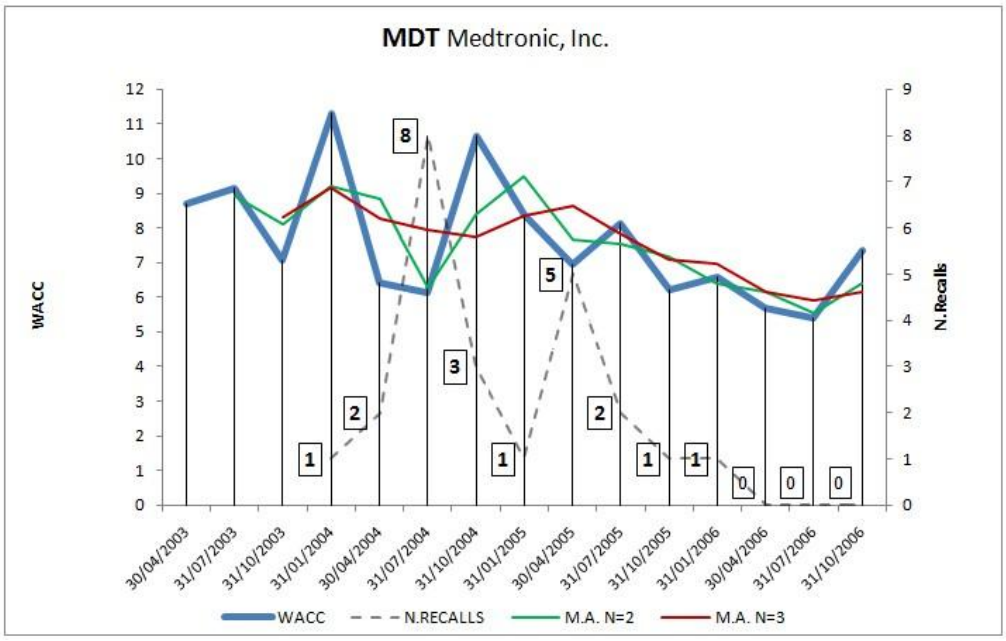
Collected data allow us to observe KG's WACC time-series over 5 years. As shown in Graph A.6, no indication about the N. of recalls can be found in 2003 and 2007 since these two years are outside the time window considered in this research. In 2004 KG had two recalls in the first half of Q3. In the quarter of the publication of the recall the WACC decreased significantly (from 12 to 4) reaching a level quite below the extrapolated one using the moving average with N=6. In Q4 2004 KG's WACC jumped to 10.46 to drop again to 6.7 in Q1 2005. Thus pattern suggests that the effects of the product recalls have been felt in the medium term. When another recall occurred in the second-half of Q3 2006 an increase in WACC was registered in the short term staying however below the red line. However, KG shows pikes and valleys even when no product recalls occurred, fact that suggest that other factors are behind such a volatility in KG financing costs.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2003	12.306						
30/06/2003	13.623				12.964		
30/09/2003	13.076				13.349		
31/12/2003	3.207				8.141		
31/03/2004	8.486	0			5.846		
30/06/2004	12.039	0			10.262	10.456	1.583
30/09/2004	3.955	2	2		7.997	9.064	-5.109
31/12/2004	10.459	0			7.207	8.537	1.922
31/03/2005	6.696	0			8.578	7.474	-0.777
30/06/2005	4.905	0			5.800	7.756	-2.852
30/09/2005	9.253	0			7.079	7.884	1.369
31/12/2005	7.735	0			8.494	7.167	0.568
31/03/2006	12.562	0			10.149	8.602	3.960
30/06/2006	8.459	0			10.511	8.268	0.190
30/09/2006	7.837	1		1	8.148	8.459	-0.622
31/12/2006	8.531	0			8.184	9.063	-0.532
31/03/2007	8.567				8.549	8.949	-0.381
30/06/2007	9.273				8.920	9.205	0.068

Graph A.6: KG company: time-series of WACC, N. recalls and moving averages.

The last company having high CSR Employee Relations score is MDT that, as can be seen in Graph A.7, had 14 recalls in 2004, 8 recalls in 2005 and 1 recall in 2006. Moreover, 6 out of 24 of these recalls were of class I, quite an impressive negative record considering that in total the class I recalls had by all the 52 firms years is equal to 11. It is not expected that a company with such a high number of recalls may count on the insurance from CSR. So many frequent recalls can't be interpreted by stakeholders as just a matter of "bad luck" but are clearly symptomatic of quite serious problems in how this company deal with safety issues.

