

# CSR reporting as a signal of good management

## Do investors really care?

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### **Abstract:**

The current thesis investigates the role of CSR reporting as an insurance mechanism for the value of the firm in the aftermath of a negative reputational event. The underlying assumption for this mechanism is that, through CSR reporting, the company can signal the quality of its management to investors and therefore build a positive reputation. In order to capture the information value of CSR disclosures for investors, a grading framework for CSR reporting is constructed. Through the use of CSR performance indicators and quality criteria, the grading framework aims at producing CSR scores representative of the underlying CSR performance of the company. The application of the grading framework to a sample of European listed banks affected by negative reputational events allows for an investigation of the insurance effect of CSR through an event study. The findings, aligning with part of prior literature, provide no evidence supporting the insurance role of CSR both on an overall CSR basis and on the different dimensions of CSR (economic, environmental and social).

**Keywords:** Corporate Social Responsibility, CSR disclosure, insurance, grading framework, event study.

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# 1. INTRODUCTION

*“There is one and only one social responsibility of business - to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game.” Milton Friedman, 1970*

The famous quote from Milton Friedman sets the scene for an evaluation of corporate social responsibility (henceforth CSR) through the shareholder value lens. If shareholder value is to be considered the ultimate objective for the firm, any activity that involves consumption of firm resources has to be counterbalanced by a greater gain for the shareholders. CSR disclosures are both costly and voluntary and therefore represent an activity that needs to be justified in the eyes of the shareholders.

Historically, the debate on CSR and shareholder value has been focusing on whether CSR creates or destroys value, with extensive theories and evidence supporting both notions. On the other hand, a quite recent stream of literature has slightly shifted this paradigm and reformulated it into a value preservation perspective on CSR. In specific, it has been argued that CSR could be compared to a self-insuring mechanism that would preserve, by boosting the reputation of the firm, the value of a company in the aftermath of a negative reputational event (Godfrey et al., 2009). Through CSR, companies can distinguish themselves for their ethical behaviour and therefore provide investors with positive information on the overall quality of management and on the likelihood of managers engaging in undesirable activities for the shareholders (e.g. earnings management). According to this insurance theory of CSR, the value of this type of reasoning would then emerge upon occurrence of reputational scandals, in the sense of a smoother stock market reaction, due to the fact that the negative event will be perceived by the market as a result of bad luck rather than the result of bad management (Minor and Morgan, 2011).

## 1.1 AIM OF THE THESIS

The interesting and relatively unexplored perspective on CSR as a value preserving mechanism described above was chosen as the research topic of this thesis. In specific, the contribution of the present thesis to this relatively recent body of research lies within the decision of focusing on the banking sector.<sup>1</sup> The reasoning behind this choice was twofold. First, it was deemed of interest to explore the potential role of CSR as an insurance mechanism outside the typical environmentally intensive setting of this stream of research. Second, the banking sector was thought to be a potential

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<sup>1</sup> To the best of the authors' knowledge, no previous study applied the notion of the insurance effect of CSR to the financial industry.

setting for the hypothesised CSR insurance mechanism to be particularly relevant, due to the focal role of reputation within this sector (Branco and Rodrigues, 2006).

## 1.2 BACKGROUND

The insurance theory of CSR can be summarised as the interaction between an independent variable – CSR performance – and a dependent variable – the shareholder value. In order to analyse this interaction, one needs to reflect upon two underlying assumptions that affect the variables and their definition.

*Assumption 1: CSR performance works as a signal of the good management of the firm for the investors.*

*Assumption 2: The investor's perception of the quality of management (which can be defined as positive reputation) affects his reaction in the aftermath of a negative reputational event.*

In order for assumption one to hold, signalling theory argues that CSR performance would need to fulfil two characteristics: hard to mimic and verifiable. CSR performance, on the other hand, has been object of intense discussion due to the measurability of its substance. In addition, CSR performance cannot be directly observed by investors. With these premises the main assumption of the insurance theory of CSR would be undermined. Though, formulating the issue further, two ways for an investor to capture CSR performance can be identified. The first solution is represented by third parties' CSR ratings. These CSR performance ratings resemble information provided by other information intermediaries, such as sell-side financial analysts, and can affect the investors' perception of future value and risk (Cho et al., 2013). However, CSR ratings represent a rather new and not fully reliable measure (Schäfer et al., 2006) and would not fulfil the auditability requirement to work as an effective signal, due to criteria varying substantially across rating agencies and to the limited transparency they provide (Dhaliwal et al., 2011). A second way for the investor to assess CSR performance, and therefore infer information on the quality of the management, is represented by CSR disclosure. Recollecting the characteristics for a signal to be effective, this second possibility applies only if CSR disclosures provide the investor with auditable and difficult to mimic information about the underlying CSR performance. This would ensure the mitigation of a potential adverse selection arising from the effort of poor CSR companies to “green-wash” their reputation through the creation of a false image of a socially responsible corporation (Laufer, 2003). Stemming from the limitations of the first solution presented, the careful assessment of CSR disclosure by investors seem to be the only notion that could ensure the applicability of a link between CSR performance and good management.

Assumption two, on the other hand, implies that the dependent variable of the relationship, i.e. shareholder value, is to be analysed upon occurrence of negative reputational events. As argued by Minor and Morgan (2011), CSR expenditures would be considered as a mere depletion of shareholder value during normal times if one failed to acknowledge their role in protecting shareholder value during abnormal times. The reasoning behind assumption two is that in the aftermath of a negative reputational event investors' perceptions of the reputation of the firm will determine whether they will attribute the causes of the event to bad luck rather than bad management. That will in turn determine the magnitude of the negative reaction to the event.

### 1.3 STUDY SETUP

In order to pursue the aim of this thesis described at the beginning of this section a three-step approach was applied, that would take into account the considerations expressed above. First, the sample was selected among European banks affected by negative reputational events in the period 2007-2013. Second, the independent variable of the study (CSR) was determined through the development of a grading framework for CSR disclosures. Finally, an event study methodology was applied to derive the dependent variable (shareholder value) and test it against CSR in a regression analysis.

A methodological approach for assessing the quality of CSR disclosure was proposed in order to construct a measure of CSR that would fulfil the criteria of a signalling mechanism. A grading framework was constructed on the basis of hard CSR performance indicators analysed through quality criteria (auditability, business model relevance and comparability). This resulted in CSR scores that would effectively separate good CSR performance from a green-washing type of CSR, that would imply poor underlying CSR performance. This framework is believed to constitute the main contribution of the present thesis. The developed framework was then applied to the companies of the sample in order to determine a CSR score for each of them. The third step of the study was the use of an event study in order to determine a measurement of shareholder value that would allow to capture the reaction of investors to an adverse reputational event. For this purpose the calculation of cumulative abnormal returns (henceforth CAR) for the events included in the sample was performed. The validity of the insurance notion of CSR could then be tested performing a regression analysis in order to verify whether companies with high quality CSR would experience a smoother price reaction as compared to companies with poor quality CSR.

## 1.4 OUTLINE OF THE THESIS

The present thesis is structured as follows. Section 2 lays the theoretical background for an analysis of CSR from a shareholder value perspective. Section 3 focuses the discussion on the specific matter of the insurance theory of CSR, with a presentation of previous empirics and a hypothesis formulation for the present thesis. Section 4 constitutes a theoretical background for the development of a grading framework of CSR disclosure. The methodologies for the construction of the grading framework and for the event study are explained in section 5. Section 6 presents the results and analysis of the thesis and finally section 7 provides a discussion of the findings and a conclusion.

## 2. CSR AND VALUE CREATION

### 2.1 CSR REPORTING AND EFFECTS ON VALUATION

CSR disclosures fall within the realm of voluntary reporting. That means that, unlike financial reporting, CSR disclosures are currently subjected to very limited regulation (Dhaliwal et al., 2011). Despite the existence of several globally accepted frameworks (GRI, Stakeholder Engagement Standard: AA1000 SES) functioning as reporting guidelines, the choice of whether and how much information to disclose lies within the discretion of companies. For this reason, the usefulness of these reports is affected by issues of comparability and potential credibility arising from the opportunistic behaviour of firms' management (Dhaliwal et al., 2011). This, according to Dhaliwal et al. (2011), makes the task of identifying the value of CSR reporting a question of empirical nature, which becomes increasingly interesting, since the production and distribution of information is significantly costly for companies.

Since the purpose of this thesis is to provide further evidence on the effect of CSR disclosure on the stock market, the theoretical framework will follow the basic guidelines of corporate valuation (Koller et al., 2011). The underlying assumption is that, in order to reveal whether there is indeed value creation stemming from CSR reporting, there is the need to discover the effect on the two main levers of value, namely free cash flow (through profitability) and cost of capital.

$$Value = \frac{FCF_{t=1}}{WACC - g}$$

where  $FCF$  is the free cash flow for period  $t$ ,  $WACC$  is the weighted average cost of capital and  $g$  is growth.

In order to achieve the abovementioned goal, the underlying benefits stemming from CSR reporting need to be analysed. As with most voluntary disclosures, the main focus of prior literature has been on its ability to reduce information asymmetry (Richardson and Welker, 2001; Chava, 2010; Dhaliwal, et al. 2011; El Ghoul et al., 2011; Reverte, 2012).

### 2.2 AGENCY THEORY AND THE ROLE OF VOLUNTARY DISCLOSURES AS A SIGNALLING MECHANISM

The typical theoretical framing for voluntary disclosure lies within two major theories: agency theory and signalling theory. As supported by Morris (1987), signalling theory and agency theory can be considered consistent theories, due to the axioms they lie on. Especially important for the present discussion on voluntary disclosure is the common assumption on information asymmetry. More specifically, as delineated by Morris (1987), one of the assumptions in agency theory, namely



the one dealing with the costs of monitoring, implies the idea of managers of the firm (the agent) being in possession of superior information than shareholders (the principal), which is also a core concept within signalling theory.

One famous example of information asymmetry is the “market for lemons” discussion by Akerlof (1970), where it is highlighted how a situation of asymmetric information can negatively affect the functioning of a market, potentially until its collapse. Although several applications of the concept have been explored, from the labour market to the insurance market, what is really of interest for the purpose of this thesis is the principal-agent relationship. Agency theory deals with the incentive issue arising from the separation of ownership and control (Jensen and Meckling, 1976). Fama and Jensen (1983) focus specifically on the agency problem arising between managers and shareholders. Agency costs arising from this relationship are of two types: a) a decline in firm’s value due to the belief that management will not act in the interest of shareholders; b) costs arising from monitoring and bonding managers of the firm. Disclosure is one example of monitoring mechanism that the shareholders can use in order to verify whether managers’ behaviour is aligned with their interest. It is important here to note that there is a trade-off between the two types of agency costs. In fact, monitoring and bonding systems can lower the decline in value due to misalignment but, at the same time, they imply additional costs. The above discussion implies a departure from the notion of strong form market efficiency, which would, according to Fama (1980), eliminate agency costs.

One potential solution to information asymmetry and the adverse selection, as explained in the “market for lemons” discussion, is proposed by Spence (1973) through his signalling theory. According to Spence (1973), the better informed party has the possibility of reducing information asymmetry through the production of signals. In order for signals to be effective, they need to be a) hard to replicate and b) possible to verify. The first characteristic comes from the assumption that signalling costs are inversely related to the quality of the underlying product, that means it should prove difficult for low quality products to “fake” the signal. The second characteristic implies that, once the transaction has been made, the less informed party has the opportunity to verify the actual validity of the signal. Disclosure can therefore be used by companies to signal the quality of their management, in a way that will allow investors to better value them and distinguish the well managed ones (and consequently good investments) from the poorly managed ones (Toms, 2002).

## 2.3 THE ROLE OF CSR REPORTING IN CREATING VALUE – FOCUSING ON THE LEVERS OF VALUATION

### 2.3.1 RELATIONSHIP WITH COST OF EQUITY – REDUCING THE DENOMINATOR?

According to previous research, the value of CSR activities, as disclosed through the firms' CSR reporting, lies within its ability to decrease information asymmetry (Richardson and Welker, 2001; Chava, 2010; Dhaliwal et al., 2011; El Ghouli et al., 2011; Reverte, 2012). This line of research supports that "responsibility reporting is a part of a firm's communication tools in order to decrease information asymmetries between managers and investors" and that social reporting becomes therefore important as a lever for the enhancement of the firm's market value (Reverte, 2012, p. 267).

Authors in this stream of literature, argue that the benefits of CSR reporting resemble those of financial disclosure (Dhaliwal et al., 2011). According to previous literature on financial disclosure, superior financial disclosures lead to the following: a) larger investors base; b) lower covariance of cash flows with other firms' cash flows; c) reduced information asymmetry, which leads to decreased illiquidity problems and therefore allows lower bid-ask spreads and transaction costs. These effects would, in turn, result in a reduction of cost of equity (Merton, 1987; Hughes et al., 2007; Lambert et al., 2007; Verrecchia, 2001; Amihud and Mendelson, 1986).

Although this line of reasoning would provide a strong proof of the value relevance of CSR reporting, the results from certain studies seem to contradict this idea (Richardson and Welker, 2001), therefore rendering the aforementioned relationship inconclusive.

### 2.3.2 RELATIONSHIP WITH PROFITABILITY – INCREASING THE NUMERATOR?

Other authors propose theoretical formulations on the link between CSR and competitive advantage, with a reflection on financial performance as expressed through proxies such as ROA, ROE and ROIC. Although several studies have focused on the causal relationship between CSR and financial performance<sup>2</sup>, the focus of this section will be limited to theories individuating CSR as the independent variable. These include the "trade-off" theory and the "social impact" theory (Preston and O'Bannon, 1997).

The first theory argues for a "**trade-off**" between social performance and profitability. Proponents of this view move from the early contributions of Levitt (1958) and Friedman (1962), who argue that CSR is a mere cost undermining efficiency and therefore depleting shareholders' wealth. This

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<sup>2</sup> The study by Preston and O'Bannon (1997) offers a clear summary of all possible relationships between CSR and financial performance.

line of thinking implies that a firm engaging in social responsibility would be put in a relative competitive disadvantage with respect to its non-responsible competitors (Aupperle et al., 1985).

On the other hand, “**social impact**” theory states that there is a positive relationship between social performance and profitability. This view draws from the notion that companies use CSR as a social legitimatization mechanism of their activities (Patten, 1991). Under this premise, the value of CSR lies within its function as a form of social contract that the company establishes with its stakeholders, which sets the boundaries for the firm’s activities based on explicit and implicit societal norms (Hooghiemstra, 2000). In this case, CSR can assist companies in building their reputation by projecting an image of a “good corporate citizen” (Patten, 1991). Supporters of this view include Freeman (1984) (considered the founding father of the so-called “stakeholder theory”) and Simon et al. (1972), who argue for the existence of an ethical investor. The idea of ethical investors does not necessarily have an altruistic motivation but can also be driven by economic reasons. Those could be: reduction of stakeholder contract costs and signalling of good management for investors.

For what concerns **stakeholder contract costs**, Jones (1995) offers a really exhaustive and meticulous explanation on how ethical solutions could provide firms with a competitive advantage. The paper explains how ethical solutions to “commitment problems”<sup>3</sup> are the most efficient mechanisms in comparison to other systems used to reduce opportunistic behaviours (monitoring, incentive systems, and so forth) and can therefore create a competitive advantage through reducing agency costs.

**Good management** theory, initially formulated by Moskowitz (1972), argues that high social performance means attention to the key stakeholders of the firm. That means, in turn, that high social performance is an indicator of superior management skills and therefore lower explicit costs, i.e. cash outflows. Examples of this could include: a) higher employees’ satisfaction and therefore productivity, b) a better workforce in the long term due to investments in the education system, c) reduced regulatory costs and d) better customers relations that lead to increased sales.<sup>4</sup>

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<sup>3</sup> The author’s reasoning draws from the basic idea that efficient contracting is a function of what he defines as “costs of solving commitment problems”, namely agency costs, transaction costs and team production problems (Jones, 1995).

<sup>4</sup> For good management theory to hold, CSR needs to be defined in terms of management of relationships with critical stakeholders management and not only in terms of discretionary activities, such as philanthropic donations (Waddock and Graves, 1997).

### 3. CSR AS AN INSURANCE MECHANISM

#### 3.1 THE ROLE OF CSR REPORTING IN PRESERVING VALUE – THE VALUE CONUNDRUM

The results presented in the previous section are inconclusive as to the value relevance of CSR reporting. Although it is hypothesized that CSR reporting can assist in reducing agency costs for the firm through a decrease in information asymmetry between investors and managers of the firm, the results are highly contradicting from a shareholder value creation perspective.

One possible explanation for this discrepancy could be that the benefit of the decreased information asymmetry is counterbalanced by the increased costs for engaging in CSR activities and producing CSR reports in order to communicate them. Under this perspective, CSR is a mechanism that can act both towards value creation and value destruction. An alternative view on this contradiction could be that CSR reporting acts more as a value protective mechanism rather than a value creating one. The basis for this argumentation is that CSR reporting can function as an insurance policy for the firm's value through shielding its reputation in the aftermath of a negative reputational event. Therefore, by taking under consideration this notion, it is clear that CSR reporting can only be assessed during the occurrence of these adverse reputational events, since during normal periods the increased cost of producing CSR reports might seemingly destroy value.

Expanding on this argument, Minor and Morgan (2011) argue that expenditures on CSR can be thought of as insurance premiums. The authors stress that, in order to assess the value of CSR, one should differentiate normal times from abnormal times. During normal times CSR reflects a pure cost and consequently seems to destroy value. However, when a negative event does occur, the firm's CSR can act as a protective mechanism by preserving the value of its brand (Minor and Morgan, 2011). However, the idiosyncratic nature of reputation as an object of insurance (Rejda, 1995) creates complexity when assessing the value of the insurance effect of CSR disclosures for the company. This issue will be further explored in section 3.1.2.

##### *3.1.1 THE INSURANCE EFFECT OF CSR – CONNECTION WITH "SIGNALLING THEORY"*

As already illustrated, the benefit of CSR reporting as an insurance policy that protects the firm's value against adverse reputational events cannot be explained under the traditional approach of value creation. However, the theoretical background supporting this use of CSR disclosures still lies within the notion of reducing agency costs through decreased information asymmetry. That is achieved through the function of CSR reporting as a signalling mechanism of good management.

This claim is supported by researchers who point out that CSR activities have a positive relation with the firm's reputation (Grow et al., 2005; Verschoor, 2005). Toms (2002) argues, in his study on the linkage between environmental disclosure and environmental reputation, that environmental reporting is used to provide a signal about the quality of environmental management. Expanding on this argument, companies could use CSR reporting as a signalling mechanism of their ethical behaviour in order to enhance their reputation (Kim et al., 2012). This reputation, according to Kim et al. (2012), would increase the transparency of the firm and accordingly would constitute a linkage between CSR reporting and increased reliability of financial reporting.

Prior research suggests that the value of CSR reporting is encompassed in the investors' expectations that companies with high CSR performance, as reflected in CSR disclosures, will not engage in accounting manipulation involving accruals' or real earnings' management (Cho et al., 2013). Therefore, the value of CSR reporting can be seen through the creation of a "positive moral capital" that provides a "reservoir" of positive reputational attributions for the firm (Godfrey et al., 2009). This "moral capital" has the effect of providing partial self insurance against reputation risk (Minor and Morgan, 2011).

### *3.1.2 THE DIFFICULTY OF MEASURING THE INSURANCE EFFECT*

If CSR can actually be considered an insurance mechanism is again a question of empirical research, due to the unique nature of the insurance. This nature stems from the uncertainty surrounding the value of the intangible asset to be insured, in this case the reputation of the firm, that makes the optimal level of insurance difficult to determine. Therefore this can lead to over- or under-coverage through involvement with CSR (Godfrey et al., 2009). The main reason for this uncertainty is that intangible assets such as reputation do not meet certain criteria characterizing a traditional insurance market (Godfrey et al., 2009).<sup>5</sup> The difficulty to fully meet those criteria makes the identification of an optimal level of investing in CSR as insurance particularly difficult.

Given the nature of the assets been insured through CSR, the value of CSR reporting as an insurance mechanism cannot be measured directly. Moreover, given the premiums paid by the firm in order to insure its reputation through CSR engagement and CSR reporting, it is highly improbable that CSR will pay-off in a current revenue or profit sense as it is the case with traditional insurance especially since CSR engagement and reporting are a particularly costly endeavour (Minor and Morgan, 2011). Therefore, according to Linthicum et al. (2010), the only

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<sup>5</sup> These criteria, according to Rejda (1992), include: a) the existence of a large number of homogeneous exposure units, b) that probable losses must be unintentional and c) that the loss must be determinable and measurable.

way to fully capture the value of CSR reporting is through an event study, since during a negative event the market will re-assess factors related to firm reputation, including CSR disclosures and the value of CSR as an insurance mechanism can be captured in full.

## 3.2 EMPIRICS

### 3.2.1 EMPIRICAL EVIDENCE ON THE INSURANCE EFFECT OF CSR

As already mentioned, researchers have only recently started investigating the insurance effect of CSR that can shield the value of the firm against negative reputational events. However, the results from this research have not rendered conclusive results. In this section a discussion on prior literature on the insurance effect of CSR is conducted in order to point out the main findings and to uncover the main justifications for any noticeable inconsistencies. Although part of research in the specific area has provided evidence supporting the existence of an insurance effect for CSR activities, there are several limitations to be considered. The most important of these concerns is the definition of CSR, since it appears that not all CSR activities and ways of disclosing them render the same results. Prior research shows that certain specific aspects of CSR seem to support the hypothesis of an insurance role of CSR, while, when CSR is considered as a whole, results are inconclusive. Moreover, the selection of industry also seems to play a role for the identification of an insurance effect of CSR. This insurance mechanism seems more evident in industries that are deemed environmentally intensive and that are subjected to a high stakeholder visibility. Finally, concerns also arise with regards to the choice of the methodological approach selected by most researchers (Mc Williams and Siegel, 1997). This last type of limitations will be discussed further in the section on the event study methodology, since they are considered relevant for the methodological approach in the present thesis. In this section the main findings that prior literature has to offer in relation to the function of CSR as an insurance mechanism will be presented.

Blacconiere and Patten (1994) were one of the first studies that found evidence of the risk mitigating abilities of CSR reporting in the face of adverse reputational events. Using a study on 47 chemical firms, the authors investigated the intra-industry reaction in the aftermath of an industry-wide negative effect, namely the Union Carbide's chemical leak in Bhopal, India in December 1984. The findings highlight that companies with superior environmental reporting experienced a lower negative impact from the event, thus supporting the insurance effect of CSR. Furthermore, the research found evidence of an insurance coverage of CSR for the potential intra-industry spill-over's stemming from negative events.

