What are the Consequences of Poor Corporate Social Responsibility on Firm Performance?

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ABSTRACT

This thesis examines the effect of negative Corporate Social Responsibility on shareholder value. Event study is used as a research method with data from S&P 500 firms from 2010 to 2016. The events are news publications of negative CSR actions. The main objective of this thesis is to analyse difference in effects of different types of negative CSR. The events are categorized according to what stakeholder group is affected, which creates the opportunity to investigate what type of negative CSR evokes the strongest or weakest reaction. Also, the roles of severity and intentionality in the effect of negative CSR are studied in this research. The results suggest that negative CSR concerning product quality has the strongest negative effect on shareholder value. This type of negative CSR mostly affects the consumer. Severe events cause a much stronger decrease in shareholder value than less severe events, and accidental events cause a stronger decrease than deliberate events.

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CHAPTER 1 Introduction

It is often perceived that the optimal strategy for a company is to not only act in the best interest of shareholders, but also of the many stakeholders it has, including customers, employees, suppliers, the community and the government. The extent to which these stakeholders are being served by a firm's actions is referred to as corporate social responsibility (CSR).

There has been an ongoing discussion on whether a firm should invest many of its resources in CSR, or keep its main focus on its shareholders. Two important theories on this issue have taken form: The Stakeholder Theory, originated by philosopher R. Edward Freeman (Freeman, 1984), and the Shareholder Theory, originated by economist Milton Friedman (Friedman, 1962). The first theory emphasizes the importance of the relationship of a firm with its stakeholders, the latter states that a firm should only act in the best interest of its shareholders. Many authors have taken a stand in this debate and argued it from different perspectives. In favour of the shareholder theory are two European professors, Bovenberg & Teulings (2009), who argue that the current system in Europe, which grants a lot of power to employees of a firm, is far from optimal. According to them, this so-called Rhineland model should change into a system similar to the one in the United States, where the bargaining power of employees is much lower. The surplus of firms should be assigned to shareholders. This leads to diversification of firm-specific risks on capital markets, creating the best social insurance.

In the US the debate is spurred by well-known professor and former Dean of the Rotman School of Management, Roger Martin, who strongly supports the stakeholder view. Martin (2010) states that instead of maximizing shareholder value, firms should focus on maximizing customer satisfaction. Pleasing customers and creating the highest value for this stakeholder group should be a firm's top priority. This "customer-driven capitalism" will automatically also increase shareholder value.

Yet another viewpoint, strongly different from that of Martin but also supporting stakeholder theory, comes from Vineet Nayar, former CEO of HCL Technologies. Nayar (2010) states in his book that the success of his company was achieved by putting employees before customers. According to him, maximizing the value to employees will in turn create maximum value to customers. His idea also puts more emphasis on the relationship with a firm's stakeholders than with its shareholders.

In practice, many firms make an effort to do well in terms of CSR, to improve the relations with their stakeholders. Creating an optimal work environment for its employees or engaging in a project that helps a third world country are good examples of investing in CSR. A lot of research on CSR has been done, measuring its effects on firm performance and supporting either the stakeholder or the shareholder theory. The difference in outcomes of these researches is due to the complex nature of the relationship between CSR and firm performance. Firms investing in CSR face both costs and benefits and the effect on firm performance is often firm-specific. Usually, benefits take a while to

arise since they need to be large enough to cover the costs of CSR investment, and the benefits are non-linear in shape. Only very high levels of positive CSR will create shareholder value. McWilliams & Siegel (2001) find, using a supply and demand framework, that the ideal level of a firm's investment in CSR can be determined by a cost-benefit analysis. This ideal level of CSR satisfies its stakeholders, while still maximizing profits. They find a neutral relationship between CSR and firm performance.

Margolis et al. (2009) have conducted a meta-analysis of 167 studies on CSR and its effect on firm performance, and find a positive but small effect. These studies all treat different types of CSR, and Margolis et al. (2009) divide these types into nine categories, enabling them to measure the different effects. These categories are for example *charitable contributions* and *environmental performance*, which is seen as positive CSR, but also *revealed misdeeds*, such as fines, involuntary recalls and guilty verdicts in lawsuits. This can also be called negative CSR. In this meta-analysis a cumulative negative effect of negative CSR on firm performance is found.