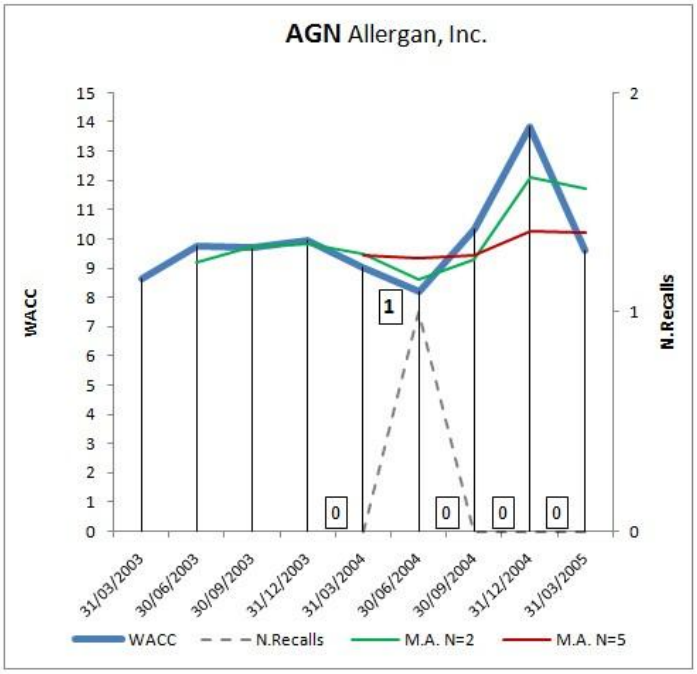


Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=3	Δ = WACC - WACC_M.A. N=3
30/04/2003	8.687						
31/07/2003	9.150				8.919		
31/10/2003	7.079				8.114	8.305	-1.227
31/01/2004	11.296	1		1	9.187	9.175	2.121
30/04/2004	6.411	2	1	1	8.854	8.262	-1.851
31/07/2004	6.117	8	4	4	6.264	7.941	-1.824
31/10/2004	10.640	3	1	2	8.379	7.723	2.917
31/01/2005	8.354	1		1	9.497	8.371	-0.016
30/04/2005	6.953	5	2	3	7.654	8.649	-1.696
31/07/2005	8.109	2	1	1	7.531	7.805	0.304
31/10/2005	6.214	1		1	7.161	7.092	-0.878
31/01/2006	6.590	1	1		6.402	6.971	-0.381
30/04/2006	5.685	0			6.137	6.163	-0.478
31/07/2006	5.413	0			5.549	5.896	-0.483
31/10/2006	7.345	0			6.379	6.148	1.198

Graph A.7: MDT company: time-series of WACC, N. recalls and moving averages.

LOW CSR EMPLOYEE RELATIONS SCORE FIRMS HAVING HAD ONLY ONE RECALL

The graphs hereafter refer to firms having low CSR Employee Relations score (cell B of the matrix) that had only one recall in the considered period.



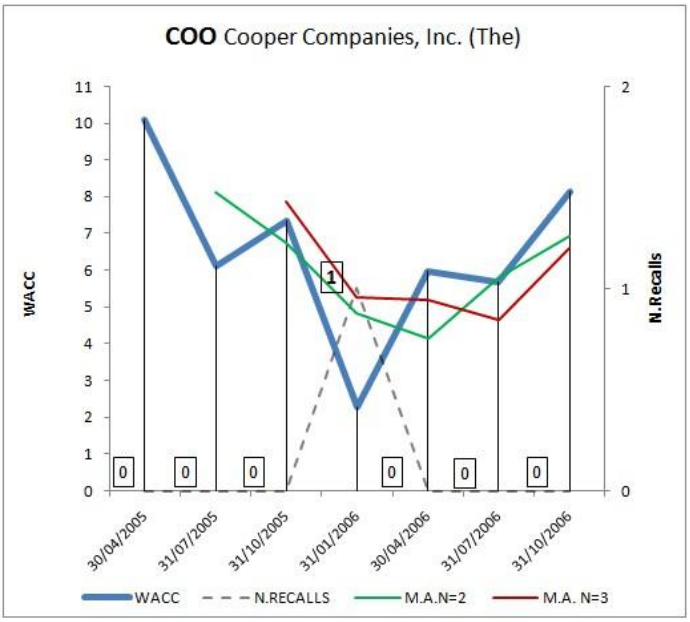
Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=5	Δ = WACC - WACC_M.A. N=5
31/03/2003	8.649						
30/06/2003	9.760				9.204		
30/09/2003	9.710				9.735		
31/12/2003	9.928				9.819		
31/03/2004	9.047	0			9.488	9.419	-0.372
30/06/2004	8.188	1		1	8.618	9.327	-1.138
30/09/2004	10.351	0			9.270	9.445	0.906
31/12/2004	13.840	0			12.096	10.271	3.569
31/03/2005	9.595	0			11.717	10.204	-0.609

Graph A.8: AGN company: time-series of WACC, N. recalls and moving averages.

As shown in Graph A.8, AGN had one product recall in the second-half of Q2 2004. In this research it has been assumed that recalls occurring in the second-half of quarters will show their effects not in the same quarter of the publication but starting with the quarter after. Such assumption is confirmed by AGN's WACC pattern that was having a decreasing pattern in Q1 and Q2 2004 but in Q3 2004 stopped decreasing and jumped from roughly 9 to 10.35 and reached 13.84 in Q4 2004. In the long term the WACC dropped reaching a level higher the one registered in Q1 2004, before the occurrence of the product recall. In both Q3 and Q4 2004, the actual WACC is quite above the values estimated using the moving average with N=5. Thus can be seen as a pattern in line with theory of the insurance from CSR which sustains that low CSR firms cannot count on the buffering effect of CSR and it is more likely that they are seen as guilty for the negative event rather than high CSR firms facing a similar situation.

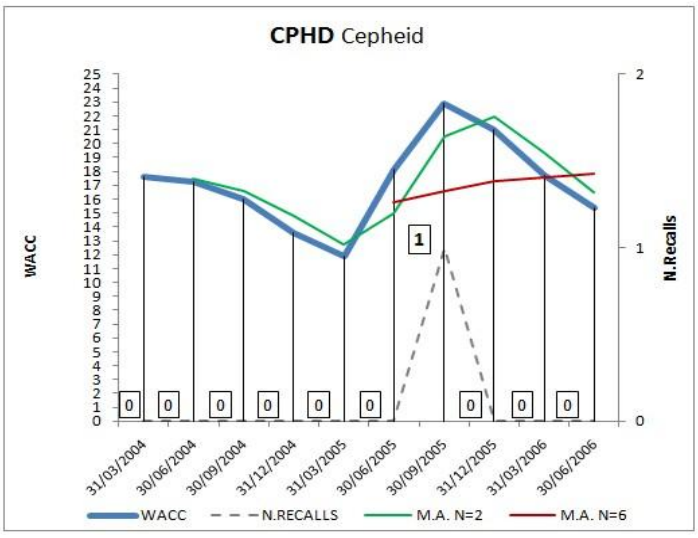
COO's WACC, plotted in Graph A.9, shows quite a high volatility in the seven quarters considered ranging from 10 to 2.3. In the second-half of Q1 2006, COO had one recall and the decreasing trend of its WACC stopped. After the recall, in Q2 2006 there was a sharp increasing in its WACC (from 2.3 to 6), followed by a slight decrease in the medium term and then by an increase from 5.6 to 8 in the long term. In light of the