Godfrey et al. (2009), using an event study based on a sample of negative regulatory and legal events for 151 companies, tried to investigate the role of CSR, in the form of corporate philanthropism, as a provider of insurance value for shareholders. The findings of the research support the notion that corporate philanthropism can lead to the creation of positive moral capital for the firm that can mitigate the effects of a negative reputational effect (Godfrey, 2005). However, the insurance characteristic could not be supported when a broader definition of CSR, including employee relations, diversity, product quality, and environmental stewardship, was taken into consideration. This difference was attributed by the authors to the more tangible nature of corporate philanthropism as opposed to other forms of CSR (Godfrey et al., 2009). This finding goes along with the notion of signalling theory that assumes that for the signal to be effective it needs to be hard to mimic and possible to confirm (Spence, 1973). Finally, the results suggest that there is an optimal level of involvement with CSR beyond which there is no additional insurance coverage. Therefore, the signalling power of CSR that is at the basis for the creation of an insurance effect seem to be somehow constrained.

Minor (2011), using a similar methodology as Godfrey et al. (2009), addresses the role of CSR acting as an insurance policy. Identifying product recalls as the main negative reputational event, the author separated the sample of companies into three categories (“Irresponsible”, “Responsible”, and “Stellar”) based on their ability to avoid “Bad” CSR and involve in “Good” CSR. The evaluation was performed using the CSR scores as provided by a third party rating agency. In this context, “Bad” CSR included the involvement in regulation fights, lower product safety standards, and the conduction of limited due diligence on their supply chain. On the other hand “Good” CSR meant that companies would embrace superior quality assurance procedures, conduct ethical marketing campaigns and provide products with extra social value. The results of the study reveal the existence of an insurance function of CSR. At the same time, the paper provides evidence supporting the argumentation of Godfrey et al. (2009) regarding the limitation of CSR as an insurance mechanism. More specifically, what seems to pay-off more in an insurance sense is the intention to use CSR under the premise of reflecting the image of a good corporate citizen by avoiding “Bad” CSR rather than walking the extra mile by involving in “Good” CSR activities.

The differentiation between doing good versus avoiding bad, as explained above, is further investigated by Minor and Morgan (2011). Based on the results of the previous study, the authors tried to identify the value of the different CSR strategies that companies can adopt as a signalling mechanism of good management. In this case, the two main categories of CSR communication, namely “doing good” CSR versus “avoiding bad” CSR, are put into test as to which could better

protect the value of the firm in the aftermath of an adverse reputational event. According to their hypothesis, the success of the CSR strategy to be regarded as reputation insurance mechanism must be based upon its effectiveness in communicating that the adverse event was a result of bad luck rather than bad management. The research was conducted through a case study and a multi-year analysis of stock price responses for S&P 500 companies following product recalls (Minor and Morgan, 2011). The results of the study confirm the findings of (Minor, 2011). In particular, although the optimal strategy is to adopt a CSR that encompasses both strategies, on a standalone basis “avoiding bad” CSR can act as a more efficient signalling mechanism and render superior results compared to “doing good” CSR, which is punished as an attempt to compensate for bad management.

Peloza (2006) supports that an additional explanatory variable for companies’ involvement in CSR, apart from the incremental gains stemming from the role of CSR as a source of competitive advantage, is its role as a risk mitigator of existing competitive advantage against negative events. In order to examine this theory, Peloza (2006) conducted a series of interviews with fifteen senior and mid level managers where the focus was put on corporate philanthropy. The findings support the argument that management expects both incremental and an insurance gain against a wide range of potential reputational threats when deciding to involve in CSR activities. The insurance notion is further supported by the fact that CSR is perceived to be more effective if it precedes the negative event rather than as an ex-post action in order to mitigate the results of the event. However, Peloza (2006) reveals that not all CSR actions lead to the same result, as certain activities, such as capitalizing on good deeds, might not be as effective in providing insurance gain. Finally, the author suggests that the effectiveness of CSR as an insurance mechanism can differentiate among industries with the ones exposed to higher degree of scrutiny from stakeholders expecting larger insurance gains.

Shiu and Yang (2011) found evidence supporting the notion of the insurance effect of CSR. Through an event study conducted on a multiple industry sample, they found that superior CSR protects the reputational value of the firms after negative events. However, the authors also support that the effectiveness of CSR is dependent on the tradition that the companies have with CSR. Therefore, long term CSR engagement is proven to provide higher insurance protection against negative events, as opposed to short term CSR where results were insignificant. Finally, the authors found that CSR engagement is dependent on the specific characteristics of the industry. More specifically, companies belonging to the “final goods” industry were found to be more active in CSR as opposed to “non-final goods” firms. This reinforces the argument by Peloza (2006) that



companies belonging to industries with higher degree of scrutiny from stakeholders would engage more actively in CSR and CSR reporting, as they would expect larger insurance gains.

On the contrary, Linthicum et al. (2010) found no evidence for the notion of the use of CSR as a mitigator on the market value in the face of adverse reputational events. In specific, by performing an event study, the authors investigated the reaction of the 147 clients of the audit firm Arthur Andersen following the Enron scandal. The results of the research cannot support the hypothesis that superior CSR reporting would mitigate the impact coming from a negative reputational event. Therefore, the existence of an insurance effect stemming from superior CSR could not be supported. Contrarily, the main findings of Linthicum et al. support the line of research that argues that CSR is not consistent with the notion of maximizing shareholder value (Aupperle et al. 1985) and that no relationship between social responsibility and market value can be identified (Statman, 2000; Bauer et al., 2005).

### *3.2.2 CSR AND THE BANKING SECTOR*

In order to investigate the role of CSR reporting as a partial self insurance mechanism against adverse events (Minor and Morgan, 2011), the event study should focus on an industry with a high degree of visibility, where the motivation of creating and maintaining a reputation of a good corporate citizen (Hooghiemstra, 2000) is of essence. In this case, the focus will be placed on financial institutions and, more specifically, the banking sector for two main reasons.

First, the academic research on the relationship between CSR and banks is quite limited (Carnevale et al., 2012). This is often motivated by the financial sector having significantly lower direct environmental impact (Branco and Rodrigues, 2006). This comes in stark opposition to the attention shown to the industry by international organizations such as the Global Reporting Initiative (GRI) and the European Banking Federation (EBF), which in 2005 developed a document entailing the main principles and guidelines for social reporting in the banking sector (Carnevale and Mazzuca, 2014). One possible explanation of this development is that CSR reporting is not only limited to environmental issues but also involves disclosures on the social (customers satisfaction, human resources, community involvement etc.) and, most importantly, economic dimension (value generated from community involvement, financial implications of climate change etc.) that might be more closely associated with the financial sector (GRI FSSS, 2011). Moreover, an indirect environmental responsibility, such as lending to firms with environmental issues, has been highlighted by prior literature (Carnevale et al., 2012).

Secondly, financial institutions and especially banks have become increasingly sensitive to reputational risks. The main supporting argument for this statement is banks' high visibility due to their recognition among the general public (Clarke and Gibson-Sweet, 1999). This characteristic makes the specific sector more vulnerable to criticism from stakeholders regarding their activities, which in turns motivates banks to increase and maintain their "goodwill" through CSR activities, such as community contributions (Clarke and Gibson-Sweet, 1999). Furthermore, the aforementioned characteristic is reinforced by recent collapses and corporate scandals, which have raised major issues regarding the role of CSR and its importance for the survival of banks (Carnevale and Mazzuca, 2014). These incidents have led companies to reassess the importance of CSR related to risks threatening their reputation stemming from both their dealings with stakeholders and indirectly through their relationships with other firms (Carnevale and Mazzuca, 2014).

### 3.3 HYPOTHESIS FORMULATION

The theoretical background and empirical evidence laid down in the previous sections provides a guideline on what the investigation of the present thesis should focus. If CSR, as reflected through the quality of CSR reporting, acts as an insurance mechanism, a smoother drop in the CAR in the aftermath of a negative reputational event should be observed. Therefore, the research will try to reveal whether:

**Companies exhibiting high CSR performance, as reflected by the quality of CSR disclosure, will experience a significantly lower drop in CAR as compared to companies with low CSR performance.**

Moreover, although the insurance effect of CSR reporting will be initially assessed on the basis of the overall quality of CSR disclosures, the analysis will not be limited only to this level. This is due to its potential failure to reveal whether specific aspects of CSR might render more significant results, as already seen in the findings of prior literature. When motivating the selection of the banking sector, different dimensions of CSR reporting (economic, environmental and social) could be seen as having varying importance. More specifically, it is argued that primarily the economic and, to a less degree, the social dimensions of CSR reporting are more important for banks as compared to the environmental dimension (GRI FSSS, 2011). This is because they can be deemed more relevant to the nature of services offered by the companies in this specific sector. Therefore, CSR performance should also be analysed separately for each of the three dimensions. For this purpose, the first research question will also be investigated on the basis of each separate CSR dimension.

## 4. CSR REPORTING AS A SIGNALLING MECHANISM

In this section, the theoretical background for constructing a grading framework of CSR reporting will be presented.

### 4.1 CSR REPORTING EFFECTIVENESS – A LEMONS PROBLEM

As already mentioned in the previous section, CSR can be regarded as a contract with society that limits the operations of the firm within boundaries set by societal norms (Deegan, 2002). Within this setting, the value of CSR as an insurance mechanism lies within the notion that CSR can act as an assurance of ethical behaviour, which can in turn reflect good management (Kim et al., 2012). However, in order to benefit from this potential gain, companies must effectively communicate their CSR so that investors will be able to distinguish between good and bad CSR performers.

The overarching idea of this thesis so far has been that the primary target of companies involving in CSR activities and communicating them through CSR reporting is to decrease information asymmetry (Dhaliwal et al., 2011). In this case the information asymmetry is created due to the fact that good CSR companies might not be able to differentiate themselves from bad CSR companies, thus giving rise to an issue of adverse selection. In order to benefit from the signalling effect of CSR reporting and reduce this information asymmetry, companies are motivated to disclose their CSR information through annual reports or standalone sustainability reports. However, the power of these signals is dependent on how costly and difficult they are to imitate, which in turn relates to the quality of CSR reporting (Toms, 2002). Therefore, it becomes apparent that, in order to explore the value of CSR reporting as a signalling mechanism, a quality assessment of the content must be performed that will effectively separate between good and bad CSR performance. That way a link could be created between CSR performance and CSR reporting that could function as an effective signalling mechanism of good CSR performance.

However, the linkage between CSR disclosure and CSR performance has been the object of research with contributions pointing in opposite directions (Ullmann, 1985).<sup>6</sup> In response to Ullmann's (1985) warning from the usage of CSR disclosures as a proxy for CSR performance, what will be clarified below is that the grading framework for CSR disclosure was structured in a way to differentiate underlying high quality CSR performance from green-washing type of CSR, which implies poor underlying CSR performance.

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<sup>6</sup> The two main rationales for a positive or negative relationship between CSR disclosure and CSR performance are respectively: +) high CSR performers are incentivized to communicate their achievements through good quality CSR reporting; -) poor CSR performers use CSR disclosure as a legitimizing tool.

Finally, in order for the abovementioned reasoning to hold, the overarching assumption is that investors deem the information disclosed through CSR reporting material for their decision making process. Although prior literature renders contradicting results on this issue<sup>7</sup>, certain studies provide arguments supporting that assumption. More specifically, this stream of research, by conducting surveys among investors, finds a strong demand for social information (Epstein and Freedman, 1994; Deegan and Rankin, 1997; Miles et al., 2002; Solomon and Solomon, 2006). Moreover, a matter of specific interest for the present thesis is the notion that analysts will use CSR disclosure as a part of their assessment of companies' risk management profiles (Slack and Campbell, 2008). This goes in line with the insurance theory perspective arguing that CSR plays a role in the risk management of the company by protecting its reputation.

#### 4.2 THE GRI FRAMEWORK AS A SIGNALLING MECHANISM FOR COMPANIES

In line with voluntary disclosure theory, companies that want to benefit from the CSR reporting signalling effect, and therefore differentiate their performance from competitors, will opt to report their CSR activities using widely recognized standards and guidelines (Sutantoputra, 2009).

As already mentioned, the communication of CSR activities can be perceived as the most crucial process in CSR management. In order to approach this issue, many international organizations are publishing guidelines in order to provide companies with principles and guidance for defining the content and quality of their sustainability reports, as well as for setting the report boundaries (Isaksson and Steimle, 2009). Such international frameworks, that constitute a global standard for CSR reporting, include the GRI, the AA1000 Stakeholder Engagement Standard (AA1000 SES), ISO 26000 and SASB Standards.

However, the most influential and consistent framework for CSR reporting is the GRI framework.<sup>8</sup> As stated in the GRI guidelines, “the GRI Reporting Framework contains general and sector-specific content that has been agreed by a wide range of stakeholders around the world to be generally applicable for reporting an organization's sustainability performance.” (GRI G3, 2011, p. 3). The main advantage of the GRI is the ability to provide companies with standardized performance indicators for their environmental, social and economic impacts (Reynolds and

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<sup>7</sup> Examples of studies rejecting the materiality of CSR disclosures for analysts' investment decisions are: Ho and Wong (2004), Milne and Chan (1999) and Slack and Campbell (2008).

<sup>8</sup> The GRI Framework has become a universally accepted standard for CSR reporting as “Seventy eight percent of reporting companies worldwide refer to the GRI reporting guidelines in their CSR reports” (KPMG, 2013, p. 12). GRI was founded in 1997 by the Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environmental Program (UNEP). The GRI Guidelines were initially published in 2000 (Isaksson and Steimle, 2009).

Yuthas, 2008). This approach is consistent with the notion of Triple Bottom Line, according to which the success of a firm cannot only be measured on the basis of the traditional financial bottom line, but should also be based on the social and environmental bottom lines (Norman and MacDonald, 2004). Furthermore, the inclusion of these hard performance indicators can track and measure the CSR activity of the firm in a way that cannot be easily mimicked by poor CSR performers (Clarkson et al., 2008), and therefore can assist companies in better signalling their superior CSR performance. Additionally, in this way firms can mitigate the concerns about companies using CSR disclosure as a mechanism for “green-washing” and “blue-washing”<sup>9</sup> that stem from the voluntary and non-regulated nature of these disclosures (Laufer, 2003).

#### 4.3 CSR RATING AGENCIES AND THEIR LIMITATIONS

In addition to the companies’ CSR disclosures, investors can use third party CSR performance ratings, such as those provided by KLD Research and Analytics, Inc. (KLD) and Thompson Reuters Corp., as information sources for their investment decisions (Cho et al., 2013). These CSR performance ratings resemble information provided by other information intermediaries, such as sell-side financial analysts, and can affect the investors’ perception of future value and risk (Cho et al., 2013). However, while credit ratings constitute an established instrument for investment decisions, CSR ratings represent a rather new and less reliable measure (Schäfer et al., 2006).

It is therefore important to point out that the use of these ratings alone, as a basis for evaluating the quality of firms’ CSR performance, faces certain limitations. In fact, CSR disclosures contain information beyond what is included in CSR performance ratings and therefore provide additional information that may affect the investors’ decision. Especially given the minimal oversight and transparency of the methodology used by those agencies, it is unclear as to whether investors will base their investment decision solely on these ratings in the face of an adverse reputational event (Dhaliwal et al., 2011). Opponents of these CSR performance ratings point out that CSR rankings offered by third parties suffer from the fact that the criteria used vary substantially across rating agencies and that the data which they are based on are usually unreliable (Porter and Kramer, 2006). This inconsistency and heterogeneity observed in third parties’ CSR ratings can be attributed to the diversity between agencies’ perceptions in defining and evaluating CSR activities (Sjöström, 2004).

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<sup>9</sup> “Washing through the reputation of the United Nations” (Laufer, 2003, p. 255).

## 5. METHODOLOGY

### 5.1 GRADING FRAMEWORK FOR CSR REPORTING

#### 5.1.1 OVERVIEW OF THE GRADING FRAMEWORK

In order to capture the value of CSR reporting as a signalling mechanism of ethical behaviour, a comprehensive grading framework was in this thesis proposed and used to assess the quality of CSR disclosures of the companies included in the sample. For this purpose a set of GRI indicators was selected and assessed based on quality criteria in order to obtain an overall CSR score for each company. Moving away from the idea of using third parties' CSR ratings, due to the limitations mentioned earlier, the use of content analysis was chosen as the primary methodological tool for assessing the information disclosed through CSR reporting. The main reason for this is that content analysis can provide valuable insights into corporate behaviour and therefore better capture the aforementioned concept of ethical behaviour (Waddock and Graves, 1997).

However, when assessing the quality of CSR disclosures, it is important to highlight that a linkage between the quality of CSR disclosures and CSR performance needs to be formed. If that linkage cannot be established, in line with Akerlof's (1970) reasoning, companies with bad CSR performance will opt to benefit from increased CSR reporting and consequently decrease the effectiveness of the signal. Therefore, it was deemed important for the grading framework developed in this thesis to be based on certain **quality criteria** (auditability, business model relevance, comparability) that would assist in differentiating between good and bad CSR performance, rather than simply assessing CSR disclosures based on the extent of information provided. In this way, companies with bad CSR performance would not be able to benefit from an extended reporting of CSR information and therefore CSR disclosures would result in a strong signal of ethical behaviour.

Moreover, by limiting the assessment to hard measures of CSR disclosures, as expressed by the **GRI indicators**, will decrease the probability of adverse selection. That is because performance indicators can measure CSR activities in a way that cannot be easily imitated by poor CSR performers (Clarkson et al., 2008). In the following section the main outline of the grading framework for CSR reporting will be further laid out in order to clarify the abovementioned aspects.

#### 5.1.2 THE BENEFITS AND LIMITATIONS OF CONTENT ANALYSIS

Content analysis can be defined as “a technique for gathering data that consist of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative

scales of varying levels of complexity” (Abbott and Monsen, 1979, p. 504). When applying content analysis, researchers first identify certain environmental issues, and then analyse the environmental disclosure of each issue using a scoring methodology. After individual issues are quantified, researchers determine the aggregate score for each firm (Al- Tuwaijri et al., 2004).

Al-Tuwaijri et al. (2004) suggest that techniques assessing the disclosures of environmental responsibility can be classified into two main groups depending on whether they focus on quantifying the level of disclosure (e.g. word count) or focus on qualitative disclosure measures (e.g. content analysis). Since the first type seem to provide a weak tool for identifying “green-washing”, the second technique was chosen for the current thesis as it could provide a better assessment of the quality of CSR disclosures.

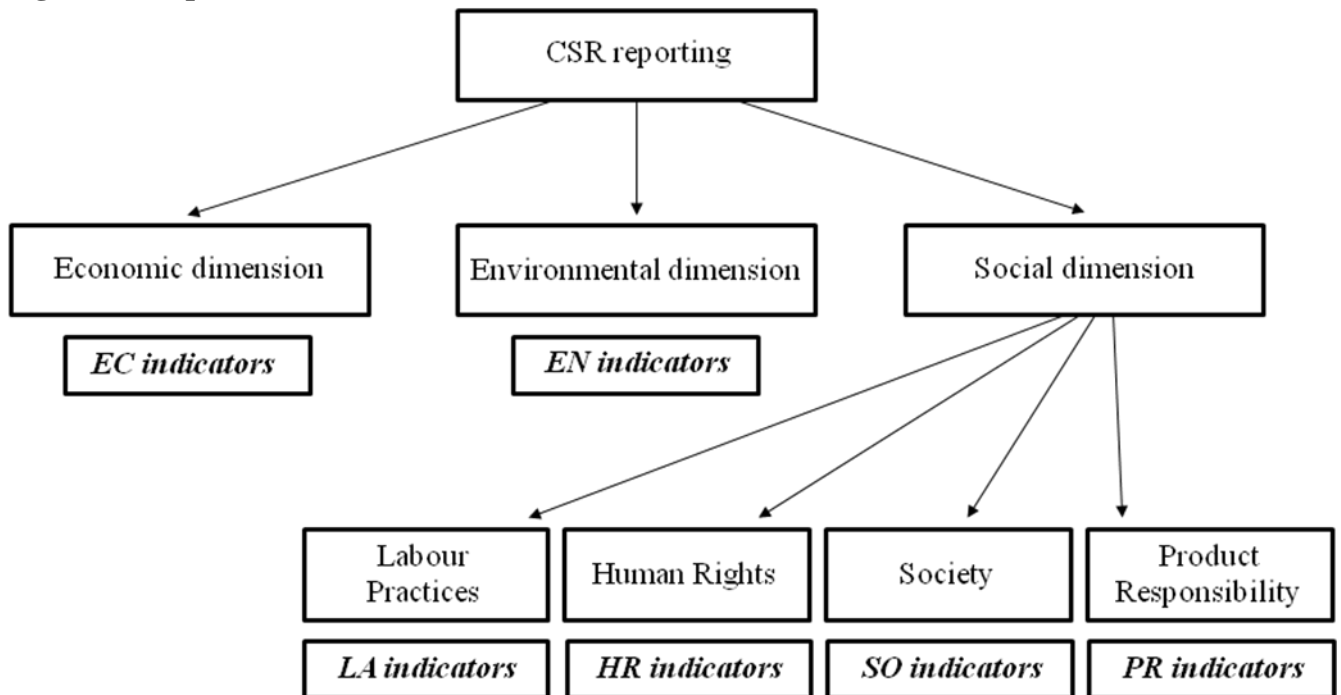
Content analysis, as a methodological tool, also involves certain limitations (Waddock and Graves, 1997). The most important of which is that it fails to capture the multidimensional nature of CSR that can vary across inputs (e.g. investment in pollution control), internal processes (e.g. customer relationship) and outputs (e.g. philanthropic programs). This characteristic illustrates the difficulty that the exact measurement of CSR activities poses. Additionally it creates a problem when studying CSR activities across different industries and within a very large sample. However, by limiting the current thesis within a specific sector and constraining the sample to a reasonable size, this issue has in this thesis been taken into consideration. Furthermore, by selecting a set of comprehensive and consistent indicators based on GRI along with its supplement for the financial sector, the effort was made not to omit any significant indicator that would affect the result of the grading.

### *5.1.3 PERFORMANCE INDICATORS – WHAT IS GRADED?*

As already mentioned, companies will opt to use an international framework for reporting CSR activities, like the GRI Guidelines (Sutantoputra, 2009). Consequently, the GRI performance indicators served as the “hard” measures on which the content analysis developed in this thesis was based upon as suggested by Clarkson et al. (2008), Sutantoputra (2009) and Skouloudis et al. (2010). The main reasoning behind this is that a good CSR performer, as opposed to a poor CSR performer, will be motivated to voluntarily disclose objective measures of social and environmental impact in the form of quantitative performance indicators that can be audited and function as a benchmark for the industry, as suggested by Clarkson et al. (2008). A second motivation for using the GRI indicators for the grading framework developed in this thesis is the fact that they cover all three dimensions of CSR described earlier (economic, environmental and social).