In this thesis I am interested in negative CSR. Over the past decades there have been many well-known cases where firms engaged in negative CSR. Think of the world's largest retailer, Wal-Mart, that pleaded guilty in 2013 to disposing hazardous waste, like fertilizer and bleach, in the local sewer system. The company had to pay $81.6 million in damages to the government. This is an example of a huge violation of CSR. Or the disastrous mining accident of Massey Energy Company in 2010, where 29 miners were killed, mainly caused by the fact that the company neglected certain safety practices for the sake of more production. Also, Toyota was accused in 2010 of being aware of brake and steering malfunctions in its cars. Later on, it appeared that these malfunctions were caused by bad driving, and were not production errors, but the bad press on Toyota's CSR had already been extremely harmful for its reputation. An automobile brand with a very recent case of CSR failure is Volkswagen: The company installed equipment on its vehicles that could manipulate emission controls and made it seem as if they were very environmentally friendly, while on the road the cars emitted far more than the legal limit.

These are only a few examples of the cases where a company suffered from poor CSR. But did these cases all cause significant damage for the firm in terms of value? In this thesis, I am going to investigate what the consequences are of negative CSR cases on firm performance, measured by stock value.

Since investors rely heavily on the news when making their investing decisions, news articles are an appropriate proxy for negative CSR events. The media plays a very important role in the financial world. As soon as a firm's action that reveals poor CSR is made public by means of a news article, investors immediately respond to that.

In this thesis news articles will proxy for negative CSR events, and all the articles shall be categorized in order to perform a more detailed research. First of all, I divide each event in one of five different dimensions of CSR. A proper dimensional framework was proposed by Inoue & Lee (2011).

They state that CSR activities can be divided into the following dimensions: employee relations, product quality (proxy for consumer relations), community relations, environmental issues, and diversity issues (proxy for minorities/women and suppliers) (Inoue & Lee, 2011). By classifying the events by different categories, I can separately analyse the effects of negative CSR in each category. This may offer some interesting insights, for instance which type of negative CSR event has the largest and which the smallest effect.

This thesis also investigates if the severity of the event matters. Do minor mistakes trigger a significant reaction from shareholders? If so, is there a large difference between the effect of such a minor mistake and the effect of serious misconduct? This can be analysed by grouping the events as severe or less severe.

Not all corporate actions that cause a negative CSR event are intentional. *Errare humanum est*, everyone makes mistakes, and even when a company means absolutely no harm, one oversight or miscalculation can have disastrous consequences. Therefore, this thesis also looks at the intentionality of the event. Did the firm deliberately act against her stakeholders' best interest or was it an accident? Does this matter for the stock value? The events will be classified so a potential difference in effect can be analysed.

There is plenty of literature about CSR, however most of these works put more emphasis on positive CSR and its effects. Frequently these works find evidence of a positive relationship between CSR and firm performance, but it is often left open if an opposite relationship is observable for negative CSR. It is overlooked that firms also quite regularly engage in negative CSR, to increase profits at the expense of stakeholders. And when authors research negative CSR, they often limit themselves to only one type. The focus of this thesis is on many different types of negative CSR. In most literature about this subject a common rating of CSR for each firm is used as a measurement. This thesis has a different approach. It analyses CSR events at certain points in time, instead of using a rating that often lacks accuracy.

The outcome of this research is of concern to both the firm and investors. Especially the categorizing of the events may yield new knowledge. It brings forward the opportunity to find out which stakeholder group evokes the strongest reaction from investors when harmed by a companies' actions. It is interesting to see if actions affecting one stakeholder group are perceived as more serious than actions affecting other stakeholder groups. Firms and investors can use these results to their benefit: firms to achieve a higher shareholder value by adjusting their strategic decision-making, investors to increase their wealth by adjusting their investing decisions accordingly.

I use the event study methodology to analyse the effects of negative CSR news. The companies that I collect the data for are listed S&P 500 companies. The data of these companies is easily available from many different sources, such as The Center for Research in Security Prices (CRSP). I extensively

search for news articles announcing negative CSR events regarding these companies. I collect news articles from a few major US newspapers, from the period from 2010 to 2016. This excludes the economic crisis that started in 2007, as this period may distort the results. The sample contains approximately 100 news articles. This data is used in an event study. I also perform event studies after dividing the articles into the previously mentioned five dimensions, after defining the severity and after defining the intentionality of the event.