theory of the insurance from CSR, it can be said that, according to the expectations for low CSR score firms, COO had an increase in its cost of capital after the recall but it is expected that other factors in addition to the recall caused such a high volatility. Before the recall the blue line was always below the red line (moving average with N=3) whereas the actual WACC was always above the red line after the recall.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=3	Δ = WACC - WACC_M.A. N=3
30/04/2005	10.096	0					
31/07/2005	6.119	0			8.107		
31/10/2005	7.353	0			6.736	7.856	-0.503
31/01/2006	2.292	1		1	4.822	5.254	-2.963
30/04/2006	5.976	0			4.134	5.207	0.769
31/07/2006	5.662	0			5.819	4.643	1.019
31/10/2006	8.156	0			6.909	6.598	1.558

Graph A.9: COO company: time-series of WACC, N. recalls and moving averages.



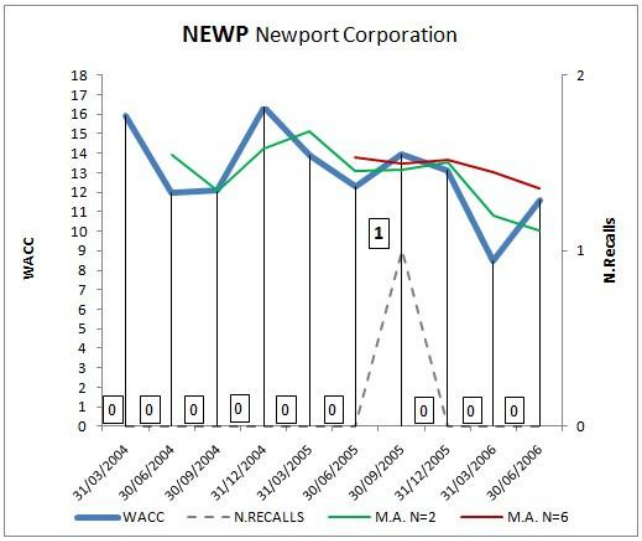
Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2004	17.646	0					
30/06/2004	17.228	0			17.437		
30/09/2004	15.985	0			16.606		
31/12/2004	13.598	0			14.792		
31/03/2005	11.840	0			12.719		
30/06/2005	18.184	0			15.012	15.747	2.438
30/09/2005	22.898	1		1	20.541	16.622	6.276
31/12/2005	21.018	0			21.958	17.254	3.764
31/03/2006	17.716	0			19.367	17.542	0.173
30/06/2006	15.328	0			16.522	17.831	-2.503

Graph A.10: CPHD company: time-series of WACC, N. recalls and moving averages.

Despite what would have been expected for a low CSR firm, CPHD (Graph A.10)shows a decrease in its WACC either in the short, medium and long term after the occurrence of the product recall and the blue line is always below the green one representing the moving average with N=2. Both in the short and

medium term the Δ between the blue and red line is quite high, showing that the pattern had in Q3 and Q4 2005 was not in line with the pattern had in the previous 18 months.

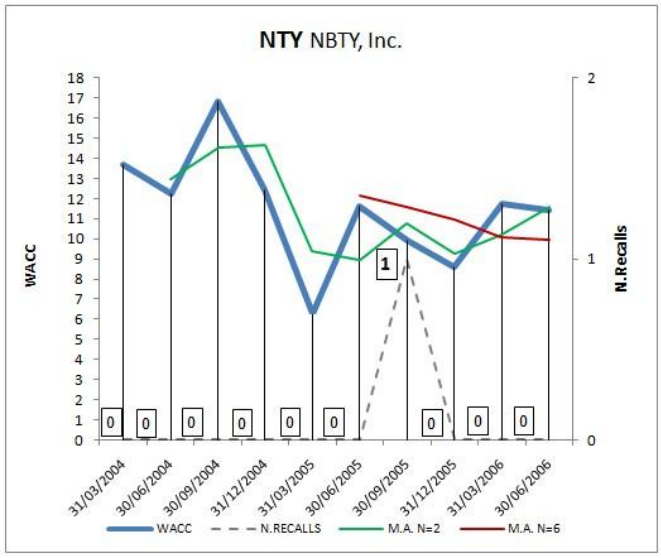
Looking at Graph A.11, it can be seen that NEWP had one recall in the second-half of Q3 2005. The pattern of its WACC after the recall is not in line with the theory of the insurance from CSR for the low CSR firms. Indeed, despite an expected increase, WACC decreased both in Q4 2005 and Q1 2006 to then increase in Q2 2006 reaching however a level lower than the average level before the occurrence of the recall.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2004	15.908	0					
30/06/2004	11.970	0			13.939		
30/09/2004	12.122	0			12.046		
31/12/2004	16.387	0			14.254		
31/03/2005	13.908	0			15.147		
30/06/2005	12.324	0			13.116	13.770	-1.446
30/09/2005	13.939	1		1	13.131	13.442	0.498
31/12/2005	13.135	0			13.537	13.636	-0.501
31/03/2006	8.454	0			10.795	13.024	-4.570
30/06/2006	11.576	0			10.015	12.223	-0.646

Graph A.11: NEWP company: time-series of WACC, N. recalls and moving averages.