For the development of the grading framework, a set of GRI indicators was therefore selected based on their relevance for the activities of the banking sector, hence certain indicators from the general GRI framework were omitted or merged. By selecting the CSR indicators from the GRI guidelines, it is believed that the present framework will enable a comprehensive analysis of the whole spectrum of CSR information, even in the case of companies not reporting according to the GRI Guidelines. Following the GRI categorization, the indicators will belong to one of the following dimensions: economic, environmental or social, with the social dimension presenting a sub-categorization in labour practices, human rights, society and product responsibility (Figure 1).

**Figure 1: Map of indicators based on CSR dimensions**



#### 5.1.4 QUALITY CRITERIA – HOW IS IT GRADED?

In order to assess the quality of the CSR performance indicators identified above, three criteria were proposed: auditability, business model relevance and comparability. The purpose was to develop a grading system that reflected the content and quality characteristics expressed in the GRI framework: sustainability context, materiality, completeness, balance, comparability, accuracy and timeliness (GRI G4, 2013). The combination of the three criteria gave each indicator a score in the range [1-5] (see figure 2).<sup>10</sup>

<sup>10</sup> One important aspect the coder had to take into account when looking for the different indicators was the “10 minutes rule”. The idea behind this is that the ordinary investor would not devote more than a limited amount of time when looking for a specific information and therefore an indicator that is extremely hard to find within the report should not be awarded points.



### *AUDITABILITY [0-2]*

- 0.5 points were given to the indicator if only a very general and brief description was provided. Also, the same points were awarded if the company clearly mentioned that the specific indicator was not applicable to its activities and thus did not disclose information on the specific indicator.
- 1 point was awarded to the indicator if a specific and more detailed description was given which could include, apart from a declarative, also a numerical disclosure.
- 2 points were awarded to the indicator if a thorough analysis was provided. This could include a specific and numerical description as well as explanatory examples with references to a specific action, person, event, or place.

The rationale behind this criterion is that specific and numerical information provides reliability, which becomes even stronger if auditability is allowed through the disclosure of specific references (Freedman and Stagliano, 1992; GRI G4, 2013; Wiseman, 1982).

### *BUSINESS MODEL RELEVANCE [0-1]*

- 0 points were given if the item described was not integrated within the business model of the company. One example could be charity donations.
- 1 point was awarded if the indicator evaluated is integrated within the business model and processes of the firm. However, in order for the company to get awarded the point, a description of how the indicator was integrated into the business model of the firm through specific examples was needed.

This criterion helps differentiating between good and bad CSR performance. Even if positive, activities like charity donations can be implemented by large organizations without major organizational efforts and can therefore be identified as “low hanging fruits” for those firms that intend to pursue a window-dressing type of CSR (SASB Conceptual Framework, 2013).

### *COMPARABILITY [0-2]*

- 0 points were awarded if the item did not present any kind of comparability, both historical and industry-wide.
- 1 point were given if the item offered one comparability dimension, either across years or across competitors.
- 2 points were awarded if comparison covered both areas.

The use of this criterion is motivated by the fact that comparability across years and competitors is important for reliability and clarity and therefore fosters usefulness for the investor (GRI G4, 2013; Isaksson and Steimle, 2009)

In order to further illustrate the procedure for grading the CSR disclosures, a summary of the grading framework, including the first indicators from each dimension of CSR, is shown in figure 2. In total the indicators used for the grading of CSR summed up to 49, the economic dimension including 6 indicators (EC1-EC6), the environmental 11 indicators (EN1-EN11) and the social 32 indicators in the four different subcategories explained in figure 1 (LA1-LA13, HR1-HR4, SO1-SO7, PR1-PR8). As can be seen CSR scores were calculated both for every dimension of CSR and on an overall basis. A full grading from a randomly picked CSR report from the sample is also presented in appendix 3, table C.

**Figure 2: Representation of the developed grading framework**

	<b>Indicators</b>	<b>Auditability [0-2]</b>	<b>Business Model [0-1]</b>	<b>Comparability [0-2]</b>	<b>TOTAL</b>	<b>Page in Report</b>
EC1	Value generated by the organization's community investment programs and breakdown of community investment by theme.	0	0	0	0	
EC2	...	-	-	-	-	
	<b>Subtotal Economic Dimension</b>	0	0	0	0	
EN1	Materials used and percentage of recycled materials (by weight or volume).	0	0	0	0	
EN2	...	-	-	-	-	
	<b>Subtotal Environmental Dimension</b>	0	0	0	0	
LA1	Total workforce by employment type, employment contract, and region.	0	0	0	0	
LA2	...	-	-	-	-	
HR1	Human rights-based assessment of investees and clients and percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	0	0	0	0	
HR2	...	-	-	-	-	
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	0	0	0	0	
SO2	...	-	-	-	-	
PR1	Policies for the fair design and sale of financial products and services.	0	0	0	0	
PR2	...	-	-	-	-	
	<b>Subtotal Social Dimension</b>	0	0	0	0	
	<b>Total CSR</b>	0	0	0	0	

### *5.1.5 SHARED MEANING AND REPLICATION*

Although the choice of content analysis was deemed as the most appropriate method to assess the value relevance of CSR reporting, certain considerations still need to be taken into account. The most important are the ones regarding objectivity and reliability of the CSR rating index generated by the grading framework. In order to address these considerations, the content analysis needs to be based on “shared meanings” and the data collection and assessment must be replicable (Gray et al., 1995a). This means that “the definitions employed in the data collection are negotiated in order to achieve shared meanings which recreate the same referents in all associated researchers” (Gray et al., 1995a, p. 80). By using a systematic framework (GRI) as a guideline for identifying the indicators the aforementioned problem was to a large extent accommodated. On the other hand, the grading of the indicators based on certain quality criteria created an additional complexity.

In order to increase the robustness of the grading framework, an additional process of reliability testing and replication, similar to that of Gray et al. (1995a), was followed. Accordingly, a random subsample of two companies was picked and graded independently by the two coders, in order to identify major discrepancies in the scoring between the two set of grading. The most significant differences were observed in the quality criterion “business model relevance”, which was therefore redefined in a more detailed manner. An additional subsample of three reports was then independently graded, for which no major differences were observed. The results and the differences from the subsample can be observed in appendix 2, table B.

### *5.1.6 LOCATION OF CSR DISCLOSURE*

One important aspect of the grading framework is the sources of CSR disclosure. Since CSR reporting falls within the category of voluntary disclosures, companies can choose to disclose different amounts of information through different sources (annual reports, standalone CSR reports and corporate websites). Due to time limitations, certain constraints were imposed on the different sources of CSR reporting that could be reviewed. Since the scope of this research is within the value of CSR reporting for investors, corporate websites were excluded from the analysis as they are primarily directed to other stakeholders such as customers (Branco and Rodrigues, 2006). Therefore, the research was limited to annual reports and standalone CSR reports issued by companies. Annual reports are considered to be the primary means of communication between the firm and its investors and therefore any CSR information that they include is considered to predominantly address investors’ concerns (Douglas et al., 2004). However, companies might choose to either disclose information on CSR as an integrated part of the annual report or as a

standalone CSR report. For comparability reasons the standalone CSR reports were also assessed. Finally, the assessment was based on the most recently available annual and standalone report prior to the event date. The release date for the standalone CSR reports was identified to be the same as for the financial reports.

## 5.2 EVENT STUDY METHODOLOGY

### 5.2.1 OVERVIEW ON THE EVENT STUDY METHODOLOGY

An event study is a process that, through the use of financial data, measures the impact of a specific piece of news on the value of a firm in terms of stock price reaction. Price reactions in this case are represented by abnormal returns (AR) as expressed by the following formula:

$$AR_{it} = R_{it} - E(R_{it}|X_t)$$

where  $AR_{it}$  is the abnormal return,  $R_{it}$  is the actual return and  $E(R_{it}|X_t)$  is the normal return for stock  $i$  in period  $t$ , with  $X_t$  being the conditioning information for the normal return model. As explained further on, the market model was used in this thesis for the estimation of the normal return.  $X_t$  therefore represents the return of the market. The underlying assumption for this type of study is that rationality in the market implies a quick assimilation of relevant information in share prices (MacKinlay, 1997). This methodological approach, predominant in prior research on the insurance effect of CSR, was chosen for the present thesis in order to measure the drop in CAR following a negative reputational event and the effect of CSR on the drop.

The typical six-step process in an event study includes: a) the sample selection; b) the definition of an event window; c) the characterization of normal returns; d) the calculation of abnormal returns; e) the aggregation of abnormal returns and f) statistical tests. Each of these steps entails issues and decisions the researcher has to face (Henderson, 1990). This section is developed in order to illustrate and motivate the main methodological choices made in this thesis.

### 5.2.2 SAMPLE SELECTION AND EVENT DATE DETERMINATION

The sample was selected among listed banks headquartered in Western Europe. This choice is motivated by the assumption that CSR reporting within these countries ought to be comparable to a significant degree, due to the existence of a joint effort within EU to create a uniform set of rules and guidelines for CSR.<sup>11</sup>

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<sup>11</sup> Examples include the European Sustainable Development Network (ESDN) and the EU guidelines on renewable energy and pollution.

Since the testing of the hypothesis was performed through an event study, companies were selected on the basis of negative reputational events during the period 2007-2013. The choice of period was dictated by the availability of reports for the companies included in the sample. Additionally, due to time constraints imposed by the grading procedure of CSR disclosures, the sample was limited to 50 events. Furthermore, the size of the sample was imposed by the time consuming task of identifying news related to the initial outburst of the event, which was needed to capture the full effect in terms of abnormal returns. Despite the limitations, the size of the sample was deemed adequate in order to derive statistical inferences without undermining the assumption of the normality of abnormal returns, as supported by Brown and Warner (1985).

The event search was performed through the *Factiva news database* with the use of relevant keywords, as suggested by prior literature (Godfrey et al., 2009; Shiu and Yang, 2011).<sup>12</sup> The search was limited to the most important international news sources (*Reuters Newswires*, *The Wall Street Journal*, *DowJones Newswires*).<sup>13</sup> After an initial broad search that yielded an extensive number of news articles, a few main areas were identified as often recurring and more closely related to the definition of adverse reputational event in the banking sector, e.g. subprime loan crisis, LIBOR scandal, Madoff scandal, money laundering cases. These examples were also identified by Heineman as the most common and severe scandals within the banking sector in the past decade (2013). The definition of negative events used in this thesis is the one proposed by Godfrey et al. (2009), which identifies a negative event based on its legal or regulatory effect. The event search eventually rendered a sample of 50 events from 31 different companies. An effort was made to incorporate companies from as many European countries as possible and with a good distribution throughout the time period chosen, rather than focusing on including all possible events for the single companies in the sample. Finally, it is important to stress that the companies of the sample were identified without awareness of stock prices and before the grading of CSR disclosures.

### 5.2.3 DEFINITION OF EVENT WINDOW

Two aspects need to be considered when determining an event window. On the one hand, the ability of selecting a short event window enhances the statistical power of the event methodology (Brown and Warner, 1985) and substantially reduces the risk of confounding effects (McWilliams and

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<sup>12</sup> The keywords used for the search were “scandal”, “fraud”, “fine”, “sanction”.

<sup>13</sup> The choice to limit the search of events within the major publications served as a control for the magnitude of the negative news. In fact, local publications, while assuring that the very first news on the topic could be identified, do not provide assurance on the fact that news are relevant for a more international audience.

Siegel, 1997). On the other hand, selecting a larger event window allows for the capturing of eventual leakages of information prior to the event date (MacKinlay, 1997).

With these considerations in mind, the first step for defining an event window for this thesis was the calculation of the average CAR over a large window (-20, +20) days. The main motivation for this preliminary selection was twofold. First, as already mentioned, a large pre-event window allows accounting for possible information leakages preceding the event date. Second, the extended pre-event window allows to test whether the possibility of confounding events for single companies affects the average CAR. More specifically, although the existence of confounding effects distorting the result of each negative reputational event was investigated, the possibility of those effects could not be completely excluded. Therefore, it was important to ensure that those confounding effects would offset when average CAR were calculated for the sample. The outcome of this reasoning appears clearly in graph 1 in the results section. Based on the results it was deemed reasonable to narrow down the event window to (-3, +4) and to include a post-event window of 16 days (+5, +20), in order to detect whether an insurance effect of CSR could appear in the form of a quicker recovery.

#### *5.2.4 CHARACTERIZATION OF NORMAL RETURNS*

Before calculating the abnormal returns, a model for determining normal returns must be defined. Although prior literature offers certain alternatives concerning this issue<sup>14</sup>, the market model, which relates the returns of any given security to the return of the market portfolio (MacKinlay, 1997), was followed for the purposes of this thesis. The main motivation for that choice is the fact that the market model is considered the predominant approach for conducting event studies due to the limitations linked with the alternative models as stated by Henderson (1990).

The market model is an example of a one-factor model, where the factor represents a portfolio of traded securities from which the returns of the market portfolio can be retrieved (MacKinlay, 1997). The disadvantage of the one-factor model compared to a multi-factor model stems from the latter allowing a reduction in variance of the abnormal returns (MacKinlay, 1997). Although aware of the limitation that this could to the present methodology given the selected sample, the market model was preferred for the purposes of this thesis since the additional complexity of a multi-factor model would outweigh its advantages. Furthermore, Brenner (1979) finds that the market model, although the simplest approach, performs as good as other more complex regression approaches. Under the

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<sup>14</sup> Other methods are: the mean-adjusted returns, the market adjusted returns and the control portfolio returns (Henderson, 1990).

market model, a linear relation between the market return and the security return is assumed (Campbell et al., 1997). Therefore for any security  $i$ , the market model takes the form:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

with  $E(\varepsilon_{it}) = 0$  and  $\text{var}(\varepsilon_{it}) = \sigma_\varepsilon^2$  and where  $R_{it}$  is the return in period  $t$ ,  $R_{mt}$  is the return for the market portfolio in period  $t$ ,  $\varepsilon_{it}$  denotes the mean disturbance term and  $\alpha_i, \beta_i, \sigma_\varepsilon^2$  represent the parameters of the market model. As suggested by MacKinlay (1997), an ordinary least squares (OLS) method is selected for the estimation of the market model parameters ( $\alpha$ ,  $\beta$  and  $\sigma_\varepsilon^2$ ) in the regression. OLS is the most common method used in econometrics to estimate linear regressions. This method derives estimates for the coefficients of the independent variables by minimizing the sum of the squared residuals, that is the difference between the actual values and the estimated values by the linear regression (Wooldridge, 2004). The formulas for those estimators are included in appendix 2.

In this thesis, the S&P 500 was used in order to calculate the returns of the market portfolio, due to its broad base that would not substantially be affected by movements in the individual securities in the sample but rather reflect the market as a whole, as indicated by MacKinlay (1997).<sup>15</sup> Furthermore, the choice between simple or compounded returns needed to be made. Although some benefits have been identified with the use of compounded returns (e.g. the improvement of the normality of the returns distribution), both Brown and Warner (1985) and Thompson (1988) argue that results are not substantially affected by the use of one or the other type. Hence, the choice was made to use simple returns, which is expressed by the formulas below:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad \text{and} \quad R_{mt} = \frac{P_{mt} - P_{mt-1}}{P_{mt-1}}$$

where  $R_{it}$  is the return for stock  $i$  in period  $t$  while  $P_{it}$  and  $P_{it-1}$  are the closing prices for security  $i$  on day  $t$  and day  $t-1$ . Finally,  $R_{mt}$  represents the return for the S&P 500 while  $P_{mt}$  and  $P_{mt-1}$  are the closing prices for the S&P 500 on day  $t$  and day  $t-1$ . Data to calculate both actual stock returns and market returns were retrieved from *Thomson Financial Datastream*. In this context, it is important to point out that the calculation of returns was based on daily stock prices adjusted for the effects of capital actions.

Finally, in order to calculate the market model parameters ( $\alpha$ ,  $\beta$  and  $\sigma_\varepsilon^2$ ) an estimation window was defined. As with the choice of event window, there is a trade-off to be taken into account when

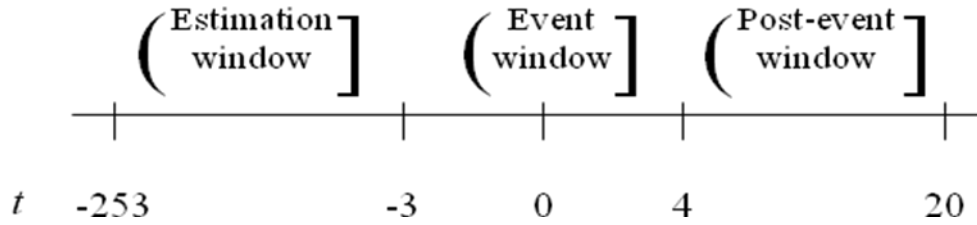
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<sup>15</sup> S&P 500 is a stock market index based on the market capitalisation of the 500 largest US companies. The choice of this index was made due to its strength in comparison with European indexes and due to the high correlation between European and US indexes.

selecting the length of the estimation window. On the one hand, a large estimation window will drive the additional variance due to the sampling error of the estimated parameters towards zero, thus allowing the variance of the AR to coincide with the variance of the error term. This will allow AR observations to become independent through time, meaning that AR will be normally distributed with zero conditional mean and variance equal to that of the error term (MacKinlay, 1997). On the other hand, a shorter estimation window better reflects the current economic situation of the company. In this thesis, the estimation window included 250 days prior to the event window as indicated by MacKinlay (1997). In order not to let the event affect the estimation window, the event window was excluded from the estimation window.

### 5.2.5 CALCULATION AND AGGREGATION OF ABNORMAL RETURNS

**Figure 3: Timeline of the event study for the present thesis**



Once the normal returns were estimated as explained above, AR were calculated by subtracting the normal returns from the actual returns as shown by the following formula:

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}$$

where  $AR_{it}$  is the abnormal return for stock  $i$  in period  $t$ ,  $R_{it}$  is the return for stock  $i$  in period  $t$ , while  $\hat{\alpha}_i$  and  $\hat{\beta}_i$  are the estimated parameters of the market model for stock  $i$  and  $R_{mt}$  is the return for the market portfolio on day  $t$ . As shown by figure 3, AR were calculated for the event window (-3, +4). Moreover, in order to detect whether an insurance effect of CSR could appear in the form of a quicker recovery in CAR, AR was calculated over a 16 days post-event window (+5, +20). Consequently, CAR was calculated following the formula below<sup>16</sup>:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{it}$$

<sup>16</sup> The choice of CAR, as opposed to abnormal return index (API), was made due to CAR's higher testability (Henderson, 1990).



where  $CAR_i(t_1, t_2)$  is the cumulative abnormal return for stock  $i$  over the event window  $(t_1, t_2)$ . Thereafter average CAR was calculated through the following formula:

$$\overline{CAR}(t_1, t_2) = \frac{1}{N} \sum_{t=t_1}^{t_2} CAR_i(t_1, t_2)$$

where  $\overline{CAR}(t_1, t_2)$  is the average cumulative abnormal return for the period  $t_1$  to  $t_2$  and  $N$  is the number of observations.

### 5.2.6 STATISTICAL TESTS

Before testing the influence of the level of CSR on the CAR for the event window it was important to analyse the CAR for the sample on a standalone basis. Specifically, it was examined whether announcements of negative reputational events were linked with a statistically significant impact on average CAR for the sample. In order to verify the significance of the drop, a one-sample t-test was performed. This type of analysis falls within the field of parametric tests and is one of the most common tests for an event study (Serra, 2002). The results from the t-test were tested at a significance level of 5 %. For robustness purposes, a one-sample Wilcoxon Signed Rank test was conducted, in order to examine whether the median of the average CAR significantly differed from zero.

Furthermore, in order to test for statistical significance of the relationship between the calculated CSR score and the CAR for the event window, a multivariate regression analysis was performed in line with previous studies on the insurance effect of CSR (Godfrey et al., 2009; Linthicum et al., 2010; Shiu and Yang, 2011). The method used was the OLS, already described above. The results of the regression were then evaluated according to the R-squared and the F-statistic of the models and their significance examined at a 10 % level. The regression performed can be expressed by the formula:

$$CAR_{iL} = \alpha + \beta_{CSR} CSR_{it} + \beta_{SIZE} SIZE_{it} + \beta_{MtoB} MtoB_{it} + \beta_{ROIC} ROIC_{it} + \beta_{CRISIS} CRISIS_t + \varepsilon_{it}$$

Where the dependent variable  $CAR_{iL}$  is the CAR for stock  $i$  over the event window  $L$  (-3, +4) and the independent variable  $CSR_{it}$  is the overall CSR score resulting from the grading framework.

The choice of control variables –  $SIZE_{it}$ ,  $MtoB_{it}$ ,  $ROIC_{it}$  – was based on the suggestions of prior literature (Godfrey et al., 2009; Shiu and Yang, 2011; Flammer, 2013) and one additional variable ( $CRISIS_t$ ) was formulated specifically for the sector and period chosen for the present thesis.  $SIZE_{it}$  is the total assets for stock  $i$  at the event date, converted into Euro using the appropriate daily

exchange rate and log transformed.  $MtoB_{it}$  is the market to book ratio for stock  $i$  at the event date, calculated using data for market capitalization and book value.  $ROIC_{it}$  is return on invested capital for stock  $i$  at the event date and is used as a proxy for profitability due to its superiority compared to other measures, as suggested by Koller et al. (2011). Finally,  $CRISIS_t$  is a variable used to control for the turbulent years included in the sample. Since the sample was chosen within the financial sector during the period 2007-2013, a variable to account for the years of the financial crisis was formulated, taking the value of 1 for the years 2007-2008 and the value of 0 for the years 2009-2013 (Helleiner, 2011). All data were retrieved from *Thomson Financial Datastream*.