First of all, this thesis finds a significant negative effect of negative CSR events on shareholder value. This is in line with existing literature. A similar effect was found by Margolis et al. (2009). Another work on negative CSR is by Krüger (2015), who examined the effect of negative CSR news on shareholder value. He found that company's stock prices decline as a consequence of negative CSR events. Also Frooman (1997), who did a meta-analysis of event studies concerning negative CSR events found a strong negative effect on shareholder value. I find the same result, while using more recent data.

A more interesting finding of this thesis is that the effect of these negative CSR events is the strongest when it affects the consumer. Previous literature has not frequently elaborated on the effect of different categories of negative CSR events. I separately investigate the effect of events regarding the different stakeholder groups and I found the reaction of negative CSR events affecting the consumer to be the most substantial. This can be concluded from the fact that the negative effect on shareholder value is highest and most significant in the *product quality* category. It suggests that when a firm's relationship with a consumer is harmed, investors respond more aggressively than when the relationship with another stakeholder group is harmed. So, in this research the consumer appears to be the most important stakeholder. When a company engages in negative CSR affecting employees, there is also a negative reaction of the stock price. This response is weaker, but it is still significant and a relevant finding educating firms to invest in employee relations and diversity. Negative CSR events concerning the environment and the community / society do not have a significant effect on shareholder value.

Severity also plays an essential part in the effect of negative CSR events. Severe events have a strong negative effect on stock price. Less severe events cause no significant reaction on stock price at all. When the less severe events are excluded from the sample, the decrease in stock price doubles.

The last finding of this thesis is that accidental events have a stronger effect on shareholder value than deliberate events. However, the reason for this can be the uneven distribution of these two kinds of events along the categories. Many accidental events for example fall in the product quality category which shows the strongest effect.

All in all, these results propose an incentive for firms to avoid situations that harm the relationship with its stakeholders to maintain a strong firm value. Especially the relationship with the

consumer is important, and missteps that affect the consumer have to be prevented. This confirms the well-known saying: customer is king.

The remainder of this thesis is structured as follows: The next section addresses the existing literature on the topic and its connection to this research, in section 3 the hypotheses are composed, section 4 describes the data and methodology that are used, in section 5 the results are analysed and discussed and section 6 concludes.

CHAPTER 2 Literature review

2.1 Wide-ranging literature on CSR

In the past decades, CSR has grown to become a very significant issue. Its importance to companies is frequently discussed and has been studied from many different perspectives. There is extensive literature about the relationship between CSR and firm performance in terms of shareholder value. For example, Waddock & Graves (1997) find a positive relationship between corporate social performance (CSP) and financial performance, the first having a positive effect on the latter, and vice versa. They suggest occurrence of a virtuous circle; better CSR leads to stronger financial performance, and more resources available because of strong financial performance can be invested in CSR. More recent work, by Lev, Petrovits & Radhakrishnan (2010), examines the effect corporate contributions to charity - a good example of positive CSR - on future revenue. A positive effect is found, however this effect is not reversed. Jiao (2010) looks at the relationship between stakeholder value, which is created through CSR, and Tobin's Q, and finds a positive association between both. This effect of stakeholder value is driven by environmental performance and employee relations.

To eliminate reverse causality problems that are present in amongst others the works by Waddock & Graves (1997) and Jiao (2010), Deng, Kang, and Sin Low (2013) use evidence from mergers to research the effects of high CSR on firm value. They also find positive effects for high CSR firms compared to low CSR firms on firm value, like higher announcement returns. Next to that they find a positive effect on the long-term operating performance.

Gompers et al. (2003) consider corporate governance ratings of firms and wonder whether strongly governed firms outperform poorly governed firms. They rank firms on the basis of CG scores and create deciles. Then they perform a Fama-French regression and find a significant difference between high and low rated firms. Their results show a strong positive correlation between corporate governance and stock returns, even though higher corporate governance means weaker shareholder rights.

Also from a firm's financing perspective, it has been found that CSR is an important asset. El Ghoul, Guedhami, Kwok & Mishra (2011) studied the effect of CSR on the cost of equity capital for firms. Their results suggest that firms with better CSR rating have lower equity financing costs. This indicates that the perceived riskiness of the company to investors decreases when a firm makes an effort to become more socially responsible. Thus, according to these findings firms should invest in CSR in order to benefit from cheaper equity. A similar result is found by Cao, Myers, Myers & Omer (2015), who explore the relationship between a firm's reputation and cost of equity financing. Reputation is closely linked to CSR, and measured here using rankings in "America's Most Admired Companies'' list. These authors find a positive effect of reputation on cost of equity financing as well.