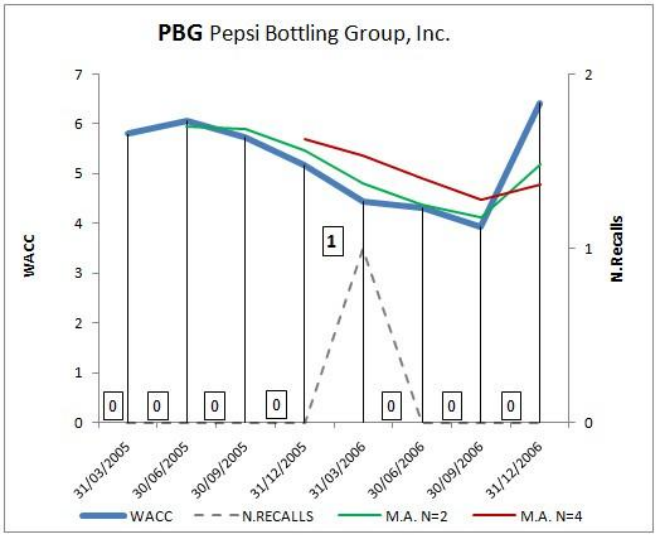
On the other hand, the pattern had by NTY after the recall (Graph A.12) is in line with the theory of the insurance from CSR. Indeed, it is true that there was not an increase in WACC in the short period but it increased both in the medium and long term reaching a level 1.47 higher the one showed by the red line.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2004	13.657	0					
30/06/2004	12.225	0			12.941		
30/09/2004	16.836	0			14.530		
31/12/2004	12.453	0			14.644		
31/03/2005	6.259	0			9.356		
30/06/2005	11.598	0			8.928	12.171	-0.573
30/09/2005	9.939	1		1	10.768	11.552	-1.613
31/12/2005	8.629	0			9.284	10.952	-2.324
31/03/2006	11.730	0			10.179	10.101	1.629
30/06/2006	11.395	0			11.563	9.925	1.470

Graph A.12: NTY company: time-series of WACC, N. recalls and moving averages.

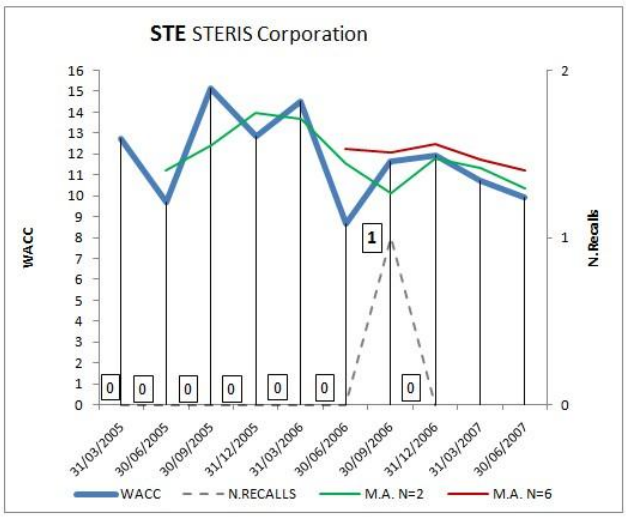
The pattern of the weighted average cost of capital had by PBG (Graph A.13) in the short and medium term after the occurrence of the product recall is not in line with the theory of the insurance from CSR. Indeed, both in Q2 and Q3 2006 PBG's WACC kept decreasing even at a lower rate (as can be seen by the change in slope of the blue line). In the long term, i.e. in Q4 2006, PBG got a jump of its WACC from 3.9 to 6.4. It is hard to say to what degree the product recall affected this increase since it is likely that other factors influenced such outcome in the long term. The moving average with N=4 (red line) shows that in Q2 and Q3 2006 the extrapolated WACC on the basis of past values is around half point higher than the actual WACC whereas the blue line is 1.6 point above the red line in the last examined quarter. Thus confirm that the actual pattern was quite different from the expected one on the basis of what happened in the previous year. The moving average in green, having N=2, has a less smoothing effect than the red one and show a pattern more in line to the blue line. Considering the green line, the actual WACC have always been lower except in the last quarter examined.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2005	5.805	0					
30/06/2005	6.067	0			5.936		
30/09/2005	5.722	0			5.895		
31/12/2005	5.182	0			5.452	5.694	-0.512
31/03/2006	4.444	1		1	4.813	5.354	-0.910
30/06/2006	4.307	0			4.375	4.914	-0.607
30/09/2006	3.938	0			4.122	4.468	-0.530
31/12/2006	6.411	0			5.175	4.775	1.636

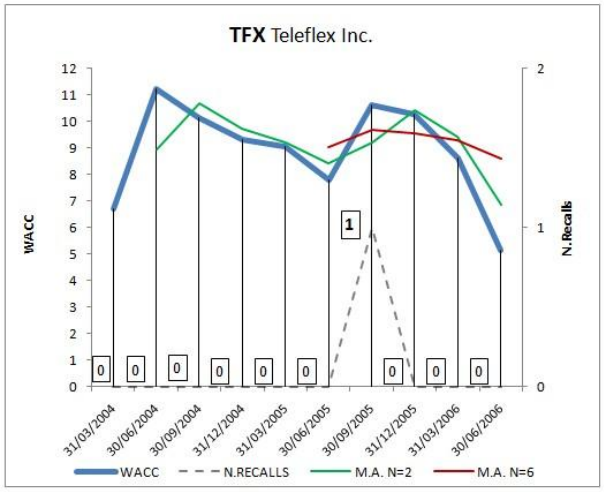
Graph A.13: PBG company: time-series of WACC, N. recalls and moving averages.

The remaining three companies (Graphs A.14, A.15, A.16) show a similar pattern in their WACC after the recall. Indeed, all three show an increase in their WACC in the quarter of the recall, an almost stationary pattern in the quarter after and a decreasing trend in the second quarter after the recall.