### SENSITIVITY ANALYSIS

In addition to the  $CSR_{it}$  variable based on CSR individual scores, other alternative formulations of the independent variable –  $CSRcat_{it}$  and  $CSRav_{it}$  – were tested.  $CSRcat_{it}$  is a variable that takes the values 0, 1 or 2 depending on which CSR category the company is assigned to, based on its overall CSR score (“low quality CSR”:  $CSR_i \leq 40$ ; “medium quality CSR”:  $41 < CSR_i \leq 70$ ; “high quality CSR”:  $CSR_i > 70$ ). This separation of the sample stems from Minor and Morgan’s (2011) suggestion of differentiating between good and exceptional CSR performance. The rationale behind this procedure is that the fundamental investor’s analysis might not result in precise individual CSR scores, but would rather result in assigning a general CSR level that positions the company in one of the three categories. In this context, it is important to specify that this division does not derive from an even separation of the observations in the three categories. Rather, the sample was divided where cut-off values between the CSR scores could be identified, in order to ensure that companies with the same CSR score would not end up in different categories. This resulted in the “low quality CSR” category including 18 observations, the “medium quality CSR” category including 20 observations and the “high quality CSR” category including 12 observations. Moreover, a simpler approach was also introduced, whereby the sample was divided into two groups based on the average CSR score.  $CSRav_{it}$  is therefore a variable taking the values 0 or 1 depending on whether  $CSR_i$  falls within the below average half or the above average half of the sample.

In order to analyse the different CSR dimensions (economic, environmental and social), the variables  $EC_{it}$ ,  $EN_{it}$  and  $SO_{it}$  – i.e. the subtotals resulting from the grading framework – were used separately as independent variables. As previously done with the overall CSR variable, a three-category division ( $ECcat_{it}$ ,  $ENcat_{it}$  and  $SOcat_{it}$ ) and an average division ( $ECav_{it}$ ,  $ENav_{it}$  and  $SOav_{it}$ ) were also formulated and tested. For consistency purposes, the same distribution of observations was used for the three category divisions (“low quality”: 18, “medium quality”: 20 and “high

quality”: 12) even if no cut-off values could be found. Additionally, it is important to state that in this case the companies were ranked only based on their grades on each CSR category.

Moreover, all the regressions were tested with a shorter event window (-3, +1) following the in order to verify that the choice of a shorter event window would not impact results substantially. Additionally a sensitivity test was performed by removing 10 observations included in the Madoff scandal. The reasoning behind this choice was that clustering, although not prevalent in our sample, might constitute a threat to the assumption of normally distributed CAR as stated by MacKinlay (1997). This consideration to was relegated to a mere sensitivity test in accordance to the arguments of Brown and Warner (1985). The authors argue that tests that assume independence in the observations, like the regression used in this thesis, provide gains also in scenarios where clustering is present, while adjusting for cross-sectional dependence reduces the power of tests substantially (Brown and Warner, 1985). It was therefore expected that this additional sensitivity analysis would not provide substantially different results from the regressions run on a full-sample basis.

Finally, the variable  $EVENT_{it}$ , which takes value of 0 for company-specific events and the value of 1 for industry-wide events, was used for the CAR analysis. The rationale behind the introduction of this variable was the need to verify that more severe events were not accidentally associated with high scores of CSR (and therefore potentially hid an insurance effect). Since monetary impacts of the events are usually ambiguous, attempts to control for the magnitude of an event constitute a hard and probably meaningless task. On the other hand, a sounder way to solve comparability issues within the sample is to divide events based on their nature. A meaningful separation was thought to be based on whether the event is company-specific or industry-wide (e.g. subprime loan crisis, Madoff scandal, Libor scandal).

### *5.2.7 CONSIDERATIONS FOR THE EVENT STUDY METHODOLOGY*

To conclude this section, it is important to highlight potential concerns with the event study methodology. McWilliams and Siegel (1997) specify a series of problems a researcher needs to be aware of when choosing this type of study.

First of all, in order for results to be strong and generalisable, considerations on the sample size are important. In this thesis the choice of 50 events was made as a result of the trade-off between the possibility to perform statistical tests and the time necessary to perform a content analysis of the CSR reporting. It is believed that, although the validity of the results could improve with a larger

sample, the size chosen for the sample is, according to Brown and Warner (1985) not unreasonable for statistical tests.

Continuously, three other observations by McWilliams and Siegel (1997) were also taken into account in the choice of an eight days event window (-3, +4), namely assumptions concerning market efficiency, leakage of information prior to the event date and confounding effects during the event window. Firstly, adding some days prior and after the event date goes along with the assumption that markets are not efficient in a strong form. Secondly, the three days before the event date allow for the capture of eventual leakage of information that could affect the AR. Finally, eight days seem a short enough window for what concerns the risk of potential confounding effects. Moreover, a second and shorter event window (-3, +1) will be tested to ensure that the results would not change significantly.

## 6. RESULTS AND ANALYSIS

### 6.1 DESCRIPTIVE STATISTICS

#### 6.1.1 OUTCOMES OF THE GRADING FRAMEWORK FOR CSR DISCLOSURE

Before the presentation and analysis of the results from the event study performed, it is important to present an overview of the grading of CSR reports included in the sample, through the use of a descriptive analysis. That way, the reader will get a better understanding of the overall outcome from the procedure that was displayed in the methodology section of the grading framework.

**Table 1: CSR Grading**

	Dimensions of CSR			Total CSR
	EC	EN	SO	
<b>N</b>	48	48	48	48
<b>Max</b>	16.5	32	64	111.5
<b>Min</b>	0	0	0	0
<b>Average</b>	6.47	16.83	28.89	52.19
<b>Std deviation</b>	4.47	8.05	16.60	26.44

**Table 2: CSR grading based on type of report**

	Integrated Report				Non Reporting				Standalone CSR Report			
	EC	EN	SO	Overall	EC	EN	SO	Overall	EC	EN	SO	Overall
<b>N</b>	6	6	6	6	4	4	4	4	38	38	38	38
<b>Max</b>	5	25.5	29	57.5	0.5	0	4	4.5	16.5	32	64	111.5
<b>Min</b>	0	1	9	12.5	0	0	0	0	2	0.5	7.5	26.5
<b>Average</b>	2.67	11.83	18.25	32.75	0.13	0.00	2.38	2.50	7.74	19.39	33.36	60.49
<b>Std Deviation</b>	1.66	9.24	7.67	17.36	0.25	0.00	1.70	1.87	4.08	5.41	15.07	21.16

Table 1 and Table 2 depict a basic analysis of the scores for CSR disclosures. The analysis is performed on an overall basis, on the different dimensions of CSR (economic, environmental and social), as well as on the different types of reporting (standalone CSR reports, Integrated CSR reporting in the annual reports and non reporting companies).

The total number of reports ranked is 48, which is 2 less than the total number of events in the sample (table 1). The reason for this discrepancy is that for two of the companies included in the sample (UBS and Societe Generale), the same CSR report was relevant for two different events occurring in the same year (2011 for UBS and 2006 for Societe Generale) as can be observed in appendix 1, table A. On an overall basis, CSR scores stretch over a wide range, with the minimum score being 0 and the maximum being 111.5. Moreover, it can be noted that the social dimension of

CSR, as opposed to the economic and environmental dimensions, exhibits the highest score on average (28.89) as well as the highest standard deviation (16.60). This is an expected result as this dimension involves the largest number of indicators (32, including the three subcategories explained in the grading framework methodology), as opposed to 6 for the economic and 11 for the environmental dimensions.

Table 2 reveals that the most common practice for the banks in the sample is the disclosure of CSR through standalone CSR reports. More specifically, in 79.2 % of the cases (38 observations) CSR reporting was conducted through standalone CSR reports, while only 12.5 % (6 observations) included integrated CSR reports in the annual reports and in 8.3 % of the cases (4 observations) the companies didn't involved in any explicit CSR reporting. On average standalone CSR reports score higher than the other two types of reports (60.49). However, as explained in the methodology section, the "low quality CSR" category includes companies with scores up to 40 while the minimum for standalone CRS reports is 26.5. This shows that issuing a standalone CSR report does not automatically exclude the possibility of belonging to the "low quality CSR" category, thus supporting the idea that extent of reporting is not always correlated with quality.

Moreover, for comparability reasons, the CSR grades for the grading framework are screened against ratings of other agencies. The most similar comparison the grading framework proposed in this thesis was provided by GRI, which discloses a grade stretching from C- to A+ based on the quality of standalone CSR reports based on the GRI framework. Although the grades were available only for subsections of the sample, the results, as presented in appendix 1 – table A, are closely related to the scores rendered from the developed grading framework.

### 6.1.2 SAMPLE COMPOSITION

**Table 3: Distribution of events based on event type**

	2007	2008	2009	2010	2011	2012	2013	Total
<b>LIBOR scandal</b>	-	-	-	-	-	3	-	3
<b>Madoff scandal</b>	-	11	1	-	-	-	-	12
<b>Subprime Loan Crisis</b>	11	1	-	1	-	-	1	14
<b>Industry-wide events</b>	11	12	1	1	-	3	1	29
<b>Company-specific events</b>	2	3	2	5	3	3	3	21
<b>Total</b>	13	15	3	6	3	6	4	50

The sample of events chosen is also the subject of a descriptive analysis, in order to clear even further the event selection procedure that was explained in the methodology section. Table 3 presents the events selected throughout the years 2007-2013. As it can be noted, years 2007 and

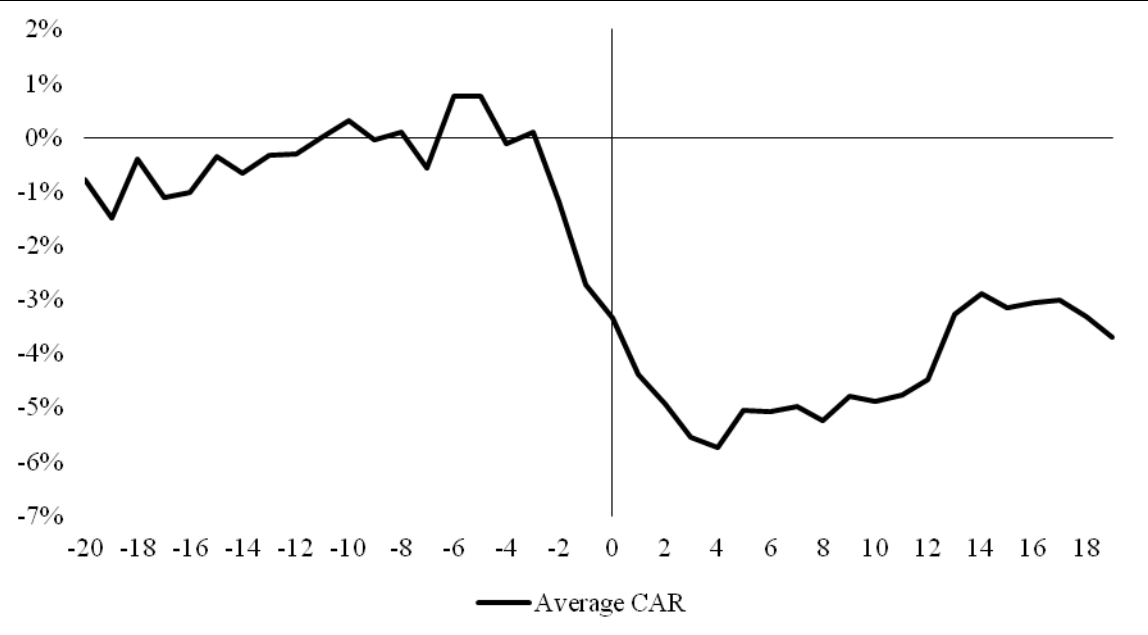
2008 register the highest number of negative reputational events (13 and 15 respectively). This is due to two major scandals affecting the banking sector over those years, namely the subprime loan crisis and the Madoff scandal. However, a fair representation of the subsequent years (2009-2013) can also be observed (3, 6, 3, 6 and 4 events respectively). Additionally, table 4 differentiates the events into two separate types based on the nature of the event. The first type includes industry-wide events that affected the whole banking industry and amount to 29 events (58 % of the sample). Events of this first type include the subprime loan crisis, the Madoff scandal and the Libor scandal. What is interesting with these events is their effect on more than one company in the sample. On the other hand, the second type refers to company-specific events that include cases of money laundering, fraud and internal control system failures and accounted for 21 events (42 % of the sample).

## 6.2 EVENT STUDY RESULTS

### 6.2.1 OVERALL IMPACT OF THE NEGATIVE EVENTS

Before analysing the results of the event study with a focus on the CSR scores of the different companies, a presentation of the overall impact of the negative events included in the sample will precede.

**Graph 1: Total average CAR**



Graph 1 depicts the average CAR for all events included in the sample within the initial wide window (-20, +20). As explained in the event study methodology, the current graph was used as a basis for narrowing down the event window to (-3, +4), in order to fully capture the impact of the

negative events. In accordance with theory, the initial drop identified prior to the event date can be explained on the basis of an information leakage. Furthermore, the most important observation from the graph is that on average no substantial abnormal returns can be observed in the period preceding the event window (-3, +4). That reinforces the notion that the observed drop in the CAR can be attributed to the event included in the sample. Finally, the post-event window (+5, +20) implies that the results of the negative event seem to have a long term effect.

After the identification of the event window CAR were recalculated for the event window (-3, +4) as mentioned in the event study methodology. A one sample t-test was then performed in order to verify that the drop in CAR was significantly different from zero. The results from the test performed show a t-statistic of -5.521 significant at the 5 % level for CAR (-3, +4) and a t-statistic of -5.012 also significant at the 5 % level for CAR (-3, +1). The results of the t-test are furthermore corroborated by the one-sample Wilcoxon Signed Rank test which shows that the average CAR for both event windows (-3, +4) and (-3, +1) is different from zero at the 5 % significance. This can support the intuition from the graph above that negative reputational events included in the sample affect CAR significantly.

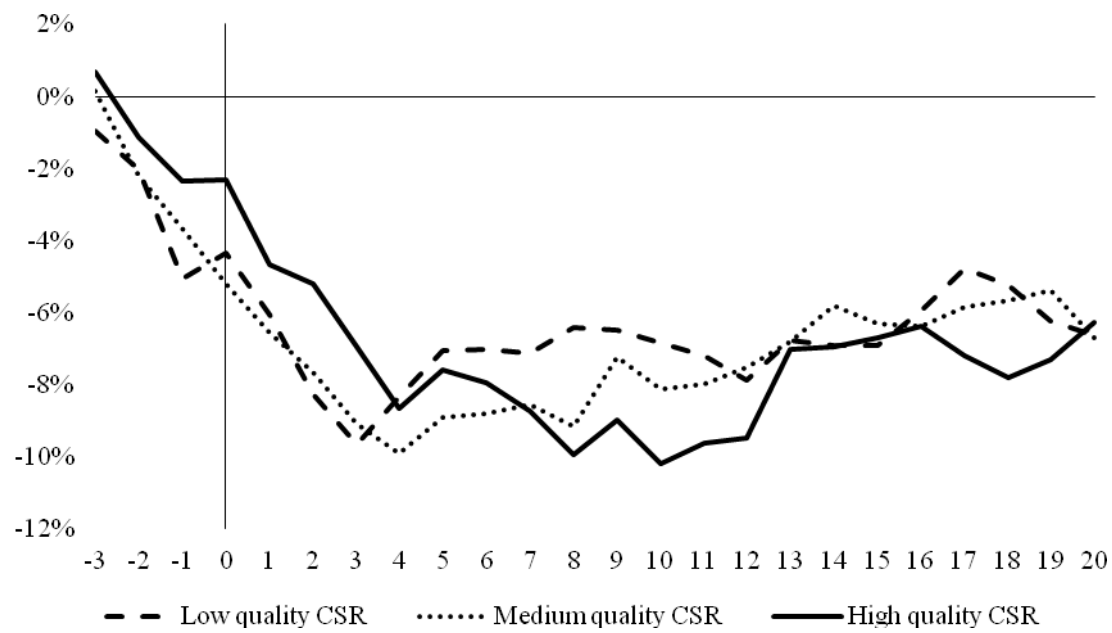
#### *6.2.2 THE EFFECT OF CSR REPORTING QUALITY ON CAR*

The effect of CSR reporting was analysed both within the event window and the post-event window (-3, +20). A post-event window (+5, +20) was selected in order to identify if superior CSR scores provide insurance for the firm on the basis of a quicker recovery. In order to achieve that, the sample was separated into three categories based on the CSR score ("low quality CSR", "medium quality CSR" and "high quality CSR") as explained in the methodology section.

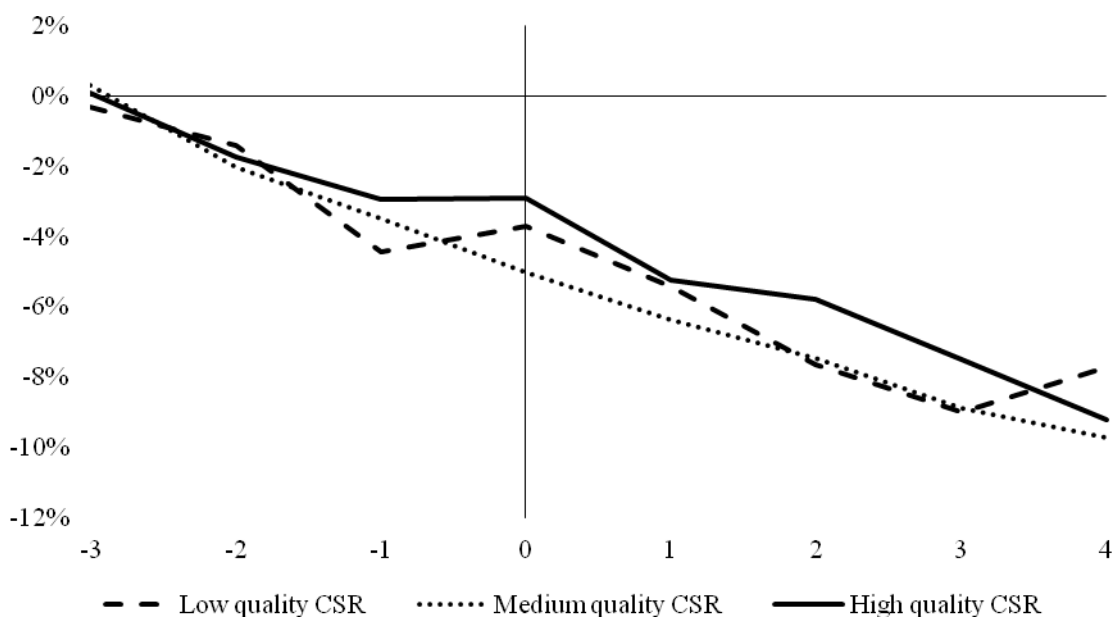
As can be observed in Graph 2, the results do not indicate the aforementioned hypothesis. In fact it seems that companies belonging in the "low quality CSR" present a somewhat quicker recovery that quickly fades away. However, strong results cannot be inferred since time constraints did not allow for a thorough examination of the post-event windows for all companies. Therefore, the possibility of other events occurring in the post-event window and distorting the results cannot be excluded. Rather, the focus will be placed in the period between (-3, +4).



**Graph 2: CAR for the three categories over event and post-event window**



**Graph 3: CAR for the three categories over event window**



Graph 3 depicts the CAR within the event window (-3, +4) based on the categorization of the sample as mentioned above. Although the results illustrate a smoother drop for the companies belonging to the “high quality CSR” category, the relatively small difference between the “high quality CSR” category and the other two categories does not seem to confirm the existence of an insurance effect.

**Table 4: CAR differences for CSR categories over event window**

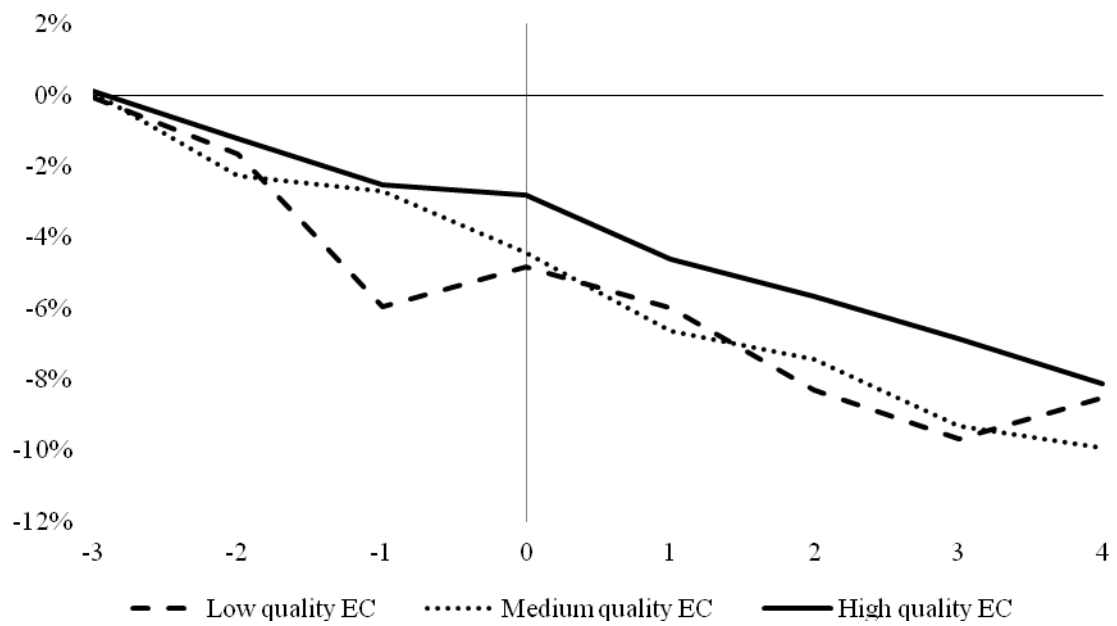
<b>t</b>	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>High quality CSR</b>	0,10%	-1,73%	-2,93%	-2,89%	-5,23%	-5,77%	-7,50%	-9,21%
<b>Medium quality CSR</b>	0,33%	-2,01%	-3,47%	-5,00%	-6,35%	-7,45%	-8,89%	-9,71%
<b>Low quality CSR</b>	-0,32%	-1,42%	-4,42%	-3,70%	-5,43%	-7,63%	-9,02%	-7,72%
<b>Difference (High-Low)</b>	0,41%	-0,31%	1,48%	0,81%	0,19%	1,86%	1,51%	-1,50%
<b>Difference (High-Medium)</b>	-0,23%	0,28%	0,54%	2,11%	1,12%	1,68%	1,39%	0,50%

Table 4 depicts the average CAR for all three categories for the period between (-3, +4), as well as the difference between “high quality CSR” and the other two categories. Table 4 also summarizes the results for average CAR in each day of the event window, in order to observe whether the choice of a different event window would change the results. As the differences are stretching between -1.5 % to 1.5 %, it seems that no strong evidence of insurance effect is stemming from the scores assigned on CSR reports. In fact in  $t = +4$  the CAR for the “low quality CSR” surpasses that of the “high quality CSR” (-1.5 %). This result is opposed to the insurance mechanism hypothesis. The overall results support the findings of Linthicum et al. (2010) and Godfrey et al.(2009) , who argued that, when the effects of negative reputational events were assessed based on the overall CSR, no significant results in support of the insurance effect of CSR could be found.