2.2 Stakeholder Theory versus Shareholder Theory

These results are all in line with the so-called "Stakeholder Theory". This theory states that a firm should act in the best interest of all its stakeholders, not only in the best interest of its shareholders. The thought behind this theory is that certain aspects are more important than maximising profits. The mind behind this philosophy is R. Edward Freeman, who first wrote about it in his book Strategic Management: a Stakeholder Approach. It is a popular view and many support this theory. It stresses the importance of norms and values in corporations (Freeman, 1984).

"The business of business isn't just about creating profits for shareholders — it's also about improving the state of the world and driving stakeholder value." – Marc Benioff, CEO of Salesforce (Source: Benioff, 2015, Huffington Post).

Others, led by economist Milton Friedman, disagree with the stakeholder theory. These more neoclassical economists state that firms must only act in the best interest of its shareholders. Firms have no social responsibility towards other stakeholder groups. In his book, Capitalism and Freedom, Friedman states: "A corporation is an instrument of the stockholders who own it." (Friedman, 1962, p. 233). With the profit generated by the corporation, the shareholders can decide themselves which social initiative to invest in. If a firm invests in CSR, investors feel that the firm attributes its resources in favour of its stakeholders, but at the expense of the profits for shareholders. Several authors find evidence that is consistent with this shareholder theory. Brammer & Millington (2008) discover a u-shaped relationship between CSR and financial performance, using data of charity contributions. They find that firms with exceptionally high and exceptionally low CSR have a higher financial performance than other firms. Firms that moderately invest in CSR experience the costs of this investment but do not stand out to stakeholders, causing a lower financial performance. Recent works of Peng & Yang (2014) and Baird et al. (2012) find empirical evidence of a negative relationship between CSR and financial performance. This supports the theory that firms are better off serving solely its shareholders.

Wang et al. (2008) perform an empirical study and find that the relationship between CSR and financial performance can be characterised by an inverted U-shape. Higher financial performance can be realized by increasing CSR, but past a certain level of CSR the benefits will be offset by the costs. This study supports the stakeholder theory, but stresses the importance of not over-doing it.

As well as Wang et al. (2008) some other authors also put more nuance to the theories. Luo & Bhattacharya (2006) find that CSR positively affects customer satisfaction, thereby increasing firm value. However, they also find that CSR negatively affects customer satisfaction and firm value if the firm has low innovativeness capability. This outcome emphasizes that firm-specific traits influence the optimal CSR strategy. Cavaco & Crifo (2014) state that synergies and trade-offs between different types of CSR activities cause CSR to sometimes have a negative and sometimes positive effect on firm

performance. They find that for example a firm's CSR strategy involving both the supply chain (customers/suppliers) and human resources (employees) has a positive effect, but a CSR strategy involving both the supply chain and the environment has a negative effect.

The tension between the two theories is still a very popular topic of discussion, yet the majority of results tends to show a positive relationship between CSR and firm value, consistent with Freeman's stakeholder theory.

2.3 Connection to this thesis

Though there is extensive literature about the relationship between CSR and financial performance, I find that most of this literature mainly focuses on positive CSR, and much less on negative CSR. For example, authors frequently use positive CSR activities such as environmental initiatives or charity contributions to examine CSR effects. When authors do focus on negative CSR, they often only address one type of negative CSR (either pollution, either fraud, etc.). Next to that, the majority of the respective literature uses a certain rating[1] of a firm's CSR as a measurement and examines its effects on performance, but it does not focus on the effects of specific events that occurred at one point in time in the history of a firm. This latter can be researched using event study methodology. Next to the regression analysis method, this is a method that can be used when studying CSR. Posnikoff (1997), Wright and Ferris (1997) and Teoh, Welch and Wazzan (1999) for instance used this method to study the effect of corporate divestment from South Africa (as a protest to the Apartheid) on shareholder value. More recently, Becchetti et al. (2007) used event study to analyse the effect of CSR, measured by entry and exit of the Domini 400 Social Index, on stock value. Also, Keele & DeHart (2011) studied the effect of firms' announcements of joining the USEPA Climate Leaders program on stock value. On the next page a meta-analysis (table 1) can be found presenting the data and results of different event studies like these on CSR from the past decades. However, most of the research that has been done on CSR uses the regression analysis method. And the research that does use event study, focuses primarily on positive CSR events.