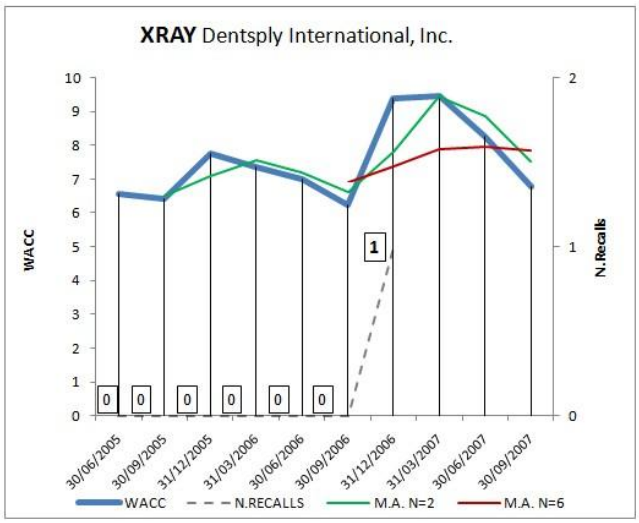
Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2005	12.757	0					
30/06/2005	9.711	0			11.234		
30/09/2005	15.116	0			12.414		
31/12/2005	12.855	0			13.986		
31/03/2006	14.484	0			13.669		
30/06/2006	8.638	0			11.561	12.260	-3.622
30/09/2006	11.668	1		1	10.153	12.079	-0.411
31/12/2006	11.946	0			11.807	12.451	-0.505
31/03/2007	10.740				11.343	11.722	-0.982
30/06/2007	9.932				10.336	11.235	-1.302

Graph A.14: STE company: time-series of WACC, N. recalls and moving averages.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
31/03/2004	6.703	0					
30/06/2004	11.207	0			8.955		
30/09/2004	10.152	0			10.680		
31/12/2004	9.324	0			9.738		
31/03/2005	9.027	0			9.175		
30/06/2005	7.797	0			8.412	9.035	-1.238
30/09/2005	10.609	1		1	9.203	9.686	0.923
31/12/2005	10.258	0			10.434	9.528	0.730
31/03/2006	8.602	0			9.430	9.269	-0.667
30/06/2006	5.143	0			6.873	8.573	-3.430

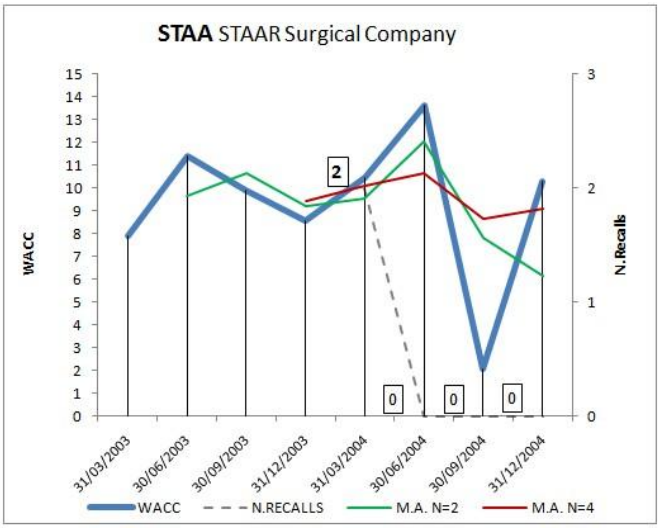
Graph A.15: TFX company: time-series of WACC, N. recalls and moving averages.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
30/06/2005	6.571	0					
30/09/2005	6.413	0			6.492		
31/12/2005	7.759	0			7.086		
31/03/2006	7.370	0			7.565		
30/06/2006	6.994	0			7.182		
30/09/2006	6.231	0			6.612	6.890	-0.659
31/12/2006	9.383	1		1	7.807	7.358	2.025
31/03/2007	9.461				9.422	7.866	1.595
30/06/2007	8.274				8.868	7.952	0.322
30/09/2007	6.762				7.518	7.851	-1.089

Graph A.16: XRAY company: time-series of WACC, N. recalls and moving averages.

STAA is the only low CSR Employee Relations firm having multiple recalls that had them in only one quarter. As already stated, it is not possible to distinguish the weight had by the two recalls on the WACC variation since the dataset in our possess don't allow to do so. Looking at Graph A.17, it can be seen that STAA had 2 recalls in Q1 2004, one in the first half-quarter and the latter in the second half-quarter. Before the occurrence of these two recalls the WACC was having a decreasing trend since two quarters. Facing the negative event the slope changed and WACC increased both in the quarter of the publication in the FDA Enforcement Report and in the one after reaching in both cases levels above both the red and green lines. Hence, the increase in WACC after the recall was higher than the patterns forecasted on the basis of past values. All these considerations are in line with what one would expect for a low CSR firm facing a negative event. The deep valley in Q3 2004 (from 13.6 to 2) is so abnormal that the researcher can't explain it in light of the theory of the insurance from CSR.



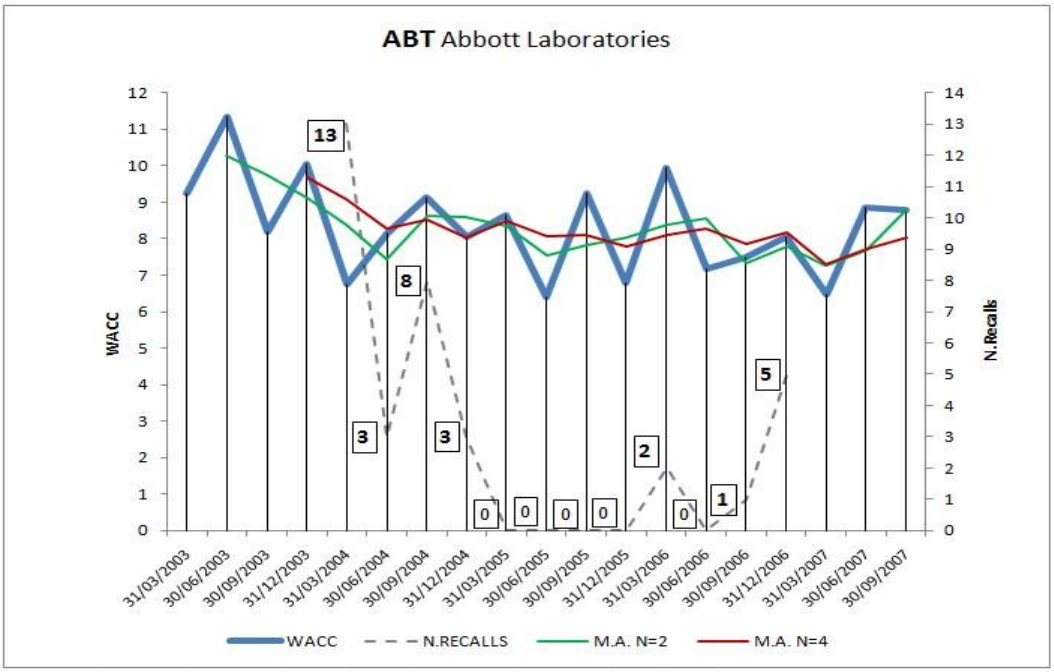
Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2003	7.913						
30/06/2003	11.388				9.650		
30/09/2003	9.886				10.637		
31/12/2003	8.598				9.242	9.446	-0.848
31/03/2004	10.450	2	1	1	9.524	10.081	0.370
30/06/2004	13.613	0			12.032	10.637	2.976
30/09/2004	2.078	0			7.846	8.685	-6.607
31/12/2004	10.296	0			6.187	9.109	1.186