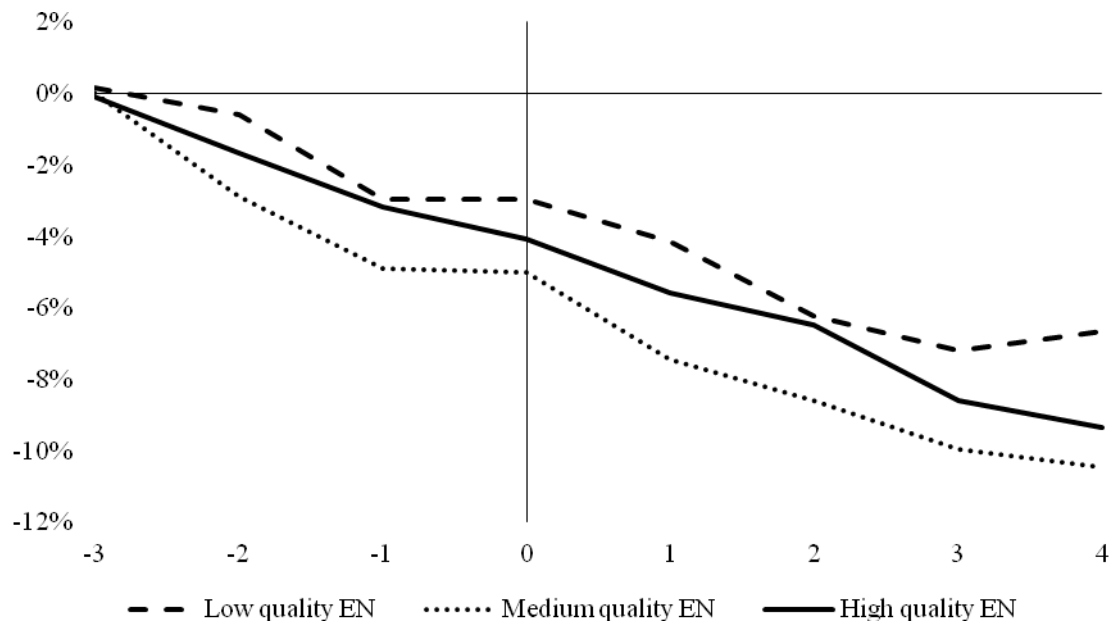
### *6.2.3 THE EFFECT OF THE DIFFERENT CSR DIMENSIONS ON CAR*

Although on an overall basis CSR does not seem to provide the insurance effects hypothesized, it remains interesting to explore whether the result will differentiate when assessing the CSR scores for the different dimensions (economic, environmental and social). The reason is that investors might weigh the CSR scores for different dimensions of CSR differently, based on the importance of each dimension for the banking sector. Indeed, as already seen in the literature review, it seems that the economic and social dimensions might be of increased importance as more relevant for the financial sector, as compared to the environmental dimension (GRI G3, 2011).

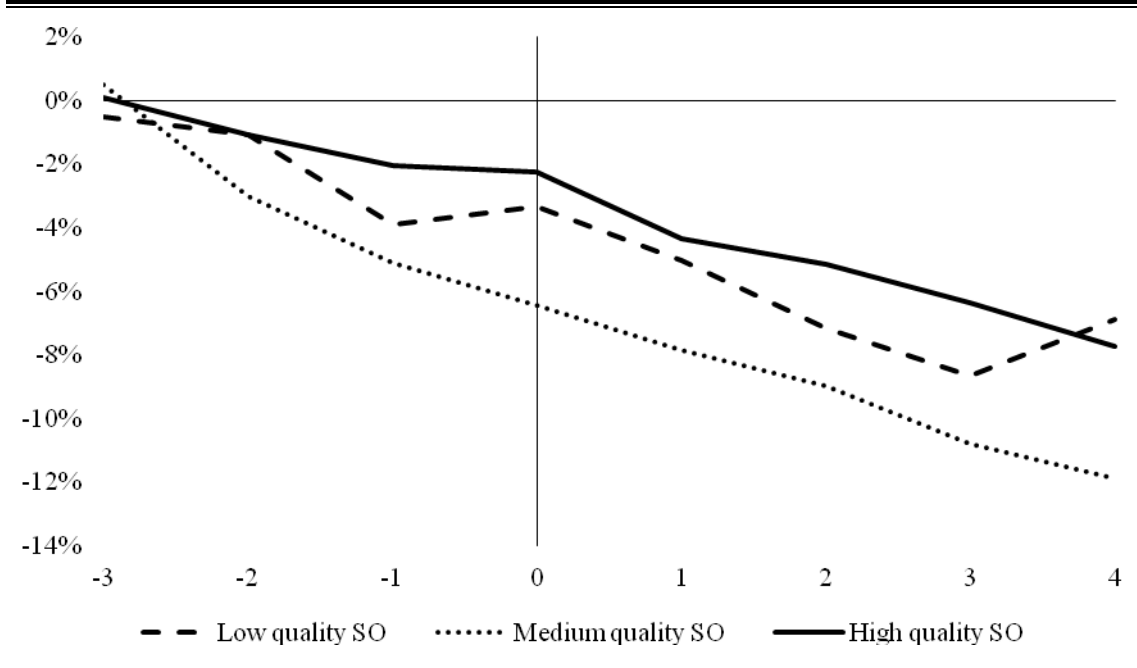
**Graph 4: CAR for the three categories (economic dimension)**



**Graph 5: CAR for the three categories (environmental dimension)**



**Graph 6: CAR for the three categories (social dimension)**



The results of the three graphs (Graph 4-Graph5-Graph 6) reveal that the economic dimension is the only one that renders the stronger results that agree with the insurance effect hypothesis, as opposed to the other dimensions that, either present weak evidence (Graph 6) or reject the insurance effect hypothesis (Graph 5). However, although on a relative basis the economic dimension presents results that better align with the insurance effect of CSR, on an standalone basis the results do not support the aforementioned notion.

### *SENSITIVITY CONSIDERATIONS*

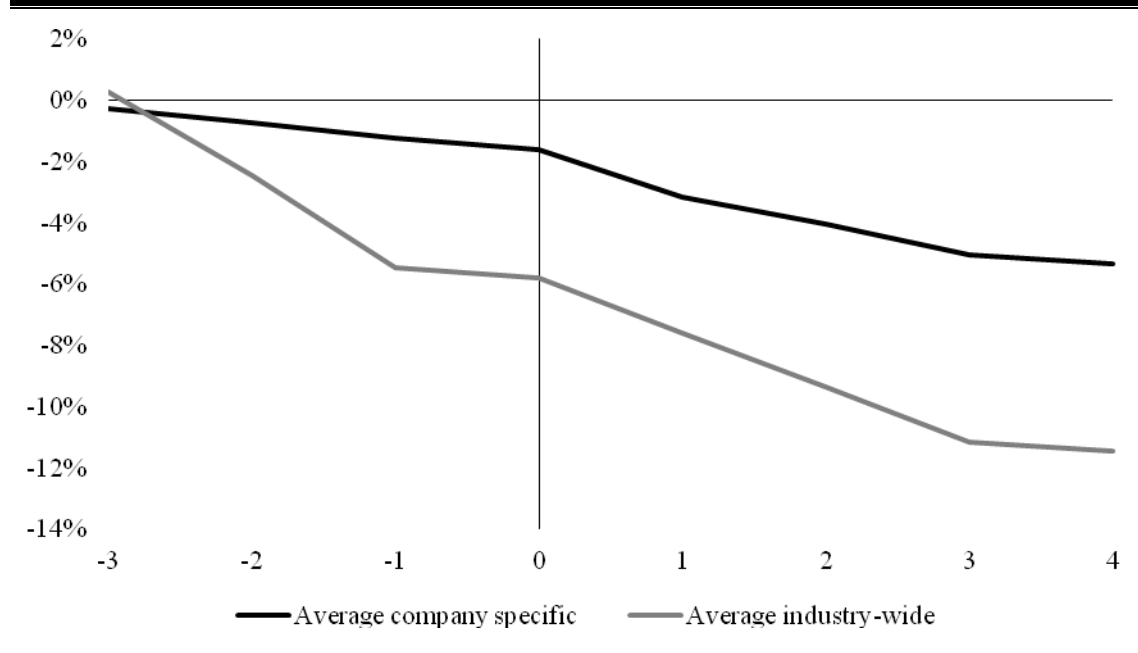
All the above graphs, depicting CAR based on the three different categories of CSR (“low quality CSR”, “medium quality CSR” and “high quality CSR”), were also calculated on a division of the sample based on the average CSR score, both for overall CSR scores and for the three different dimensions (economic, environmental and social). The reason for that selection was the need to have a simple separation of the sample that could act as a sensitivity check. The results did not prove materially different from the division showed above. Graphs for the average separation can be found in appendix 3 (graphs A, B, C, D).

### *6.2.4 CAR CALCULATION FOR SUBSAMPLES BASED ON EVENT TYPE*

Finally, it was interesting to conclude the event study results section, by investigating the impact of CSR reporting based on the different nature of reputational events. As already mentioned in the methodology, the events in the sample were separated into two distinct types (industry-wide and

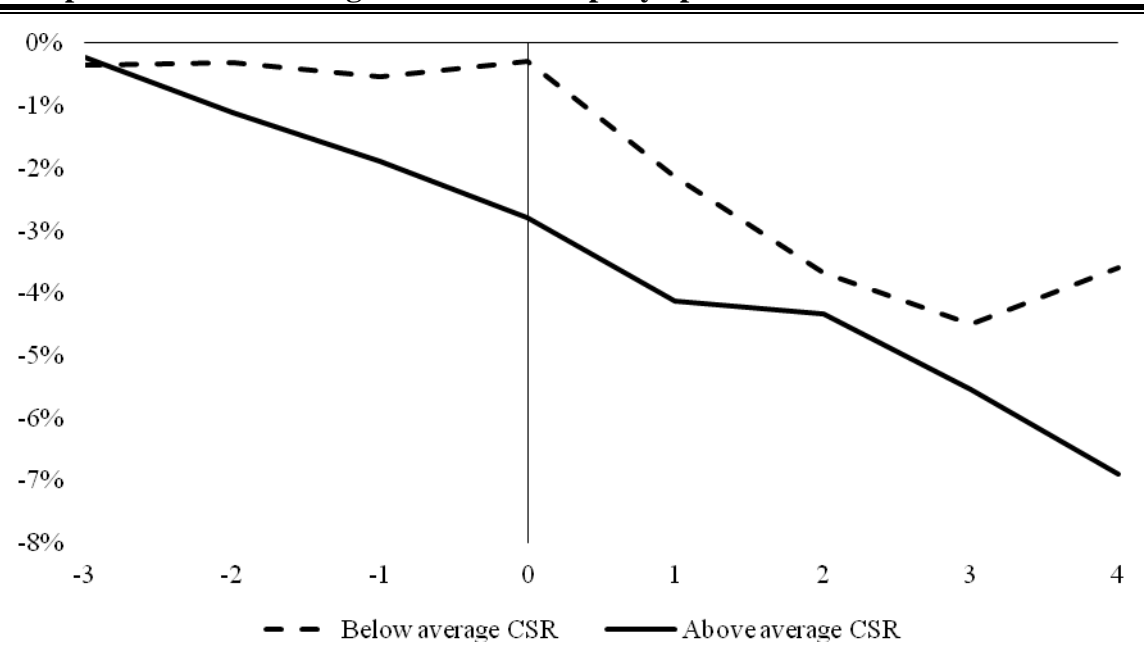
company-specific). In this case it would be interesting to explore if the hypothesized insurance effect of CSR is affected by the nature of the negative event.

**Graph 7: Average CAR based on event type**

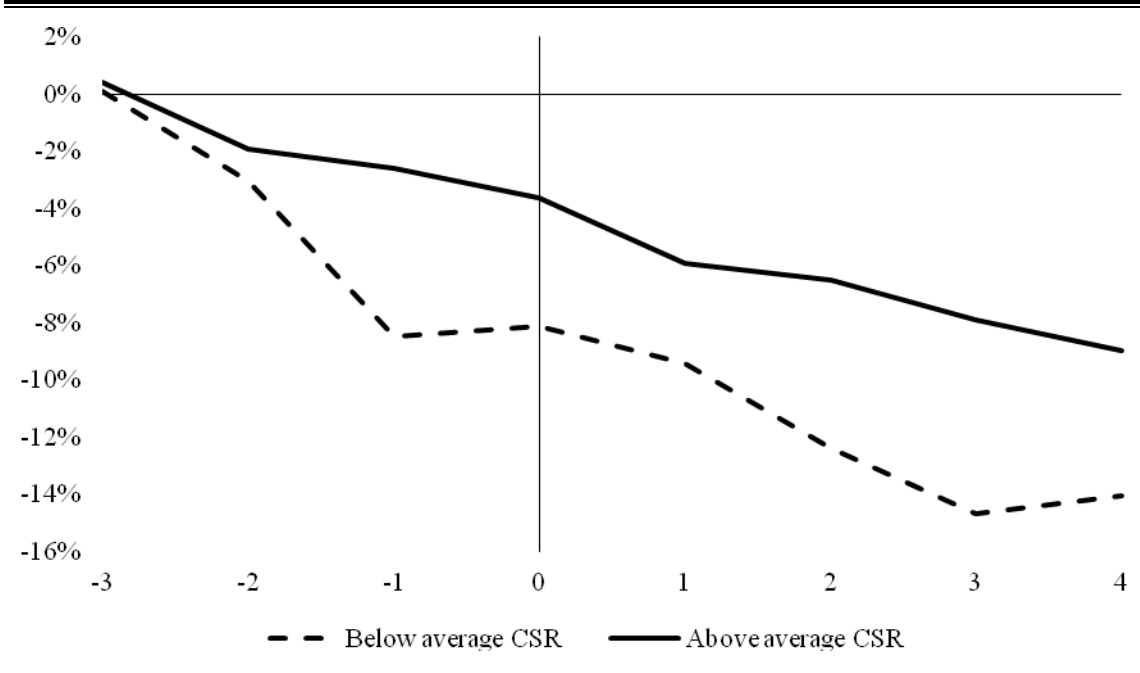


Before analysing the effect of CSR based on each event type, it is important to see if a certain category of event is linked with more severe share price effects. As it is reasonable to expect, industry-wide events have an impact of larger magnitude on CAR.

**Graph 8: CAR for average division – Company-specific events**



**Graph 9: CAR for average division – Industry-wide events**



Graphs 8 and 9 depict CAR calculations for the two categories of events based on the CSR quality of the firms. Since the sample was split between the two different categories (29 for industry-wide events and 21 for company-specific events), the observations for each graph are substantially lower. Therefore it was deemed more reasonable to separate the events into two groups (above average – below average) based on the CSR score. The results illustrate that the insurance effect of CSR appears to apply for industry-wide events, while for company-specific events the hypothesis should be rejected. However, due to the relatively small size of the sample for the two types of events, it is important to highlight that average CAR are heavily influenced by the individual observations. Therefore although the results render a clearer view their explanatory value is substantially lower.

In the following section, a regression analysis of the findings will be performed on the basis of all the different categorizations used (CSR individual score, CSR categories and CSR average division).

## 6.3 REGRESSION ANALYSIS RESULTS

### 6.3.1 PEARSON CORRELATION MATRIX

As explained in the methodology section, the results from the event study were statistically tested. An initial discussion on the correlation between the different variables included in the regressions performed is deemed important (table 5).

**Table 5: Pearson correlation matrix**

	<b>CAR (-3,+4)</b>	<b>CAR (-3,+1)</b>	<b>CSR</b>	<b>CSRcat</b>	<b>CSRav</b>	<b>EC</b>	<b>ECcat</b>	<b>ECav</b>	<b>EN</b>	<b>ENcat</b>	<b>ENav</b>	<b>SO</b>	<b>SOcat</b>	<b>SOav</b>	<b>EVENT</b>	<b>SIZE</b>	<b>MtoB</b>	<b>ROIC</b>	<b>CRISIS</b>
<b>CAR (-3,+4)</b>	1																		
<b>CAR (-3,+1)</b>	.891***	1																	
<b>CSR</b>	-.042	.054	1																
<b>CSRcat</b>	-.058	.001	.917***	1															
<b>CSRav</b>	.043	.040	.798***	.784***	1														
<b>EC</b>	.016	.097	.893***	.827***	.742***	1													
<b>ECcat</b>	.008	.037	.824***	.795***	.732***	.927***	1												
<b>ECav</b>	.104	.137	.711***	.680***	.680***	.797***	.784***	1											
<b>EN</b>	-.039	.027	.785***	.664***	.549***	.630***	.578***	.432***	1										
<b>ENcat</b>	-.132	-.101	.665***	.624***	.470***	.497***	.419***	.261*	.833***	1									
<b>ENav</b>	-.056	-.046	.637***	.627***	.440***	.415***	.366***	.200	.740***	.784***	1								
<b>SO</b>	-.051	.046	.952***	.900***	.790***	.830***	.768***	.696***	.573***	.501***	.527***	1							
<b>SOcat</b>	-.091	-.019	.899***	.932***	.784***	.815***	.795***	.680***	.520***	.488***	.523***	.947***	1						
<b>SOav</b>	-.036	-.019	.733***	.680***	.840***	.697***	.680***	.600***	.319**	.314**	.280**	.816***	.784***	1					
<b>EVENT</b>	-.258*	-.235	-.056	-.080	.041	-.014	-.028	-.041	-.103	-.133	-.122	-.034	.028	.122	1				
<b>SIZE</b>	.007	.031	.151	.001	-.092	.115	.072	.021	.265*	.001	-.009	.075	-.018	-.052	.109	1			
<b>MtoB</b>	.311**	.225	-.356**	-.413***	-.322**	-.274*	-.343**	-.241*	-.185	-.119	-.054	-.399***	-.386***	-.243*	.010	.045	1		
<b>ROIC</b>	.237*	.103	-.117	-.067	-.044	-.047	-.070	.029	-.123	-.003	-.072	-.112	-.051	.030	.002	-.032	.288**	1	
<b>CRISIS</b>	-.202	-.270*	-.130	-.139	-.081	-.020	-.034	.082	-.217	-.192	-.161	-.092	-.034	-.081	.552***	.030	.315**	.293**	1

\* Significant at the 10 % level. \*\* Significant at the 5 % level. \*\*\* Significant at the 1 % level. (2-tailed)

A first observation from the Pearson correlation matrix worth mentioning is the highly positive and significant correlation between the variables of CSR. The correlations of the separate dimensions of CSR with the overall CSR score ( $CSR_{it}$ ) are: 89.3 % for the economic dimension, 78.5 % for the environmental dimension and 95.2 % for the social dimension. For what concerns the correlation among the separate dimensions, the highest correlation is presented by the economic-social combination with 83.0 %. The environmental dimension has a smaller correlation with the other dimensions, namely 63.0 % with the economic and 57.3 % with the social dimension. This seems to be in line with what was suggested in the section on financial institutions, namely that the environmental dimension would play a more marginal role within the banking sector, as compared to the other two dimensions.

A second observation from the Pearson correlation table concerns the correlation coefficient between the CSR score and the event type categorization. As noted in the previous section, industry-wide events prove to have on average a more severe effect on CAR than company-specific events.<sup>17</sup> An issue that could arise in this case and undermine the possibility of identifying a potential insurance effect is a high correlation between  $CSR_{it}$  and the  $EVENT_{it}$  variable. That would imply an accidental association between more severe scandals and high scores of CSR that would make impossible to detect any insurance effect. From the correlation matrix, it can be however noted that the event type is practically non-correlated with the CSR score (-5.6 %) and non significant), thus resolving the discussed issue for the present thesis.

### 6.3.2 THE IMPACT OF CSR AND ITS DIMENSIONS ON CAR

In tables 6 and 7, results from the regressions performed are presented. The tables are structured in a way that shows results for both event windows (-3, +4 and -3, +1) and for both CSR score (and EC, EN, SO scores), as shown by the column “individual score”, and CSR category (or EC, EN, SO categories), as shown by the column “category”. Results for the average division, as proposed in the methodology section, are shown in appendix 3, table E.

The base case regression (formula below) displayed in the table shows that CSR score has practically no effect (0.0003) on CAR (-3, +4) and no statistical significance for the variable can be found.

$$CAR_{it} = \alpha + \beta_{CSR} CSR_{it} + \beta_{SIZE} SIZE_{it} + \beta_{MtoB} MtoB_{it} + \beta_{ROIC} ROIC_{it} + \beta_{CRISIS} CRISIS_t + \varepsilon_{it}$$

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<sup>17</sup> This is in line with the fact that the  $EVENT_{it}$  variable takes the value of 0 for company specific events (less severe on average) and the value of 1 for industry-wide events, as explained in the methodology section.



Even when the CSR category division is used (“low quality CSR”, “medium quality CSR” and “high quality CSR”), results do not differ substantially. In this case a slightly more positive relationship can be observed (0.0097) but again no significance can be found. Overall, the outcomes presented in table 6 cannot support the hypothesis of the insurance role of CSR, in line with the graphical representation presented in the event study results. For what concerns control variables, it is interesting to note that SIZE does not seem to affect CAR in any particular direction, since coefficients are always close to zero and the sign varies among the regressions run. MtoB and ROIC seem, on the other hand, to have a positive effect on CAR with MtoB presenting more positive coefficients and stronger statistical significance. This is in line with the idea that firms with higher market to book value and higher profitability levels would suffer relatively less from a bad reputational event. In the specific, firms with low market to book levels are more likely to be close to financial distress and therefore a negative event would cause different and greater concerns for these firms than for firms with high market to book value. Moreover, firms with high profitability can be considered in a better condition to face negative reputational events than firms with low profitability and therefore negative stock reactions could be expected to be smoother. Lastly, CRISIS exhibits coefficients that are negative and significant at the 1 % level, potentially due to the fact that negative events happening in crisis scenarios would cause greater negative reactions due to the higher overall uncertainty.