As opposed to the regression analysis method, the event study method eliminates the problems of measurement error, reverse causality and omitted variables. The measurement error exists because it is very challenging to construct a valuation of a company's CSR, given the fact that CSR is not quantitative but qualitative. Event study deals with this issue by looking at specific CSR events and the immediate consequences of these events. Reverse causality is the second problem that arises when performing regression analyses. It can remain unclear if CSR solely affects performance, or if performance in turn also affects CSR. A positive relation can indicate that firms with high CSR bring

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[1] A popular method is using the CSR rating from KLD Research & Analytics, Inc, STATS database, which is composed by measuring a firm's performance in the CSR components: community, corporate governance, diversity, employee relations, environment, human rights, and product quality and safety.

more value to stakeholders which translates into shareholder value, but it might also mean that firms with high performance invest more of their available resources in CSR. This problem can be eliminated by an event study, because an event study looks at the short-term changes in for example stock price following a specific event. The last problem that is eliminated is the omitted variable bias. In this type of event study there is no risk of leaving out important variables.

Table 1: Meta-analysis of event studies on effect of CSR on firm performance

Author(s) (publication year)	Region	Time period	Positive events	Negative events	Category /Classification of event	Estimation period	Effect of (negative) events (event window)
Hoffer, Pruitt & Reilly (1988)	US	1975 – 1981		29	Product recalls	-	No effect
Davidson & Worrell (1992)	US	1968 - 1987	-	133	Product recalls	(-291,-91)	MCPE (-1,1): -0.0068
Laplante & Lanoie (1994)	Canada	1982 – 1991	-	47	Environment	(-210,-1)	CAR: (-30,30): -2.6%
Posnikoff (1997)	US	1980 – 1991	40	-	Disinvestment South Africa	(-250,-1)	CAR (-1,1): 0.28%
Wright & Ferris (1997)	US	1984 – 1990	116	-	Disinvestment South Africa	(-260,-11)	AR (0): -0.249%
McWilliams & Siegel (1997)	US	1986 - 1992	-	21	Employee relations	(-250,-50)	CAR (-10,10): -2,1%
Gunthorpe (1997)	US	1988 – 1992	-	69	Illegal/unethical behaviour	(-120,-1)	CAR: (-5,5): -2.32%
Karpoff & Lott (1999)	US	1979 – 1995	-	351	Corporate crime, fraud	(-230,-31)	CAR (-1,0): -0,45%
Teoh, Welch & Wazzan (1999)	US	1986 – 1989	10, 16, 46	-	Disinvestment South Africa	(-205,-5)	No effect
Thomsen & McKenzie (2001)	US	1982 – 1998		479	Product recalls	(-260.-11)	CAR: between -1,5 and -3%
Becchetti, Ciciretti & Hasan (2007)	US	1990 – 2004	263	-	Entry/exit of Domini 400 Social Index	2 months and 8 months	Exit CAR (-1,1): -3%
Keele & DeHart (2011)	US	2009	103	-	Environment	(-301,-46)	CAR (-2,2): -1.20%
Flammer (2013)	US	1980 - 2009	117	156	Environment	(-240,-41)	CAR (-1,0): -0.65%
Krüger (2015)	US	2001 - 2007	574	1,542	Community, Diversity, Employee relations, Environmental, Human rights, Product	(-250,-50)	CAR (-5,5): -0.88%, (-10,10): -1.31%

Flammer (2013) uses an event study in examining shareholders' reactions to CSR events, represented by news articles. She classified the events as "eco-friendly" or "eco-harmful", and found that eco-friendly behaviour caused a stock price increase, while eco-harmful behaviour caused a stock price decrease. The reaction to eco-friendly behaviour has decreased over the years, whereas the reaction to eco-harmful behaviour has become stronger. Davidson & Worrell (1992) examine the effect of product recalls on financial performance using event study. They find a significant negative effect of product recall announcements on stock value.