Graph A.17: STAA company: time-series of WACC, N. recalls and moving averages.

LOW CSR EMPLOYEE RELATIONS SCORE FIRMS HAVING HAD MULTIPLE RECALLS

The remaining five graphs illustrate the time-series of the low CSR Employee Relations score firms that had multiple recalls in different quarters over the three years considered.

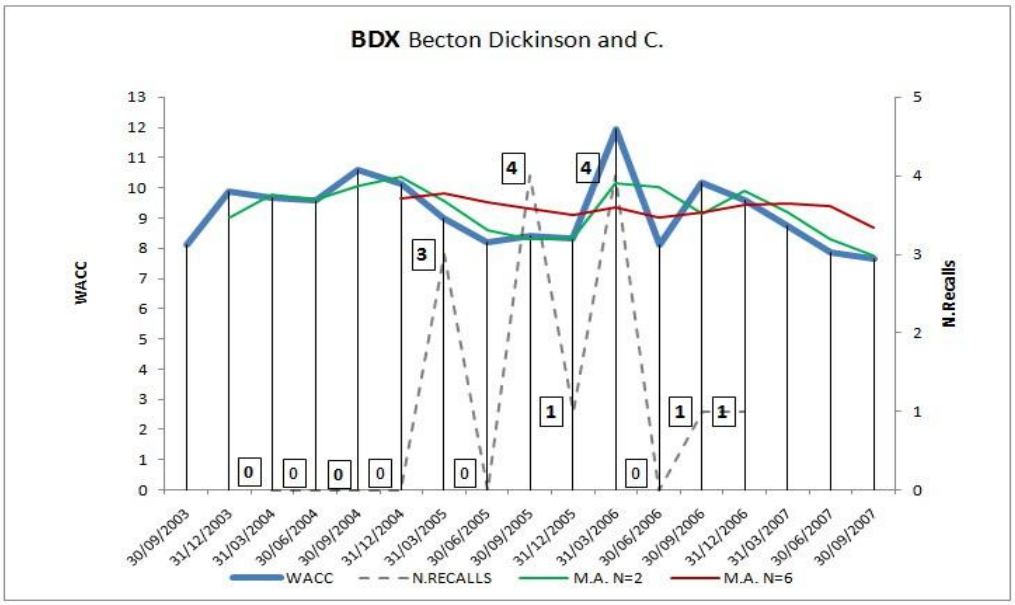
Graph A.18 refers to Abbott, a low CSR Employee Relations score firm that had 27 product recalls in 2004 and 8 recalls in 2006. With a such high number of recalls one would have expected an evident increasing trend in ABT's WACC but at a first glance the pattern seems a series on pikes and valleys. Having a better look, it appears that in 4 out of 7 quarters in which this company had recalls, negative events have been followed by an increase in WACC in the following quarter. Moreover, in almost all quarters with recalls the red line, given by the moving average with N=4, is above the blue line meaning that the actual WACC was higher than the extrapolated one. Thus is in line with expectations for a low CSR score firm.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2003	9.224						
30/06/2003	11.331				10.278		
30/09/2003	8.192				9.761		
31/12/2003	10.030				9.111	9.694	0.336
31/03/2004	6.744	13	9	4	8.387	9.074	-2.330
30/06/2004	8.149	3	3		7.447	8.279	-0.130
30/09/2004	9.120	8	4	4	8.635	8.511	0.609
31/12/2004	8.050	3	3		8.585	8.016	0.034
31/03/2005	8.640	0			8.345	8.490	0.150
30/06/2005	6.414	0			7.527	8.056	-1.642
30/09/2005	9.245	0			7.829	8.087	1.157
31/12/2005	6.801	0			8.023	7.775	-0.974
31/03/2006	9.939	2		2	8.370	8.100	1.840
30/06/2006	7.172	0			8.555	8.289	-1.118
30/09/2006	7.506	1	1		7.339	7.854	-0.349
31/12/2006	8.055	5	2	3	7.780	8.168	-0.113
31/03/2007	6.484				7.269	7.304	-0.820
30/06/2007	8.848				7.666	7.723	1.125
30/09/2007	8.771				8.810	8.039	0.732

Graph A.18: ABT company: time-series of WACC, N. recalls and moving averages.