**Table 6: Regression results – CSR**

<b>CAR (-3,+4)</b>	<b>Individual score Coefficient (<i>t</i>-statistic)</b>	<b>Category Coefficient (<i>t</i>-statistic)</b>	<b>CAR (-3,+1)</b>	<b>Individual score Coefficient (<i>t</i>-statistic)</b>	<b>Category Coefficient (<i>t</i>-statistic)</b>
<b>CSR</b>	0.0003 (0.5377)	0.0097 (0.4580)	<b>CSR</b>	0.0005 (1.0036)	0.0106 (0.6797)
<b>SIZE</b>	-0.0002 (-0.0188)	0.0007 (0.0672)	<b>SIZE</b>	0.0005 (0.0656)	0.0018 (0.2308)
<b>MtoB</b>	0.0649** (2.6025)	0.0650** (2.5403)	<b>MtoB</b>	0.0436* (2.3841)	0.0425* (2.2520)
<b>ROIC</b>	0.0158* (1.7715)	0.0155* (1.7351)	<b>ROIC</b>	0.0061 (0.9308)	0.0058 (0.8764)
<b>CRISIS</b>	-0.0876*** (-2.7458)	-0.0876*** (-2.7437)	<b>CRISIS</b>	-0.0656*** (-2.8034)	-0.0657*** (-2.7915)
<b>Intercept</b>	-0.1570 (-0.7140)	-0.1668 (-0.7533)	<b>Intercept</b>	-0.1163 (-0.7215)	-0.1267 (-0.7763)
<i>N</i>	50	50	<i>N</i>	50	50
<i>R-square</i>	0.2544	0.2531	<i>R-square</i>	0.2135	0.2039
<i>Model F value</i>	3.0025	2.9814	<i>Model F value</i>	2.3894	2.2538

\* Significant at the 10 % level. \*\* Significant at the 5 % level. \*\*\* Significant at the 1 % level.

**Table 7: Regression results – Economic, environmental and social dimensions**

<b>CAR (-3,+4)</b>	<b>Individual score Coefficient (t-statistic)</b>	<b>Category Coefficient (t-statistic)</b>	<b>CAR (-3,+1)</b>	<b>Individual score Coefficient (t-statistic)</b>	<b>Category Coefficient (t-statistic)</b>
<b>EC</b>	0.0033 (0.9588)	0.0230 (1.1308)	<b>EC</b>	0.0036 (1.4102)	0.0167 (1.1100)
<b>SIZE</b>	-0.0005 (-0.0492)	-0.0003 (-0.0266)	<b>SIZE</b>	0.0005 (0.0619)	0.0011 (0.1449)
<b>MtoB</b>	0.0670*** (2.7566)	0.0702*** (2.8320)	<b>MtoB</b>	0.0446** (2.5091)	0.0445** (2.4292)
<b>ROIC</b>	0.0155* (1.7565)	0.0156* (1.7681)	<b>ROIC</b>	0.0058 (0.9002)	0.0059 (0.9092)
<b>CRISIS</b>	-0.0899*** (-2.8333)	-0.0907*** (-2.8670)	<b>CRISIS</b>	-0.0682*** (-2.9408)	-0.0681*** (-2.9097)
<b>Intercept</b>	-0.1549 (-0.7096)	-0.1623 (-0.7461)	<b>Intercept</b>	-0.1137 (-0.7131)	-0.1194 (-0.7421)
<i>N</i>	50	50	<i>N</i>	50	50
<i>R-square</i>	0.2649	0.2707	<i>R-square</i>	0.2303	0.2174
<i>Model F value</i>	3.1705	3.2663	<i>Model F value</i>	2.6333	2.4453
<b>EN</b>	-0.0005 (-0.2353)	-0.0254 (-1.3147)	<b>EN</b>	0.0000 (0.0308)	-0.0157 (-1.0954)
<b>SIZE</b>	0.0016 (0.1420)	0.0010 (0.0981)	<b>SIZE</b>	0.0019 (0.2274)	0.0021 (0.2648)
<b>MtoB</b>	0.0596** (2.5106)	0.0579** (2.5019)	<b>MtoB</b>	0.0374** (2.1332)	0.0359** (2.0845)
<b>ROIC</b>	0.0157* (1.7592)	0.0167* (1.8968)	<b>ROIC</b>	0.0061 (0.9179)	0.0066 (1.0135)
<b>CRISIS</b>	-0.0893*** (-2.7505)	-0.0954*** (-2.9917)	<b>CRISIS</b>	-0.0660*** (-2.7473)	-0.0707*** (-2.9820)
<b>Intercept</b>	-0.1618 (-0.7289)	-0.1322 (-0.6090)	<b>Intercept</b>	-0.1140 (-0.6948)	-0.1000 (-0.6198)
<i>N</i>	50	50	<i>N</i>	50	50
<i>R-square</i>	0.2504	0.2779	<i>R-square</i>	0.1956	0.2169
<i>Model F value</i>	2.9403	3.3861	<i>Model F value</i>	2.1392	2.4373
<b>SO</b>	0.0007 (0.7160)	0.0083 (0.3983)	<b>SO</b>	0.0009 (1.2048)	0.0118 (0.7695)
<b>SIZE</b>	0.0001 (0.0064)	0.0007 (0.0625)	<b>SIZE</b>	0.0010 (0.1279)	0.0017 (0.2171)
<b>MtoB</b>	0.0674** (2.6543)	0.0644** (2.5150)	<b>MtoB</b>	0.0460** (2.4800)	0.0431** (2.2905)
<b>ROIC</b>	0.0157* (1.7744)	0.0156* (1.7455)	<b>ROIC</b>	0.0060 (0.9324)	0.0058 (0.8843)
<b>CRISIS</b>	-0.0888*** (-2.7897)	-0.0891*** (-2.7785)	<b>CRISIS</b>	-0.0671*** (-2.8824)	-0.0677*** (-2.8694)
<b>Intercept</b>	-0.1680 (-0.7635)	-0.1633 (-0.7387)	<b>Intercept</b>	-0.1296 (-0.8056)	-0.1253 (-0.7707)
<i>N</i>	50	50	<i>N</i>	50	50
<i>R-square</i>	0.2581	0.2522	<i>R-square</i>	0.2212	0.2062
<i>Model F value</i>	3.0621	2.9678	<i>Model F value</i>	2.4998	2.2862

\* Significant at the 10 % level. \*\* Significant at the 5 % level. \*\*\* Significant at the 1 % level.

When the three dimensions (economic, environmental and social) are regressed separately against CAR, the economic variable presents the highest coefficient (0.0033) with the social dimension registering a coefficient of 0.0007 and the environmental variable showing a slightly negative value (-0.0005) (table 7). These are anyhow small variations from the 0.0003 effect found for the overall CSR score and none of the coefficients provides statistical significance. This cannot provide evidence for the hypothesis of an insurance effect linked to any of the three dimensions and it does not seem to reflect the speculation that any of the three dimensions would impact CAR to a greater extent than the other two dimensions.

### *SENSITIVITY CONSIDERATIONS*

In order to further validate the results, the regressions were also run using a shorter event window (-3, +1). As shown by the right side of the tables, results do not change substantially with respect to the regression based on CAR (-3, +4). All models using CAR (-3, +4) outperform, in terms of the  $R^2$  values, their respective comparable model using CAR (-3, +1). In fact, for models explaining CAR (-3, +4), the  $R^2$  is always in the range of 25.04 % - 27.79 %, while the  $R^2$  for models explaining CAR (-3, +1) varies between 19.56 % and 23.03 %.<sup>18</sup>

A second important variation explored was explained in the methodology section in order to verify the impact of clustering events on the results of the study. Results for the regressions explaining CAR (-3, +4) based on the reduced sample are shown in appendix 3, table F. Although the power of the model suffers from the exclusion of such events in terms of both F-values and R-squared, coefficients for CSR do not differ substantially from the ones obtained through full sample regressions. Namely, “CSR individual score” exhibits a non significant coefficient of 0.0001 and “CSR category” presents a coefficient of 0.0118 with no statistical significance. It can therefore be concluded that the variations explored in terms of event window and sample definition support the initial findings, thus providing no evidence for the hypothesis of an insurance effect of CSR.

#### *6.3.3 REGRESSIONS RUN ON SUBSAMPLES BASED ON EVENT TYPE*

To conclude, additional regressions were estimated on the two subsamples based on the two event types (company-specific and industry-wide). The reasoning behind not using the  $EVENT_{it}$  variable as a control variable in the regressions above is the following. Although events of the first type have on average a smaller impact on CAR, as shown in graph 8 of the previous section, it would be

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<sup>18</sup> It is important to note that Wooldridge (2004) points out the fact that R-squared can sometimes be misleading. The author argues that the mere use of larger samples leads to an increase in R-squared, even when no actual improvements in the model take place.

conceptually wrong to assign a value of 0 to all company-specific events, since the magnitude of the single event cannot be determined. Therefore, this variable was used in order to create two separate subsamples.

**Table 8: Regression results – Event type subsamples**

<b>Company-specific</b>	<b>Individual score</b>	<b>Average division</b>	<b>Industry-wide</b>	<b>Individual score</b>	<b>Average division</b>
	Coefficient	Coefficient		Coefficient	Coefficient
<b>CAR (-3,+4)</b>	( <i>t</i> -statistic)	( <i>t</i> -statistic)		( <i>t</i> -statistic)	( <i>t</i> -statistic)
<b>CSR</b>	-0.0008	-0.0268	<b>CSR</b>	0.0011	0.0678
	(-0.9466)	(-0.5631)		(0.9680)	(1.4648)
<b>SIZE</b>	0.0094	0.0089	<b>SIZE</b>	-0.0059	0.0003
	(0.7064)	(0.6571)		(-0.3278)	(0.0173)
<b>MtoB</b>	0.0035	0.0258	<b>MtoB</b>	0.0664**	0.0694**
	(0.0579)	(0.4696)		(2.1198)	(2.2680)
<b>ROIC</b>	0.0057	0.0065	<b>ROIC</b>	0.0252	0.0245
	(0.5626)	(0.6214)		(1.6208)	(1.6111)
<b>CRISIS</b>	-0.0108	-0.0191	<b>CRISIS</b>	-0.1037	-0.0915
	(-0.1989)	(-0.3503)		(-1.6459)	(-1.4656)
<b>Intercept</b>	-0.2150	-0.2595	<b>Intercept</b>	-0.0894	-0.2086
	(-0.7676)	(-0.9295)		(-0.2520)	(-0.6075)
<i>N</i>	21	21	<i>N</i>	29	29
<i>R-square</i>	0.1730	0.1417	<i>R-square</i>	0.2984	0.3321
<i>Model F value</i>	0.6276	0.4954	<i>Model F value</i>	1.9561	2.2871

\* Significant at the 10% level. \*\* Significant at the 5% level. \*\*\* Significant at the 1% level.

Table 8 shows the results for the regression run. In line with what is observed in the graphs of the previous section, CSR individual scores have a slightly positive impact (0.0011) on CAR (-3, +4) for the industry-wide subsample, while they show a slightly negative impact (-0.0008) for the company-specific subsample. An additional regression for the two subsamples was run using CSR<sub>av<sub>it</sub></sub> (the division of CSR scores in two groups, below and above average) and the coefficients obtained show a stronger relationship (0.0678 for the industry-wide subsample and -0.0268 for the company-specific subsample). However, it is important to note that no statistical significance can be observed, maybe due to the limited size of the samples (21 for company-specific and 29 for industry-wide). This scenario hints at the idea that the hypothesis of an insurance effect could be observed in the case of industry-wide events, while in a company-specific type of event the relationship seems to be reversed, with the consequent rejection of the insurance hypothesis.

## 7. DISCUSSION AND CONCLUSION

### 7.1 DISCUSSION AND IMPLICATIONS

The overall outcome of the event study cannot support the notion that CSR performance, as reflected by CSR reporting, can signal ethical behaviour and therefore act as an insurance mechanism protecting the value of the firm. The results presented in the previous section point out that, both in terms of overall CSR and separate CSR dimensions (economic, environmental and social), the quality of reporting, as scored through the proposed grading framework, cannot significantly support the idea of the insurance effects of CSR.

Results seem to agree with the findings of Linthicum et al. (2010) and partially with those of Godfrey et al. (2009), who argue that on an overall basis CSR does not appear to mitigate the effect of an adverse reputational event. Specifically, the findings seem to support the argument that investors do not use CSR reporting as a means of assessing the management of the firm when determining their reaction to a negative event. However, as stated by Peloza (2006), management seems to expect certain insurance gains against adverse reputational events when deciding whether and how to engage in CSR activities. This discrepancy can be partially attributed to the difficulty of measuring the insurance effect of CSR, given the unique nature of the assets insured. That difficulty might lead to companies deciding to engage in CSR reporting under the expectation of having insurance gains as those could only be determined ex-post.

Another explanation for these results can be detected in the choice of industry. Although the banking sector is a reputation intensive industry and therefore a signal of ethical behaviour through CSR reporting should be deemed important, it can be argued that this industry is not linked with an intense environmental or social footprint (GRI FSSS, 2011). That could be an indication as to whether the value of CSR reporting as an insurance mechanism is only limited within industries where the environmental impact is considered of high importance (Blacconiere and Patten, 1994) and cannot be generalized to other industries.

Finally, it is important to recall the discussion already laid out in the theoretical section as to whether investors attribute significance on CSR disclosures. The insurance effect reasoning laid down in the introduction of this thesis and elaborated throughout the paper heavily relies on the idea that investors would deem CSR information relevant inasmuch it provides them with insights on the quality of management. The findings of this thesis could therefore hint to an alignment with researchers arguing that investors do not consider CSR reporting material for their decision-making

process (Slack and Campbell, 2008). The findings from this thesis could be seen as a sign of investors rejecting the notion that CSR performance can act as a signal of ethical behaviour and therefore good management. A slightly different perspective on this view could be found in what already discussed for third parties' CSR ratings. Namely, investors will have to assign a value on ethical behaviour based on individual perceptions and definitions of ethicality which can significantly vary from individual to individual. This could in turn result in a weaker linkage between CSR performance and good management, which is a basic assumption of the insurance effect of CSR.

### *LIMITATIONS*

As with any other research, the present thesis also suffers from certain limitations which might restrict the explanatory value of the results. The choice to develop a grading mechanism in order to assess the quality of CSR disclosures creates a twofold problem. On the one hand, it limited the sample of negative events (50) due to time constraints, which could result in relevantly weaker inferences as opposed to what a larger sample could have rendered. On the other hand, although all reasonable effort was made to limit potential bias, as explained in the grading methodology, this cannot be fully eradicated. In fact, this bias would not be extinct if a different methodological approach was followed, such as third parties' CSR ratings, due to the limited transparency in their procedures.

Additionally, although the choice of investigating the insurance effect of CSR reporting through an event study was deemed the most appropriate approach, it entails its own limitations (McWilliams and Siegel, 1997). The drawbacks of the aforementioned methodological approach were thoroughly discussed in the event study methodology section.

Finally, time constraints did not allow for a thorough investigation of the post-event window in order to examine the possibility of CSR reporting having more long term insurance effects in the sense of a quicker recovery. Although the initial results suggested that this idea does not hold, a more solid inference would require a thorough analysis of the post-event window in order to eliminate the existence of additional events distorting the results.

## **7.2 CONCLUSION**

The present thesis has investigated the potential of CSR, as reflected by CSR disclosure, to act as an insurance mechanism in the aftermath of a negative reputational event. In order to tackle this question a two-step approach was applied to a sample of 50 negative reputational events affecting

European banks in the period 2007-2013. First, a grading framework was developed in order to assess the quality of CSR disclosures in a way that could establish a relationship between CSR communication and CSR performance. Second, an event study was performed on the identified sample of negative events, in order to investigate whether higher scores from the grading framework would result in a smoother drop in cumulative abnormal returns (CAR).

Results provide no evidence for high quality CSR having a positive effect in the aftermath of a negative reputational event, thus not supporting the hypothesis on the value of CSR as an insurance mechanism for the reputation of the firm. The thesis further investigated the single dimensions of CSR (economic, environmental and social) on a separate basis in order to determine their specific impact on the drop in CAR and, also in this case, results did not render any statistical significance.

The overall idea is that the present thesis cannot support the hypothesis of CSR providing companies within the financial industry with an insurance mechanism. Nevertheless, although no evidence could be found on the insurance effect of CSR, no inferences on the value relevance of CSR for shareholders as a whole can be formulated. In fact, as outlined in the theoretical background, part of the research on the effects of CSR on profitability and cost of equity has pointed towards a value relevance conclusion. Moreover, reasons for companies to engage in CSR activities and report them can stem from more stakeholder oriented types of considerations that, if not taken into account, could in turn affect shareholders. Therefore, it is deemed important to stress that the implication of this thesis relate specifically to the hypothesised insurance effect of CSR with partial inferences on the materiality that investors could place on CSR information.

### *SUGGESTIONS FOR FURTHER RESEARCH*

The present thesis will be concluded by providing suggestions for further research stemming from the study and its findings.

The first evident aspect that could further corroborate the results from this thesis is the application of the formulated grading framework to a larger sample, in order to achieve stronger significant results. Specifically, it could be interesting to apply the grading framework to environmentally intensive industries or industries with a great exposure to ethical risks (e.g. operations in developing countries), where an insurance effect of CSR could be deemed more crucial.

A second interesting area, only partially uncovered in the present thesis, relates to the findings on the subsamples based on event type (company-specific vs. industry-wide), where the nature of the event seemed to play a specific role with regards to the insurance value of CSR. Focusing further

research on events affecting a whole industry might render clearer results in order to draw inferences on the insurance hypothesis. From the, although weak, findings from the present thesis it can be, in fact, hypothesized that for those types of events CSR would have a positive impact in the aftermath of an adverse event.

To conclude, the grading framework as main contribution of this thesis could be the object of further testing, in order to better appreciate its value. Example of these could be studies on the relation between scores resulting from the framework and other firm characteristics traditionally considered to play a role in companies CSR performance, such as visibility, financial performance in terms of profitability and so forth. Moreover, the comparison between the present framework and other proxies of CSR performance identified in literature (e.g. third parties' ratings and reputational indexes) could be interesting, in order to explore whether patterns could be identified.



## REFERENCES

- Abbott, W. F., & Monsen, R. J. (1979). On the measurement of corporate social responsibility: Self-reported disclosures as a method of measuring corporate social involvement. *Academy of Management Journal*, 22(3), 501-515.
- Akerlof, G. A. (1970). The market for 'lemons': Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488-500.
- Al-Tuwaijri, S. A., Christensen, T. E., & Hughes II, K. E. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society*, 29(5-6), 447-471.
- Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 17(2), 223-249.
- Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal*, 28(2), 446-463.
- Bassen, A., Hölz, H., & Schlange, J. (2006). The influence of corporate responsibility on the cost of capital: An empirical analysis. Hamburg: Schlange & Co, Universität Hamburg, Deutsche Bank. *Working Paper*.
- Bauer, R., Koedijk, K., & Otten, R. (2005). International evidence on ethical mutual fund performance and investment style. *Journal of Banking and Finance*, 29(7), 1751-1767.
- Blaconiere, W. G., & Patten, D. M. (1994). Environmental disclosures, regulatory costs, and changes in firm value. *Journal of Accounting and Economics*, 18(3), 357-377.
- Bowen, H. R. (1953). *Social responsibilities of the businessman*. New York: Harper & Brothers.
- Branco, M. C., & Rodrigues, L. L. (2006). Communication of corporate social responsibility by portuguese banks: A legitimacy theory perspective. *Corporate Communications*, 11(3), 232-248.
- Brenner, M. (1979). The sensitivity of the efficient market hypothesis to alternative specifications of the market model. *The Journal of Finance*, 34(4), 915-929.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14(1), 3-31.
- Campbell, J. Y., Lo, A. W., MacKinlay, A. C., & Whitelaw, R. F. (1998). The econometrics of financial markets. *Macroeconomic Dynamics*, 2(04), 559-562.

- Carnevale, C., Mazzuca, M., & Venturini, S. (2012). Corporate social reporting in european banks: The effects on a firm's market value. *Corporate Social Responsibility and Environmental Management*, 19(3), 159-177.
- Carnevale, C., & Mazzuca, M. (2014). Sustainability report and bank valuation: Evidence from european stock markets. *Business Ethics: A European Review*, 23(1), 69-90.
- Chava, S. (2010). Socially responsible investing and expected stock returns. Georgia Institute of Technology. *Working Paper*.
- Cho, S. Y., Lee, C., & Pfeiffer Jr., R. J. (2013). Corporate social responsibility performance and information asymmetry. *Journal of Accounting and Public Policy*, 32(1), 71-83.
- Clarke, J., & Gibson-Sweet, M. (1999). The use of corporate social disclosures in the management of reputation and legitimacy: A cross sectoral analysis of UK top 100 companies. *Business Ethics: A European Review*, 8(1), 5-13.
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, 33(4), 303-327.
- Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosures—a theoretical foundation. *Accounting, Auditing & Accountability Journal*, 15(3), 282-311.
- Deegan, C., & Rankin, M. (1997). The materiality of environmental information to users of annual reports. *Accounting, Auditing & Accountability Journal*, 10(4), 562-583.
- Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *Accounting Review*, 86(1), 59-100.
- Douglas, A., Doris, J., & Johnson, B. (2004). Corporate social reporting in irish financial institutions. *TQM Magazine*, 16(6), 387-395.
- El Ghouli, S., Guedhami, O., Kwok, C. C. Y., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking and Finance*, 35(9), 2388-2406.
- Epstein, M. J., & Freedman, M. (1994). Social disclosure and the individual investor. *Accounting, Auditing & Accountability Journal*, 7(4), 94-109.
- Fama, E. F. (1980). Agency problems and the theory of the firm. *The Journal of Political Economy*, 288-307.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 301-325.

- Flammer, C. (2013). Corporate social responsibility and shareholder reaction: The environmental awareness of investors. *Academy of Management Journal*, 56(3), 758-781.
- Freedman, M., & Stagliano, A. (1992). European unification, accounting harmonization, and social disclosures. *The International Journal of Accounting*, 27(2), 112-122.
- Freeman, R. E. (1984). *Strategic management : A stakeholder approach*. Boston [Mass.]: Pitman.
- Friedman, M. (1962). In Friedman R. D. (Ed.), *Capitalism and freedom*. Chicago: University of Chicago Press.
- Garriga, E., & Melé, D. (2004). Corporate social responsibility theories: Mapping the territory. *Journal of Business Ethics*, 53(1-2), 51-71.
- Godfrey, P. C. (2005). The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review*, 30(4), 777-798.
- Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal*, 30(4), 425-445.
- Gray, R., Kouhy, R., & Lavers, S. (1995). Constructing a research database of social and environmental reporting by UK companies. *Accounting, Auditing & Accountability Journal*, 8(2), 78-101.
- GRI. (2013). *G4 Sustainability reporting guidelines*.
- GRI. (2011). *Sustainability reporting guidelines. Version 3.0*.
- GRI. (2011). *Sustainability reporting guidelines & financial services sector supplement*.
- Grow, B., Hamm, S., & Lee, L. (2005). The debate over doing good. *Business Week*, (1260), 78-80.
- Heineman, B. W. (2013). Why Are Some Sectors (Ahem, Finance) So Scandal-Plagued?. *Harvard Business Review*.
- Helleiner, E. (2011). Understanding the 2007-2008 global financial crisis: Lessons for scholars of International Political Economy. *Annual Review of Political Science*. 14, 67-87.
- Henderson, G. V. (1990). Problems and solutions in conducting event studies. *Journal of Risk and Insurance*, 57(2), 282-306.
- Ho, S. S. M. and Wong, K. S. (2004). Investment Analysts' Usage and Perceived Usefulness of Corporate Annual Reports, *Corporate Ownership and Control*, 1(3), 61-71.