This thesis partly examines similar events as Flammer (2013) and Davidson & Worrell (1992), however I do not limit my research to these types CSR. I expand my research to CSR events towards the environment, towards consumers, towards employees, towards minorities and towards the community. This is done by analysing the events in five different categories, a framework proposed by Inoue & Lee (2011). These categories are: employee relations, product quality (proxy for consumer relations), community relations, environmental issues, and diversity issues (proxy for minorities/women and suppliers) (Inoue & Lee, 2011).

Krüger (2015) examined the effect of positive and negative CSR news on shareholder value, using events that have implications for all the firm's stakeholders (consumers, employees, etc.). He found that company's stock prices decline as a consequence of negative CSR events, and also decline slightly as a consequence of positive CSR events. The latter outcome is possibly due to agency costs, because managers improve CSR to improve their reputation with stakeholders, at the expense of shareholder value. This is compliant with the shareholder theory. Krüger also found that the negative CSR events concerning the community and the environment caused the largest decrease in firm value. For my research I am only interested in the effect of negative CSR events on shareholder value. The other difference from the work by Krüger (2015) is the data that I am going to use. Krüger (2015) uses the news articles from KLD (Kinder, Lydenberg and Domini) Research and Analytics from the period between 2001 and 2007. I will renew this research by using more recent data, from 2010 to 2016.

Frooman (1997) performed a meta-analysis of 27 event studies concerning negative CSR. Each of these event studies involved one type of illegal corporate behaviour, such as pharmaceutical product faults, criminal misconduct, false advertising suits, etcetera. By combining these event studies, Frooman's work is very similar to the objective of this thesis. He finds a substantial negative effect of the events on shareholder value. However, he did his research 20 years ago, using event studies that were even older, dating from 1981 to 1994. I use recent events to update his findings.

The most important contribution of this thesis to the existing literature on negative CSR is that it distinguishes the different categories and classifications of CSR. This is possible when using event study. In this way I can analyse the differences in the effects for every stakeholder group and study the role of severity and intentionality of negative CSR events.

CHAPTER 3 Hypothesis development

First of all, I am going to examine what the general effect of negative CSR is on shareholder value. My expectation is that negative CSR events will negatively affect shareholder value. I base my expectation on the stakeholder theory (Freeman, 1984), which states that it is in the best interest of the firm to maintain a positive relationship with all of its stakeholders. I expect that if a firm makes an effort to uphold its reputations with its employees, consumers, suppliers and the community, it will pay off in the form of shareholder value. If a firm does the opposite, and engages in actions that damage its reputation with its stakeholders, the enterprise value for its shareholders will decrease. A legitimate reason would be that costly situations occur as a consequence of bad CSR: expensive product recalls have to take place following flaws in production; employees will participate in strikes when treated poorly, consumers do not want to purchase the firm's products anymore when hearing about the wrongdoing, suppliers do not want to supply the firm anymore, and so on. All these consequences of negative CSR lead to a decrease in value because they bring along high expenses for the firm. I also believe these expenses are on average higher than expenses made by a company when engaging in positive CSR actions (for example the costs of environmental-friendly measures). Therefore, my first hypothesis is as follows:

Hypothesis 1: Negative CSR events negatively affect shareholder value.

When testing this hypothesis all the events are combined in one group. After categorizing all these events, new discoveries can be made. The different categories of CSR events (employee relations, product quality, community relations, environmental issues and diversity issues) can have different effects on shareholder value. When looking at each separate category, one can think of different reasons why events in this category could decrease shareholder value. Out of the different stakeholders: the consumer; the employee; the supplier and the community, the consumer is often the one perceived to be the most important to the company. The consumer's behaviour influences the company's direct revenue. *Customer is king*, as they say. Product quality directly affects the customer. If the customer is the most important, this category will contain events with the greatest effect. The categories beside *product quality* are primarily linked to stakeholder groups other than the consumer. When it is revealed that a company's product is flawed, or even dangerous, this leads to an immediate reaction from consumers in the form of lower demand or refund requests. Therefore, in this research I expect the effect of the events to be the strongest in the *product quality* category.

Hypothesis 2: The effect of negative CSR events on shareholder value is the strongest in the "Product quality" category.