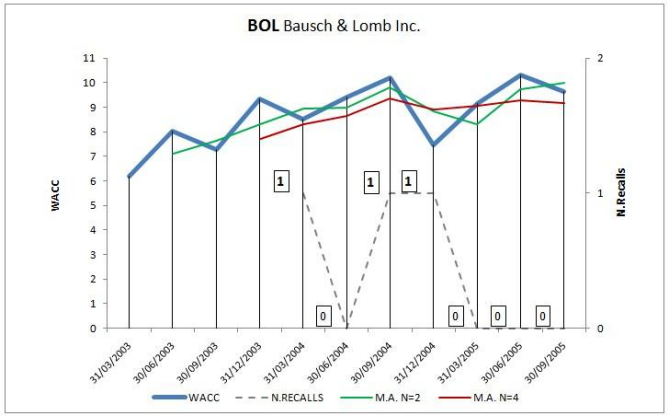
In Graph A.19 we find BDX that had 3 recalls in Q1 2005, 4 recalls in Q3 2005, 1 recall in Q4 2005, 4 recalls in Q1 2006, 1 recall in Q3 2006 and another one in Q4 2006. In total, 8 recalls in 2005 and 6 in 2006. Despite what would have expected, BDX's WACC did not show an increase neither in the quarters with recalls nor in the ones after, except for the 4 recalls in Q1 2006 where the WACC reached the highest pike. Thus trend is not so aligned with the theory of the insurance from CSR since it would have expected an increasing trend after recalls. It seems that investors financing such company are not particularly attentive neither to CSR nor to product recalls.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=6	Δ = WACC - WACC_M.A. N=6
30/09/2003	8.118						
31/12/2003	9.885				9.002		
31/03/2004	9.666	0			9.775		
30/06/2004	9.587	0			9.626		
30/09/2004	10.590	0			10.088		
31/12/2004	10.137	0			10.363	9.664	0.473
31/03/2005	9.010	3		3	9.574	9.812	-0.802
30/06/2005	8.185	0			8.598	9.529	-1.344
30/09/2005	8.395	4	2	2	8.290	9.317	-0.922
31/12/2005	8.325	1		1	8.360	9.107	-0.782
31/03/2006	11.960	4	4		10.142	9.335	2.625
30/06/2006	8.128	0			10.044	9.001	-0.872
30/09/2006	10.184	1		1	9.156	9.196	0.987
31/12/2006	9.601	1		1	9.892	9.432	0.169
31/03/2007	8.746				9.174	9.491	-0.745
30/06/2007	7.861				8.303	9.413	-1.553
30/09/2007	7.646				7.753	8.694	-1.048

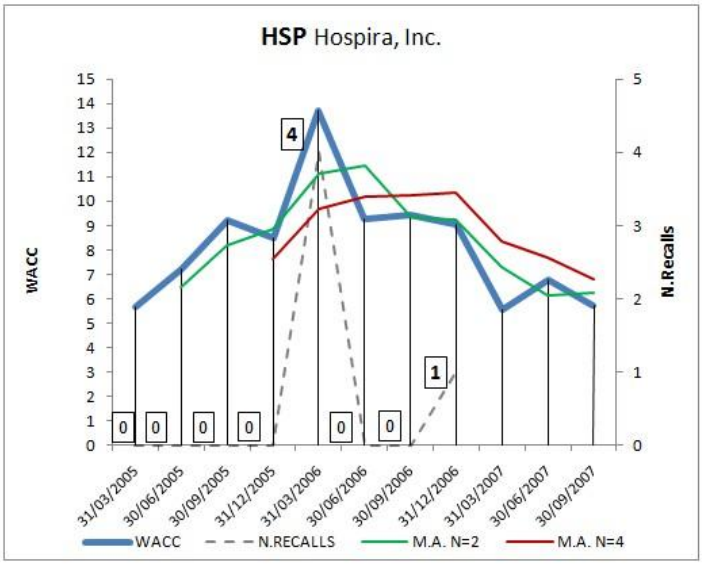
Graph A.19: BDX company: time-series of WACC, N. recalls and moving averages

The last three graphs, illustrating the time-series of BOL, HSP and ZMH (Graphs A.20, A.21 and A.22 respectively) can be read making considerations in line with what has been done till now.



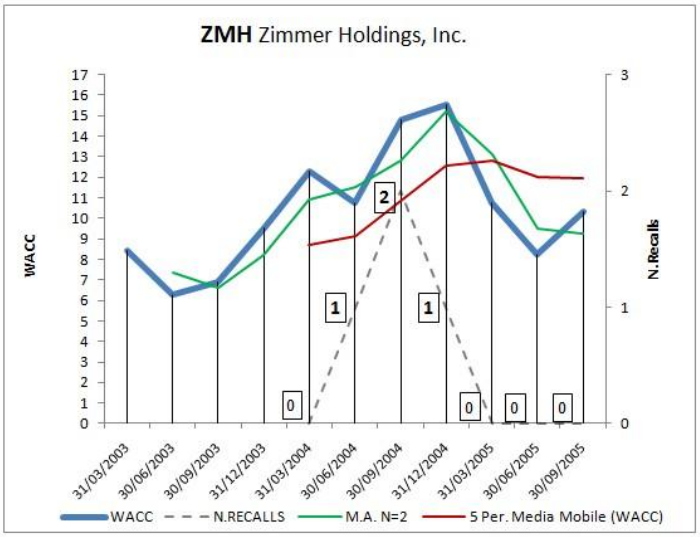
Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2003	6.208						
30/06/2003	8.018				7.113		
30/09/2003	7.276				7.647		
31/12/2003	9.356				8.316	7.714	1.641
31/03/2004	8.527	1	1		8.942	8.294	0.233
30/06/2004	9.417	0			8.972	8.644	0.773
30/09/2004	10.207	1	1		9.812	9.377	0.830
31/12/2004	7.463	1		1	8.835	8.904	-1.441
31/03/2005	9.171	0			8.317	9.064	0.106
30/06/2005	10.331	0			9.751	9.293	1.038
30/09/2005	9.658	0			9.994	9.156	0.502

Graph A.20: BOL company: time-series of WACC, N. recalls and moving averages.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=4	Δ = WACC - WACC_M.A. N=4
31/03/2005	5.663	0					
30/06/2005	7.234	0			6.448		
30/09/2005	9.192	0			8.213		
31/12/2005	8.517	0			8.854	7.651	0.865
31/03/2006	13.707	4	2	2	11.112	9.662	4.045
30/06/2006	9.251	0			11.479	10.167	-0.916
30/09/2006	9.456	0			9.353	10.233	-0.777
31/12/2006	9.067	1	1		9.261	10.370	-1.303
31/03/2007	5.557				7.312	8.333	-2.776
30/06/2007	6.754				6.155	7.708	-0.954
30/09/2007	5.733				6.243	6.778	-1.045

Graph A.21: HSP company: time-series of WACC, N. recalls and moving averages.