- Hooghiemstra, R. (2000). Corporate communication and impression management - new perspectives why companies engage in corporate social reporting. *Journal of Business Ethics*, 27(1), 55-68.
- Hughes, J. S., Liu, J., & Liu, J. (2007). Information asymmetry, diversification, and cost of capital. *Accounting Review*, 82(3), 705-729.
- Isaksson, R., & Steimle, U. (2009). What does GRI-reporting tell us about corporate sustainability? *TQM Journal*, 21(2), 168-181.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Jones, T. M. (1995). Instrumental stakeholder theory: A synthesis of ethics and economics. *Academy of Management Review*, 20(2), 404-437.
- Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *Accounting Review*, 87(3), 761-796.
- Koller, T., Godhart, M., & Wessels, D. (2011). *Valuation*. Hoboken, New Jersey: John Wiley & Sons.
- KPMG International. (2013). *The KPMG survey of corporate responsibility reporting*.
- Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45(2), 385-420.
- Laufer, W. S. (2003). Social accountability and corporate greenwashing. *Journal of Business Ethics*, 43(3), 253-261.
- Levitt, T. (1958). The dangers of social responsibility. *Harvard Business Review*, 36(5), 41-50.
- Linthicum, C., Reitenga, A. L., & Sanchez, J. M. (2010). Social responsibility and corporate reputation: The case of the Arthur Andersen Enron audit failure. *Journal of Accounting and Public Policy*, 29(2), 160-176.
- MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35(1), 13-39.
- McWilliams, A., & Siegel, D. (1997). Event studies in management research: Theoretical and empirical issues. *Academy of Management Journal*, 40(3), 626-657.
- Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, 42(3), 483-510.

- Miles, S., Hammond, K. and Friedman, A. L. (2002). *Social and Environmental Reporting and Ethical Investment*, ACCA Research Report No. 77, Certified Accountants Educational Trust (London).
- Milne, M. J., & Chan, C. C. (1999). Narrative corporate social disclosures: How much of a difference do they make to investment decision-making? *The British Accounting Review*, 31(4), 439-457.
- Minor, D. B. (2011). Corporate Citizenship as Insurance: Theory and Evidence. Haas School of Business, University of California Berkley. *Working Paper*.
- Minor, D., & Morgan, J. (2011). CSR as reputation insurance: Primum non nocere. *California Management Review*, 53(3), 40-59.
- Morris, R. D. (1987). Signalling, agency theory and accounting policy choice. *Accounting and Business Research*, 18(69), 47-56.
- Moskowitz, M. (1972). Choosing socially responsible stocks. *Business and Society*, 1, 71-75.
- Norman, W., & MacDonald, C. (2004). Getting to the bottom of" triple bottom line". *Business Ethics Quarterly*, , 243-262.
- Patten, D. M. (1991). Exposure, legitimacy, and social disclosure. *Journal of Accounting and Public Policy*, 10(4), 297-308.
- Patten, D. M., & Nance, J. R. (1998). Regulatory cost effects in a good news environment: The intra-industry reaction to the alaskan oil spill. *Journal of Accounting and Public Policy*, 17(4-5), 409-429.
- Peloza, J. (2006). Using corporate social responsibility as insurance for financial performance. *California Management Review*, 48(2), 52-72.
- Porter, M. E., & Kramer, M. R. (2006). Strategy & society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78-92.
- Preston, L. E., & O'bannon, D. P. (1997). The corporate social-financial performance relationship. *Business and Society*, 36(4), 419-429.
- Rejda, G. E. (1995). *Principles of risk management and insurance*. New York: Harper Collins.
- Reverte, C. (2012). The impact of better corporate social responsibility disclosure on the cost of equity capital. *Corporate Social Responsibility and Environmental Management*, 19(5), 253-272.
- Reynolds, M., & Yuthas, K. (2008). Moral discourse and corporate social responsibility reporting. *Journal of Business Ethics*, 78(1-2), 47-64.

- Richardson, A. J., & Welker, M. (2001). Social disclosure, financial disclosure and the cost of equity capital. *Accounting, Organizations and Society*, 26(7-8), 597-616.
- SASB. (2013). *Conceptual Framework of the Sustainability Accounting Standards Board*.
- Schäfer, H., Beer, J., Zenker, J., & Fernandes, P. (2006). Who is who in corporate social responsibility rating. *A Survey of Internationally Established Rating Systems that Measure Corporate Responsibility*. Bertelsmann-Stiftung, Gütersloh.
- Serra, A. P. (2002). Event Study Tests: A brief survey. Universidade do Porto, Faculdade de Economia do Porto. *FEP Working Papers*.
- Shiu, Y., & Yang, S. (2011). Does Engagement in Corporate Social Responsibility Provide Insurance-Like Effects? Department of Risk Management and Insurance, National Chengchi University, Department of Business Administration, National Chengkung University, Taiwan. *Working Paper*.
- Simon, J. G., Powers, C. W., & Gunnemann, J. P. (1972). *The ethical investor : Universities and corporate responsibility*. New Haven: Yale U. P.
- Sjöström, E. (2004). Investment stewardship: Actors and methods for socially and environmentally responsible investments. *Project Report for the Nordic Partnership in Collaboration with the Stockholm School of Economics, Auf Den Seiten Der Stockholm School of Economics*.
- Skouloudis, A., Evangelinos, K., & Kourmoussis, F. (2010). Assessing non-financial reports according to the global reporting initiative guidelines: Evidence from greece. *Journal of Cleaner Production*, 18(5), 426-438.
- Slack, R., & Campbell, D. (2008). *Narrative reporting: Analysts' perceptions of its value and relevance* Association of Chartered Certified Accountants.
- Solomon, J. F., & Solomon, A. (2006). Private social, ethical and environmental disclosure. *Accounting, Auditing & Accountability Journal*, 19(4), 564-591.
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355-374.
- Statman, M. (2000). Socially responsible mutual funds. *Financial Analysts Journal*, 56(3), 30-39.
- Sutantoputra, A. W. (2009). Social disclosure rating system for assessing firms' CSR reports. *Corporate Communications*, 14(1), 34-48.
- Thompson, J. E. (1988). More methods that make little difference in event studies. *Journal of Business Finance & Accounting*, 15(1), 77-86.
- Toms, J. S. (2002). Firm resources, quality signals and the determinants of corporate environmental reputation: Some UK evidence. *British Accounting Review*, 34(3), 257-282.

- Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. *Academy of Management Review*, 10(3), 540-557.
- Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting and Economics*, 32(1-3), 97-180.
- Verschoor, C. C. (2005). Should all companies report on their corporate responsibility? *Strategic Finance*, 87(5), 17-18.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance. *Strategic Management Journal*, 8(4), 303-319.
- Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society*, 7(1), 53-63.
- Wooldridge, J. (2012). *Introductory econometrics: A modern approach* Cengage Learning.

## APPENDIX 1: SAMPLE SUMMARY

Table A includes a list of all the events included in the sample. In addition to the company name and the event date, the subtotals for the economic, environmental and social dimensions and the overall CSR score, resulting from the application of the grading framework, are disclosed. Moreover, the GRI grading is disclosed, where available, for comparison with the results from the framework developed for this thesis. Finally, a link to the report graded for each event is provided for verifiability purposes.



**Table A: Event list with CSR scores and link to the graded reports**

Company Name	Event date	EC	EN	SO	CSR	GRI	Link to graded report
Banca Monte dei Paschi	17/01/2013	15.5	32	64	111.5	A+	<a href="http://english.mps.it/NR/rdonlyres/23ADE31D-CB0E-484F-A0DF-E82A2C6245B9/63313/CSRReport2011.pdf">http://english.mps.it/NR/rdonlyres/23ADE31D-CB0E-484F-A0DF-E82A2C6245B9/63313/CSRReport2011.pdf</a>
Banco Bilbao Vizcaya Argentaria	15/12/2008	16.5	23	48	87.5	A+	<a href="http://inversores.bbva.com/TLBB/relinver/infofina/infanual/2007/bbva_rs_2007_ang_tag/index.htm">http://inversores.bbva.com/TLBB/relinver/infofina/infanual/2007/bbva_rs_2007_ang_tag/index.htm</a>
Banco Espirito Santo	20/11/2008	12.5	25	50.5	88	A+	<a href="http://www.bes.pt/sitebes/cms.aspx?labelid=SUSTAINABILITY_REPORTS">http://www.bes.pt/sitebes/cms.aspx?labelid=SUSTAINABILITY_REPORTS</a>
Banco Santander	23/12/2010	14	18.5	43.5	76	A+	<a href="http://www.santander.com/csgs/Satellite/CFWCSancomQP01/en_GB/Corporate/Sustainability/Santander-and-sustainability/Reports.html?pagename=CFWCSancomQP01%2FPage%2FCFQP01_PageAgrupEnlaces_P T14&amp;cidSel=1278677175398&amp;appID=santander.wc.CFWCSancomQP01&amp;canal=CSCORP&amp;empr=CFW CSancomQP01&amp;leng=en_GB&amp;cid=1278678066671">http://www.santander.com/csgs/Satellite/CFWCSancomQP01/en_GB/Corporate/Sustainability/Santander-and-sustainability/Reports.html?pagename=CFWCSancomQP01%2FPage%2FCFQP01_PageAgrupEnlaces_P T14&amp;cidSel=1278677175398&amp;appID=santander.wc.CFWCSancomQP01&amp;canal=CSCORP&amp;empr=CFW CSancomQP01&amp;leng=en_GB&amp;cid=1278678066671</a>
Banco Santander	13/02/2013	14.5	21.5	46	82	A+	<a href="http://www.asseffebi.eu/files/soci/Gruppo%20Santander%20Social%20Responsibility%202011%20HR%20p.49-56.pdf">http://www.asseffebi.eu/files/soci/Gruppo%20Santander%20Social%20Responsibility%202011%20HR%20p.49-56.pdf</a>
Banco Santander	13/12/2008	12.5	19	53	84.5	A+	<a href="http://www.santander.com/csgs/Satellite/CFWCSancomQP01/en_GB/Santander/Investor-Relations/Sustainability-report-.html">http://www.santander.com/csgs/Satellite/CFWCSancomQP01/en_GB/Santander/Investor-Relations/Sustainability-report-.html</a>
Bank of Ireland	12/05/2008	0	1	11.5	12.5	-	<a href="http://www.bankofireland.com/fs/doc/publications/investor-relations/2006.pdf">http://www.bankofireland.com/fs/doc/publications/investor-relations/2006.pdf</a>
Banque Nationale de Paris Paribas	14/12/2008	5.5	21.5	49	76	-	<a href="http://media-cms.bnpparibas.com/file/88/5/5885.pdf">http://media-cms.bnpparibas.com/file/88/5/5885.pdf</a>
Barclays	05/08/2010	7	17	33.5	57.5	B+	<a href="http://group.barclays.com/Satellite?blobcol=urldata&amp;blobheader=application%2Fpdf&amp;blobheadernam e1=Content-Disposition&amp;blobheadernam e2=MDT-Type&amp;blobheadervalue1=inline%3B+filename%3DDownload-Responsible-Banking-Review-2009-PDF-249MB.pdf&amp;blobheadervalue2=abinary%3B+charset%3DUTF-8&amp;blobkey=id&amp;blobtable=MungoBlobs&amp;blobwhere=1330707932605&amp;ssbinary=true">http://group.barclays.com/Satellite?blobcol=urldata&amp;blobheader=application%2Fpdf&amp;blobheadernam e1=Content-Disposition&amp;blobheadernam e2=MDT-Type&amp;blobheadervalue1=inline%3B+filename%3DDownload-Responsible-Banking-Review-2009-PDF-249MB.pdf&amp;blobheadervalue2=abinary%3B+charset%3DUTF-8&amp;blobkey=id&amp;blobtable=MungoBlobs&amp;blobwhere=1330707932605&amp;ssbinary=true</a>
Barclays	27/06/2012	9.5	17.5	34.5	61.5	B+	<a href="http://reports.barclays.com/cr11/servicepages/downloads/files/entire_barclays_cr2011.pdf">http://reports.barclays.com/cr11/servicepages/downloads/files/entire_barclays_cr2011.pdf</a>
Barclays	22/06/2007	12	25	30.5	67.5	-	<a href="http://group.barclays.com/Satellite?blobcol=urldata&amp;blobheader=application%2Fpdf&amp;blobheadernam e1=Content-Disposition&amp;blobheadernam e2=MDT-Type&amp;blobheadervalue1=inline%3B+filename%3DDownload-Corporate-Responsibility-Report-2006-(PDF-4.98MB).pdf&amp;blobheadervalue2=abinary%3B+charset%3DUTF-8&amp;blobkey=id&amp;blobtable=MungoBlobs&amp;blobwhere=1330687097620&amp;ssbinary=true">http://group.barclays.com/Satellite?blobcol=urldata&amp;blobheader=application%2Fpdf&amp;blobheadernam e1=Content-Disposition&amp;blobheadernam e2=MDT-Type&amp;blobheadervalue1=inline%3B+filename%3DDownload-Corporate-Responsibility-Report-2006-(PDF-4.98MB).pdf&amp;blobheadervalue2=abinary%3B+charset%3DUTF-8&amp;blobkey=id&amp;blobtable=MungoBlobs&amp;blobwhere=1330687097620&amp;ssbinary=true</a>
Commerzbank	30/07/2007	7.5	19.5	53	80	-	<a href="http://www.unglobalcompact.org/system/attachments/1545/original/COP.pdf?1262614271">http://www.unglobalcompact.org/system/attachments/1545/original/COP.pdf?1262614271</a>
Commerzbank	13/12/2011	13	26.5	57	96.5	-	<a href="http://nachhaltigkeit2011.commerzbank.de/commerzbank/annual/2011/nb/English/pdf/corporate_responsib ility_report_2011.pdf">http://nachhaltigkeit2011.commerzbank.de/commerzbank/annual/2011/nb/English/pdf/corporate_responsib ility_report_2011.pdf</a>
Credit Agricole	13/12/2007	2	5	18	25	-	<a href="http://www.credit-agricole.com/en/Investor-and-shareholder/Financial-reporting/Credit-Agricole-Group-Financial-statements">http://www.credit-agricole.com/en/Investor-and-shareholder/Financial-reporting/Credit-Agricole-Group-Financial-statements</a>
Credit Suisse Group	15/12/2009	5	17	7.5	29.5	-	<a href="https://www.credit-suisse.com/investors/doc/ar08/csg_ccr_2008_en.pdf">https://www.credit-suisse.com/investors/doc/ar08/csg_ccr_2008_en.pdf</a>
Credit Suisse Group	14/03/2007	2	19	8	29	-	<a href="http://unglobalcompact.org/COPs/detail/5803">http://unglobalcompact.org/COPs/detail/5803</a>
Credit Suisse Group	14/07/2010	5	17	11.5	33.5	A	<a href="https://www.credit-suisse.com/investors/doc/ar09/csg_ccr_2009_en.pdf">https://www.credit-suisse.com/investors/doc/ar09/csg_ccr_2009_en.pdf</a>
Credit Suisse Group	29/04/2011	5.5	19	13	37.5	B	<a href="https://www.credit-suisse.com/investors/doc/ar10/csg_ccr_2010_en.pdf">https://www.credit-suisse.com/investors/doc/ar10/csg_ccr_2010_en.pdf</a>
Danske Bank	15/12/2008	5.5	16.5	17.5	39.5	-	<a href="http://www.danskebank.com/en-uk/CSR/Documents/CSR_report_2007_WEB.pdf">http://www.danskebank.com/en-uk/CSR/Documents/CSR_report_2007_WEB.pdf</a>
Deutsche Bank	17/07/2007	10	15.5	30	55.5	-	<a href="http://www.econsense.de/sites/all/files/eng_csr-bericht_2006.pdf">http://www.econsense.de/sites/all/files/eng_csr-bericht_2006.pdf</a>
Dexia Group	15/12/2008	4	24.5	22.5	51	-	<a href="http://www.dexia.com/EN/shareholder_investor/individual_shareholders/publications/Documents/RDD_2007_UK.pdf">http://www.dexia.com/EN/shareholder_investor/individual_shareholders/publications/Documents/RDD_2007_UK.pdf</a>
DNB	17/02/2010	7	15	30	52	-	<a href="http://www.unglobalcompact.org/system/attachments/3571/original/COP.pdf?..">http://www.unglobalcompact.org/system/attachments/3571/original/COP.pdf?..</a>
HSBC Holdings	17/07/2012	5	24	32.5	61.5	-	<a href="http://www.hsbc.co.za/Downloads/120525_sustainability_report_2011.pdf">http://www.hsbc.co.za/Downloads/120525_sustainability_report_2011.pdf</a>

HSBC Holdings	15/12/2008	7	18.5	34	59.5	-	<a href="http://www.hsbc.co.mu/1/PA_ES_Content_Mgmt/content/website/documents/hsbc_sustainability_report_2007.pdf">http://www.hsbc.co.mu/1/PA_ES_Content_Mgmt/content/website/documents/hsbc_sustainability_report_2007.pdf</a>
HSBC Holdings	08/02/2007	8	20	37.5	65.5	-	<a href="http://www.hsbc.co.uk/1/PA_esf-ca-app-content/content/uk/pdfs/en/annual_results_2005_full.pdf">http://www.hsbc.co.uk/1/PA_esf-ca-app-content/content/uk/pdfs/en/annual_results_2005_full.pdf</a>
IKB Deutsche Industriebank	30/07/2007	0	0	2.5	2.5	-	<a href="https://www.ikb.de/fileadmin/content/30_Investor_Relations/30_Finanzberichte/Englisch/2006_07_IKB_Konzern_EN.pdf">https://www.ikb.de/fileadmin/content/30_Investor_Relations/30_Finanzberichte/Englisch/2006_07_IKB_Konzern_EN.pdf</a>
Intesa Sanpaolo	24/12/2007	9.5	25	41	75.5	-	<a href="http://www.group.intesasanpaolo.com/scriptIsir0/si09/contentData/view/BilancioSociale06_en.pdf?id=CN-T-04-000000001D0C1&amp;ct=application/pdf">http://www.group.intesasanpaolo.com/scriptIsir0/si09/contentData/view/BilancioSociale06_en.pdf?id=CN-T-04-000000001D0C1&amp;ct=application/pdf</a>
Julius Baer Gruppe	14/04/2011	0	0	3	3	-	<a href="http://www.juliusbaer.com/download/htm/4042/en/2011-02-07-JuliusBaer-FYR10-AnnualReport.pdf">http://www.juliusbaer.com/download/htm/4042/en/2011-02-07-JuliusBaer-FYR10-AnnualReport.pdf</a>
KBC Group	31/05/2013	6	22.5	27.5	56	B	<a href="https://multimediafiles.kbcgroup.eu/ng/published/KBCCOM/PDF/COM_BDV_pdf_CSR_report_2012.pdf">https://multimediafiles.kbcgroup.eu/ng/published/KBCCOM/PDF/COM_BDV_pdf_CSR_report_2012.pdf</a> ?
Lloyds Banking Group	06/06/2008	8	20	35	63	-	The report was received upon request. No link available.
Mediobanca	06/01/2010	0	0	0	0	-	<a href="http://www.mediobanca.it/static/upload/bil/bilancio-post-ass-30-06-09_eng.pdf">http://www.mediobanca.it/static/upload/bil/bilancio-post-ass-30-06-09_eng.pdf</a>
Natixis	15/03/2007	5	20	25	50	-	<a href="http://www.natixis.com/natixis/upload/docs/application/pdf/2007-08/2005_annual_report.pdf">http://www.natixis.com/natixis/upload/docs/application/pdf/2007-08/2005_annual_report.pdf</a>
Natixis	15/12/2008	3	25.5	29	57.5	-	<a href="http://www.equitysolutions.natixis.fr/pdf/base_prospectus/zert/2007/160_Natixis_Registration_Document_2007_EN.pdf">http://www.equitysolutions.natixis.fr/pdf/base_prospectus/zert/2007/160_Natixis_Registration_Document_2007_EN.pdf</a>
Nordea Bank	15/12/2008	2	10.5	14	26.5	-	<a href="http://www.unglobalcompact.org/system/attachments/3678/original/COP.pdf?1262614915">http://www.unglobalcompact.org/system/attachments/3678/original/COP.pdf?1262614915</a>
Royal Bank of Scotland Group	15/12/2008	4.5	19.5	25.5	49.5	B+	<a href="http://www.rbs.com/content/dam/rbs/Documents/Sustainability/2007-sustainability-report.pdf">http://www.rbs.com/content/dam/rbs/Documents/Sustainability/2007-sustainability-report.pdf</a>
Royal Bank of Scotland Group	04/07/2012	5	21	30.5	56.5	-	<a href="http://www.rbs.com/content/dam/rbs/Documents/Sustainability/RBS-Sustainability-Report-2011.pdf">http://www.rbs.com/content/dam/rbs/Documents/Sustainability/RBS-Sustainability-Report-2011.pdf</a>
Royal Bank of Scotland Group	25/04/2010	5	15	34.5	54.5	-	<a href="http://www.rbs.com/content/dam/rbs/Documents/Sustainability/2009-sustainability-report.pdf">http://www.rbs.com/content/dam/rbs/Documents/Sustainability/2009-sustainability-report.pdf</a>
Saint Galler Kantonalbank	15/12/2008	0.5	0	4	4.5	-	<a href="https://www.sgkb.ch/download/online/GB_2007_en.pdf">https://www.sgkb.ch/download/online/GB_2007_en.pdf</a>
Societe Generale	15/08/2007	2	0.5	33.5	36	-	<a href="https://www.societegenerale.com/sites/default/files/documents/Document%20de%20r%C3%A9f%C3%A9rence/2006%20EN/SocialReport2006.pdf">https://www.societegenerale.com/sites/default/files/documents/Document%20de%20r%C3%A9f%C3%A9rence/2006%20EN/SocialReport2006.pdf</a>
Societe Generale	21/01/2008	2	0.5	33.5	36	-	<a href="https://www.societegenerale.com/sites/default/files/documents/Document%20de%20r%C3%A9f%C3%A9rence/2006%20EN/SocialReport2006.pdf">https://www.societegenerale.com/sites/default/files/documents/Document%20de%20r%C3%A9f%C3%A9rence/2006%20EN/SocialReport2006.pdf</a>
Standard Chartered	07/08/2012	6	11	28	45	C+	<a href="http://reports.standardchartered.com/sr2011/servicepages/downloads/files/highlights_english_scb_sr2011.pdf">http://reports.standardchartered.com/sr2011/servicepages/downloads/files/highlights_english_scb_sr2011.pdf</a>
Swedbank	07/06/2007	2.5	10.5	9	22	-	<a href="http://www.swedbank.se/idc/arsredovisningar/2006/en/swedbankisamhallet/pdf/environment.pdf">http://www.swedbank.se/idc/arsredovisningar/2006/en/swedbankisamhallet/pdf/environment.pdf</a>
UniCredit	12/01/2009	11	22.5	53	86.5	-	<a href="https://www.unicreditgroup.eu/content/dam/unicreditgroup/documents/en/sustainability/reporting-and-metrics/annual_report_2006_hr_csr.pdf">https://www.unicreditgroup.eu/content/dam/unicreditgroup/documents/en/sustainability/reporting-and-metrics/annual_report_2006_hr_csr.pdf</a>
Unicredit	10/08/2007	3.5	9	17	29.5	-	<a href="https://www.unicreditgroup.eu/content/dam/unicreditgroup/documents/en/sustainability/reporting-and-metrics/environmental_report_2007.pdf">https://www.unicreditgroup.eu/content/dam/unicreditgroup/documents/en/sustainability/reporting-and-metrics/environmental_report_2007.pdf</a>
Unicredit	20/02/2013	13	21.5	57	91.5	A+	<a href="https://www.unicreditgroup.eu/content/dam/unicreditgroup/documents/en/sustainability/reporting-and-metrics/2011%20Sustainability%20Report%20v.0.1.pdf">https://www.unicreditgroup.eu/content/dam/unicreditgroup/documents/en/sustainability/reporting-and-metrics/2011%20Sustainability%20Report%20v.0.1.pdf</a>
Unione di Banche Italiane	17/12/2008	9	11	35	55	B	<a href="http://www.ubibanca.it/contenuti/RigAlle/UBI_Banca-Social_Report_2007_ENG1.pdf">http://www.ubibanca.it/contenuti/RigAlle/UBI_Banca-Social_Report_2007_ENG1.pdf</a>
United Bank of Switzerland	06/03/2007	4	20	12.5	36.5	-	<a href="http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html">http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html</a>
United Bank of Switzerland	18/02/2009	2	22	15	39	-	<a href="http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html">http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html</a>
United Bank of Switzerland	21/06/2012	3	23	19	45	A+	<a href="http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html">http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html</a>
United Bank of Switzerland	17/12/2012	3	23	19	45	A+	<a href="http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html">http://www.ubs.com/global/en/about_ubs/corporate_responsibility/information-center.html</a>

## APPENDIX 2: METHODOLOGY

In order to increase the robustness of the grading framework, as already explained, a subsample was identified to be graded by both coders separately. As table B shows, the first two companies graded (Banco Santander 2007 and RBS 2007) gave divergent results for the criterion “Business model”, i.e. 15 vs. 27 and 11 vs.19. A more detailed definition for the criterion was needed for the grading framework instruction to be solid and consistent. After a more precise definition was developed, the two coders graded three additional companies separately, in order to verify that the discrepancy observed had been accommodated. As can be seen in table A, no major differences were observed for the last three companies of the subsample.

**Table B: Results from the preliminary subsample scored through the grading framework**

	Auditability		Business model		Comparability		Total	
	Coder 1	Coder 2	Coder 1	Coder 2	Coder 1	Coder 2	Coder 1	Coder 2
<b>Banco Santander 2007</b>	43	38	15	27	15	13	73	78
<b>RBS 2007</b>	26	25	11	19	6	6	43	50
<b>Natixis 2007</b>	35	37.5	12	10	10	10	57	57.5
<b>RBS 2011</b>	33.5	37.5	12	11	7	8	52.5	56.5
<b>HSBC 2011</b>	40	39.5	13	10	13	12	66	61.5

Formulas for the market models parameters  $\alpha$ ,  $\beta$ , and  $\delta_\varepsilon^2$  are disclosed below.

$$\hat{\beta}_i = \frac{\sum_{t=T_0+1}^{T_1} (R_{it} - \hat{\mu}_i)(R_{mt} - \hat{\mu}_m)}{\sum_{t=T_0+1}^{T_1} (R_{mt} - \hat{\mu}_m)^2} \quad \hat{\alpha}_i = \hat{\mu}_i - \hat{\beta}_i \hat{\mu}_m$$

$$\delta_\varepsilon^2 = \frac{1}{L_1 - 2} \sum_{t=T_0+1}^{T_1} (R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt})^2$$

where  $\hat{\mu}_i = \frac{1}{L_1} \sum_{t=T_0+1}^{T_1} R_{it}$  and  $\hat{\mu}_m = \frac{1}{L_1} \sum_{t=T_0+1}^{T_1} R_{mt}$ .

## APPENDIX 3: RESULTS

The full grading for Banco Santander’s report in 2007 is disclosed in table C in order to allow the reader to better understand the process of applying the grading framework and to replicate and verify the solidity of the results.

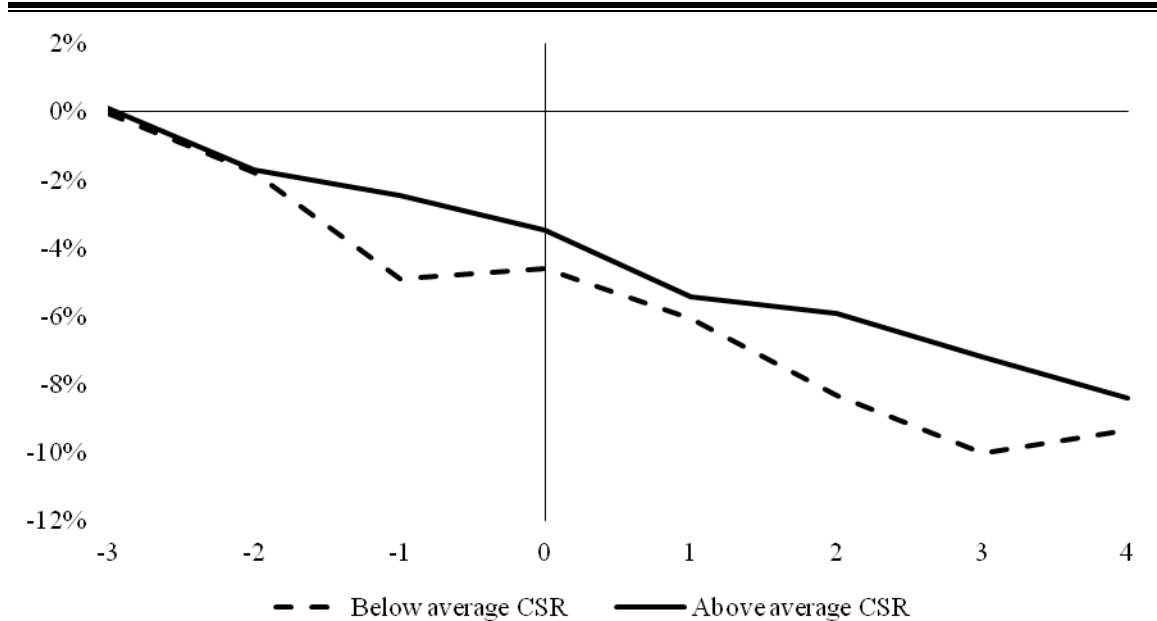
**Table C: Grading for Banco Santander 2007 resulting from the grading framework developed**

	Indicators	Auditability [0-2]	Business Model [0-1]	Comparability [0-2]	TOTAL	Page in Report
EC1	Value generated by the organization's community investment programs and breakdown of community investment by theme.	1	0	1	2	7
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	2	1	0	3	63, 83, 85-86
EC3	Significant financial assistance received from government.	0	0	0	0	
EC4	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation and procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.	1	1	1	3	44, 89
EC5	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	0.5	0	0	0.5	66
EC6	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	2	1	1	4	70-75
	<b>Subtotal Economic Dimension</b>	<b>6.5</b>	<b>3</b>	<b>3</b>	<b>12.5</b>	
EN1	Materials used and percentage of recycled materials (by weight or volume).	2	0	1	3	82, 87, 90
EN2	Energy consumption and initiatives for reduction of usage and reductions achieved.	1	0	1	2	90, 87
EN3	Water consumption and recycling.	2	1	1	4	20, 82-90
EN4	Impacts on protected areas and areas with high biodiversity value.	0.5	0	0	0.5	104
EN5	Direct and indirect emissions and initiatives to reduce them.	1	0	1	2	82, 83, 90
EN6	Waste management (paper, waste IT).	1	0	1	2	83, 90
EN7	Initiatives to mitigate environmental impact of services and extent of impact mitigations.	2	1	0	3	84, 85
EN8	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.	0.5	0	0	0.5	96 + AR
EN9	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	0	0	0	0	
EN10	Total environmental protection expenditures and investments by type.	0	0	0	0	
EN11	Environmental policies in companies owned or investments and their assessment.	2	0	0	2	63
	<b>Subtotal Environment Dimension</b>	<b>12</b>	<b>2</b>	<b>5</b>	<b>19</b>	
LA1	Total workforce by employment type, employment contract, and region.	2	0	0	2	44-46
LA2	Total number and rate of employee turnover by age group, gender, and region.	2	0	1	3	42, 46, 89
LA3	Benefits provided to employees of the firm.	1	1	0	2	47
LA4	Percentage of employees covered by collective bargaining agreements.	1	1	1	3	53, 89, 96
LA5	Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.	0.5	0	0	0.5	53
LA6	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work related fatalities by region.	1	0	1	2	89
LA7	Education, training, counselling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	1	1	0	2	53
LA8	Health and safety topics covered in formal agreements with trade unions.	0	0	0	0	
LA9	Average hours of training per year per employee by employee category.	2	1	1	4	48-49, 89
LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	0	0	0	0	

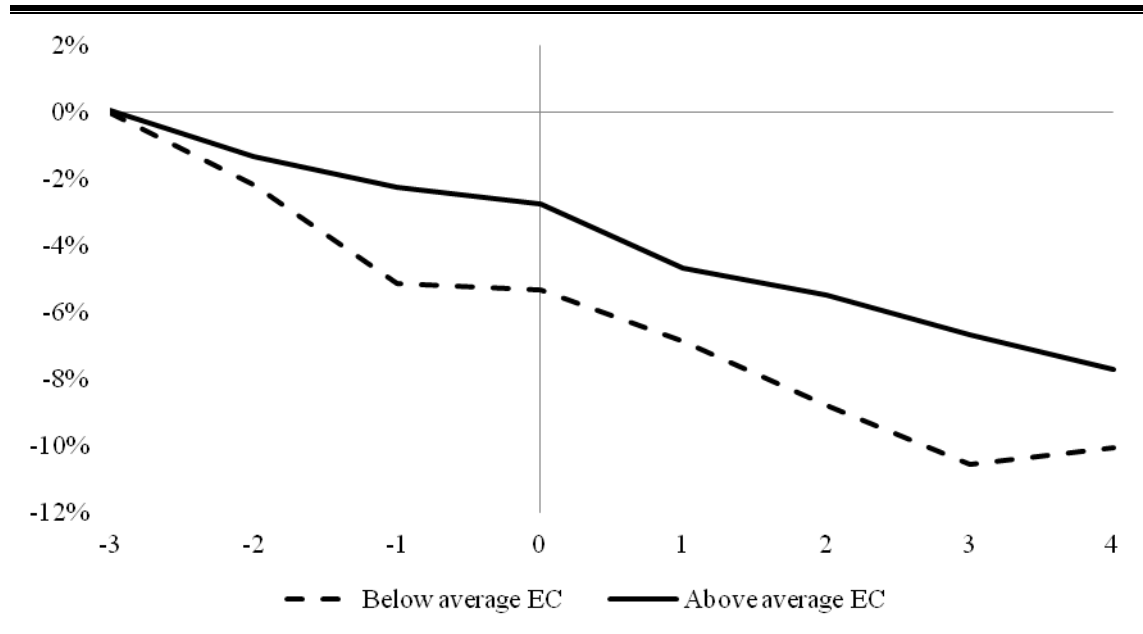
LA11	Percentage of employees receiving regular performance and career development reviews.	0	0	0	0	
LA12	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	2	1	0	3	40, 44-45, 51
LA13	Ratio of basic salary of men to women by employee category.	1	0	1	2	89
HR1	Human rights-based assessment of investees and clients and percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	0.5	0	0	0.5	96
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	2	1	0	3	69
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	0.5	0	0	0.5	96
HR4	Total number of incidents of discrimination or violation of indigenous people rights, operations where the right to exercise freedom of association and collective bargaining may be at significant risk and actions taken.	0.5	0	0	0.5	96
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	1	1	0	2	14, 90
SO2	Percentage and total number of business units analysed for risks related to corruption.	2	1	0	3	62, 63
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	2	1	0	3	62
SO4	Actions taken in response to incidents of corruption.	2	1	0	3	61-63
SO5	Public policy positions and participation in public policy development and lobbying; quantification of financial and in-kind contributions to political parties, politicians, and related institutions by country.	0.5	0	0	0.5	96
SO6	Total number of legal actions for anticompetitive behaviour, anti-trust, and monopoly practices and their outcomes.	0	0	0	0	
SO7	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.	0.5	0	0	0.5	96 + AR
PR1	Policies for the fair design and sale of financial products and services.	2	1	0	3	29, 30
PR2	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements (Initiatives to enhance financial literacy by type of beneficiary).	2	1	0	3	25, 95
PR3	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes.	0	0	0	0	
PR4	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	2	1	1	4	17, 19, 20
PR5	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	1	1	0	2	95
PR6	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	0.5	0	0	0.5	95
PR7	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	0	0	0	0	
PR8	Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services.	0.5	0	0	0.5	96 + AR
<b>Subtotal Social Dimension</b>		33	14	6	53	
<b>Total CSR</b>		51.5	19	14	84.5	

Below, the CAR graphs based on the average divisions of CSR and the economic, environmental and social dimensions are shown. As explained in the methodology section, this division separates the sample into two groups based on the average CSR score or on the EC, EN or SO scores. The inclusion of these graphs in the appendix stems from the fact that results shown are simply corroborating the ones already analysed in the results section through the graphs depicting the three categories split (“low quality CSR”, “medium quality CSR” and “high quality CSR”).

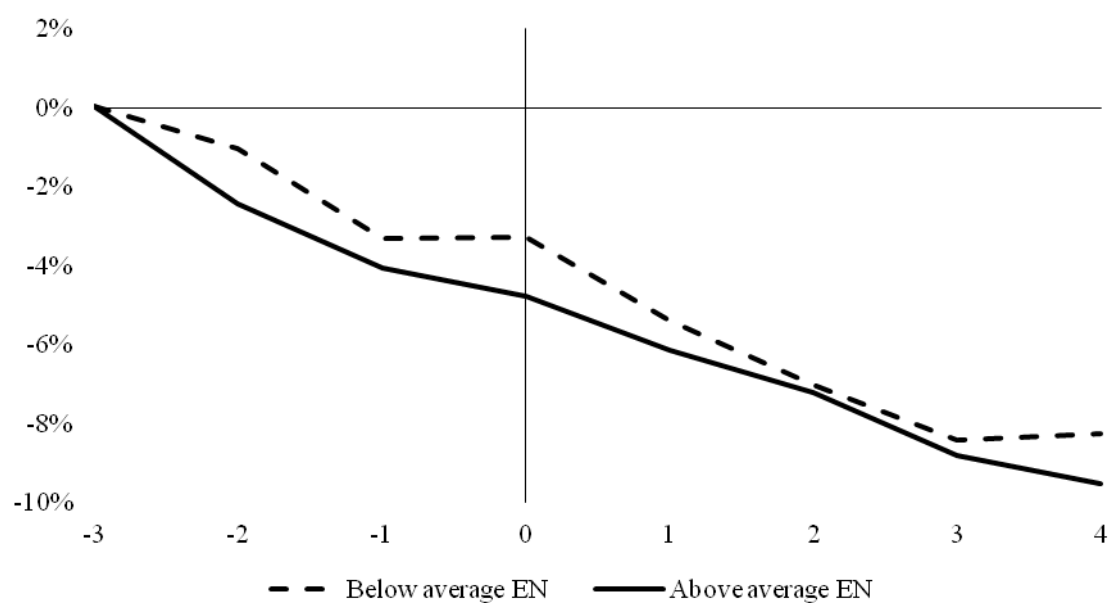
**Graph A: CAR for average division**



**Graph B: CAR for average division (economic dimension)**



**Graph C: CAR for average division (environmental dimension)**



**Graph D: CAR for average division (social dimension)**

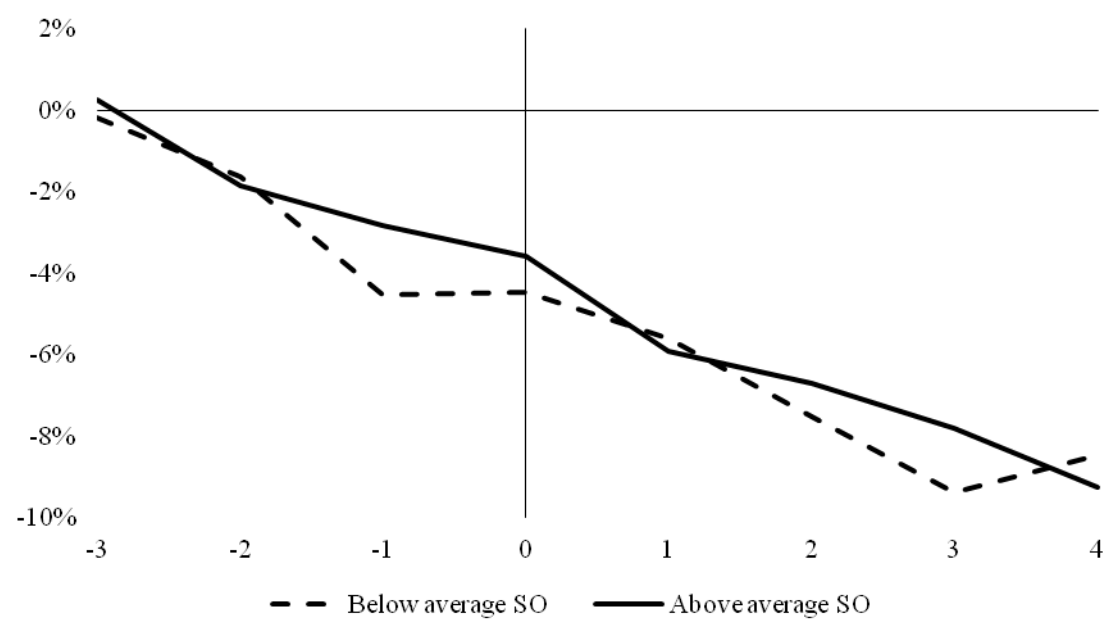


Table E shows the results for the regressions run using the average division as an alternative variable for CSR, EC, EN and SO. As it can be noted, results do not differ particularly from the ones analysed in the results section. Coefficients for the independent variable are stronger but still statistical significance can be found.

**Table E: Regression results – Average division as independent variable**

<b>CAR (-3,+4)</b>	<b>CSR</b>	<b>EC</b>	<b>EN</b>	<b>SO</b>
	Coefficient ( <i>t</i> -statistic)	Coefficient ( <i>t</i> -statistic)	Coefficient ( <i>t</i> -statistic)	Coefficient ( <i>t</i> -statistic)
<b>Average division</b>	0.0355 (1.1548)	0.0476 (1.6113)	-0.0189 (-0.6363)	0.0191 (0.6213)
SIZE	0.0018 (0.1721)	0.0003 (0.0271)	0.0008 (0.0750)	0.0011 (0.1048)
MtoB	0.0692*** (2.8332)	0.0700*** (2.9617)	0.0604** (2.5767)	0.0648** (2.6443)
ROIC	0.0153* (1.7355)	0.0153* (1.7699)	0.0156* (1.7553)	0.0154* (1.7241)
CRISIS	-0.0885*** (-2.8064)	-0.0917*** (-2.9404)	-0.0909*** (-2.8246)	-0.0911*** (-2.8240)
Intercept	-0.2025 (-0.9159)	-0.1764 (-0.8213)	-0.1436 (-0.6516)	-0.1736 (-0.7836)
<i>N</i>	50	50	50	50
<i>R-square</i>	0.2716	0.2913	0.2563	0.2560
<i>Model F value</i>	3.2808	3.6174	3.0334	3.0284

\* Significant at the 10% level. \*\* Significant at the 5% level. \*\*\* Significant at the 1% level.



Table F reports the figures for the regression performed after excluding 10 events in the Madoff scandal, in order to control for potential clustering effects disturbing the results. R-squared drop substantially in comparison to the full sample regressions but for what concerns the CSR coefficients and statistical significance, no material differences can be observed.

**Table F: Regression results – Sample without clustering events**

<b>CAR (-3,+4)</b>	<b>Individual score Coefficient (<i>t</i>-statistic)</b>	<b>Category Coefficient (<i>t</i>-statistic)</b>	<b>CAR (-3,+1)</b>	<b>Individual score Coefficient (<i>t</i>-statistic)</b>	<b>Category Coefficient (<i>t</i>-statistic)</b>
<b>CSR</b>	0.0002 (0.2872)	0.0119 (0.6094)	<b>CSR</b>	0.0003 (0.6991)	0.0088 (0.5966)
<b>SIZE</b>	0.0202 (1.6243)	0.0208* (1.7057)	<b>SIZE</b>	0.0164* (1.7524)	0.0175* (1.8879)
<b>MtoB</b>	0.0374 (1.3967)	0.0400 (1.5388)	<b>MtoB</b>	0.0181 (0.8957)	0.0165 (0.8350)
<b>ROIC</b>	0.0078 (0.8217)	0.0075 (0.7867)	<b>ROIC</b>	-0.0019 (-0.2660)	-0.0024 (-0.3350)
<b>CRISIS</b>	-0.0429 (-1.1634)	-0.0432 (-1.1814)	<b>CRISIS</b>	-0.0288 (-1.0313)	-0.0275 (-0.9903)
<b>Intercept</b>	-0.5313** (-2.1328)	-0.5502** (-2.1984)	<b>Intercept</b>	-0.4025** (-2.1373)	-0.4148** (-2.1783)
<i>N</i>	40	40	<i>N</i>	40	40
<i>R-square</i>	0.1713	0.1783	<i>R-square</i>	0.1535	0.1503
<i>Model F value</i>	1.4057	1.4752	<i>Model F value</i>	1.2335	1.2025

\* Significant at the 10% level. \*\* Significant at the 5% level. \*\*\* Significant at the 1% level.