Final day of the Q	WACC	N.Recalls	1st half-Q	2nd half-Q	Moving Average N=2	Moving Average N=5	Δ = WACC - WACC_M.A. N=5
31/03/2003	8.441						
30/06/2003	6.297				7.369		
30/09/2003	6.899				6.598		
31/12/2003	9.553				8.226		
31/03/2004	12.269	0			10.911	8.692	3.577
30/06/2004	10.743	1	1		11.506	9.152	1.591
30/09/2004	14.814	2	1	1	12.779	10.856	3.958
31/12/2004	15.542	1	1		15.178	12.584	2.957
31/03/2005	10.733	0			13.137	12.820	-2.088
30/06/2005	8.217	0			9.475	12.010	-3.793
30/09/2005	10.340	0			9.278	11.929	-1.589

Graph A.22: ZMH company: time-series of WACC, N. recalls and moving averages.

CONSIDERATIONS EMERGED FROM THE ANALYSIS OF WACC AND N. RECALLS TIME-SERIES

In this Section are discussed the considerations emerged from the in-depth analysis of the graphs plotting WACC and N. recalls time-series of high/low CSR Employee Relations score firms.

The descriptive approach is expected to allow the identification of patterns and potential benefits of the insurance from CSR besides the ones investigated in this research.

Focusing on the three high (DNA, HAE, K) and nine low (AGN, COO, CPHD, NEWP, NTY, PBG, STE, TFX, XRAY) CSR Employee Relations score companies that had only one product recall over the period considered, the following general patterns come to light.

First, two out of three of the high CSR Employee Relations score firms (DNA, HAE), corresponding to the 67%, showed after the recall a WACC pattern aligned with the theory of the insurance from CSR. Indeed, their WACC pattern is consistent with the granting by stakeholders and investors in the capital markets of the benefit of the doubt and hence less harsh sanctions. Concerning low CSR firms, five out of nine (AGN, COO, NTY, STE, XRAY), corresponding to the 56%, showed after the recalls a pattern in their WACC aligned with the theory of the insurance from CSR. They indeed seem to have felt harshly the negative effects of the recall on their financing cost.

Second, within the companies that showed patterns in line with the theory of the insurance from CSR, all the high CSR Employee Relations score firms had in the long period a value of their WACC lower than the value pre-negative event[14]. Regarding low Employee Relations score firms, it emerges that 3 out of 5 (60%) had in the long term a WACC higher the value pre-negative event (AGN, COO, NTY). Hence, it emerges that in the long term high CSR Employee Relations score firms showed a much more convenient situation then low CSR firms. Indeed, the first had in the long term a WACC lower than the value pre-negative event whereas 60% of the low CSR firms had a WACC higher than the value pre-recall.

Finally, the 4 low CSR Employee Relations score firms that showed patterns of their WACC not aligned with the theory of the insurance from CSR (CPHD, NEWP, PBG, TFX) had a behavior similar to high CSR firms. There might be two different explanations for such a pattern: 1) these companies score high in one or more

[14] For recalls happened in the first half-quarters, the pre-negative event value is the one had in the quarter before the occurrence of the recalls (since it has been assumed that the effects of such negative events will be visible already at the end of the quarter in which the recall was published). For recalls happened in the second half-quarters, the pre-negative event value is the one had in the quarter of publication of the recall (since it has been assumed that in such cases the effects of the recall will be visible starting from the quarter after).

of the other qualitative areas ranked by KLD ; 2) the pattern is not linked to CSR but to other managerial/financial aspects not taken into consideration in this study.

Looking at Appendix 2 reporting the "CSR overall score matrix" for the 52 firms years considered in this thesis and the details of the KLD ratings, it has been verified that neither NEWP nor TFX scored high in none of the seven qualitative issues evaluated by KLD. Hence, it is reasonable to conclude that for these two companies this shown pattern is not due to CSR but likely to other factors.

Conversely, CPHD resulted scoring high in both "Corporate governance" and "Diversity" whereas PBG scored particularly high in the dimension "Diversity" and in its category "Gay and Lesbians Policies" as the reader could have guessed looking at the recent "Pepsi MAX" commercials broadcasted in TV. Such considerations are the proof that the patterns showed by CPHD and PBG' WACC is not misaligned at all with the theory of the insurance from CSR. Indeed, these companies are low in relation to the Employee Relations dimension but high CSR firms in relation to other specific dimensions not considered singularly in this research.

LIST OF APPENDICES IN THE CD-ROM

Appendix 1: 376 firms years: KLD ratings and distribution in the "CSR overall score matrix".

Appendix 2 : 52 firms years: KLD ratings and distribution in the "CSR overall score matrix".

Appendix 3: Details of the recalls.

Appendix 4: 376 firms years: financial variables and "CSR overall score matrix"

Appendix 5: 52 firms years: financial variables and "CSR overall score matrix".

Appendix 6: 376 and 52 firms years: means of the financial variables per each cell of the "CSR overall score matrix".

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Appendix 16: Graphs plotting WACC and N. recalls time-series.

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Appendix 18: SIC codes.
(Source: http://www.ehso.com/siccodes.php)

Appendix 19: Description of KLD qualitative issues areas.
(Source: http://cdnete.lib.ncku.edu.tw/93cdnet/english/lib/Getting_Started_With_KLD_STATS.pdf)

Appendix 20: SPSS outputs related to Section 4.1

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Appendix 23: SPSS outputs related to Hypothesis 3

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