In addition to categorizing according to stakeholder group, I classify all events as *severe* or *less severe*, and *deliberate* or *accidental*. Severe events include for example events where people died or got injured, events where a lot of people got affected or events with long-term negative consequences. Less severe events include events where less people or only one person got affected, events that could be easily resolved or events that did not have long-term consequences. Logical reasoning brings forward that severe events trigger a stronger reaction from shareholders than less severe events.

Hypothesis 3: Severe negative CSR events have a stronger negative effect on shareholder value than less severe events.

In this light one might say that deliberate events also trigger a stronger reaction than accidental events, since people generally feel that it is more severe if a firm deliberately did something wrong than if it was an accident. Deliberate events also include events where firms neglected safety rules which led to the negative event (explosions, e.g.). Accidental events are more likely to be forgiven by stakeholders and investors, because they know the firm had no control over what happened. They also expect the firm to do an effort to prevent these accidents in the future. Deliberate events might repeat itself because it can be in the firm's nature to act this way.

Hypothesis 4: Deliberate negative CSR events have a stronger negative effect on shareholder value than accidental events.

CHAPTER 4 Data & Methodology

4.1 Data

To analyse the effects of negative CSR events on stock prices I use the data from S&P 500 firms, from 2010 to 2016. A proxy for negative CSR events are news articles exposing certain actions that show a firm's negative CSR. The articles used for the analysis are found in *Factiva*, a database containing news articles from thousands of international newspapers from more than 200 different countries. I perform a manual subjective search. To limit the results when searching this database, I filter for articles from the following prominent US newspapers: *The Wall Street Journal*, *The New York Times*, *The New York Post*, *The Washington Post* and *The Financial Times*. I also filter for a few topics that are related to the different categories of negative CSR that I want to focus on, these topics being: Gross misconduct / malpractice, Product / consumer safety, Workplace safety / health issues, Workplace diversity, Workplace discrimination, Occupational health, Labour disputes and Environmental crime. I only look for articles concerning S&P 500 companies. Factiva has an option to filter for articles concerning a certain firm. You can also insert more than one firm in this search field. To search in a more organized way, I do not insert all the S&P 500 firms at once. First, I only insert the S&P 500 companies starting with the letters A, B and C. This results in approximately 300 articles to scan through. When I am done with these letters and selected proper articles and dates of the events, I continue with the companies starting with the letters D, E and F. I proceed in this manner until I have searched all the S&P 500 companies. I put every relevant event in the right category. Examples of the type of articles that belongs to each category are shown in table 2 on the next page.

In addition to allocating each event to a category, I also classify them as either severe or less severe. This allows me to examine what role severity plays in the effect on stock prices. To examine the effect of intentionality, I classify the events as deliberate or accidental.

I find a total of 102 relevant articles about negative CSR actions. These articles concern 70 different firms, since several firms engage in more than one negative CSR activity. In table 3 the exact distribution of the events is represented according to category, severity and intentionality. Table 4 shows the combinations of severity and intentionality. This table gives an image of how many severe events were deliberate and how many accidental, and how many less severe events were deliberate and how many accidental.

Table 2: Examples of articles of each negative CSR category

	Employee relations	Product quality	Community relations	Environmental issues	Diversity issues
Title	**'I had to wear Pampers': The cruel reality the people who bring you cheap chicken allegedly endure**	**GM Now Says It Detected Ignition Switch Problem Back in 2001**	**NTSB Faults PG&E for Pipeline Explosion**	**Benjamin Moore tried to 'quash' probe into water near its plant: suit**	**Fired McDonald's workers say they were dismissed for being minorities**
Newspaper	The Washington Post	The Wall Street Journal	The Wall Street Journal	The New York Post	The Washington Post
Date	May 11, 2016	March 12, 2014	August 30, 2011	December 17, 2016	January 22, 2015
Company	Tyson Foods	General Motors	PG&E	Benjamin Moore	McDonald's
Content	*Employees working in the poultry processing plants experience inhumane working conditions, such as having to wear diapers so they do not waste time going to the bathroom.*	*General Motors admits knowing about the ignition switch defect, that has killed 13 drivers, back in 2001, but the vehicles did not get recalled until 2014.*	*The National Transportation Safety Board has concluded that pipeline company PG&E failed to ensure the pipe's safety, leading to the explosion in San Bruno in 2010, which killed 8 people and destroyed 38 homes.*	*The paint retailer, owned by Berkshire Hathaway, fired its director of environmental health, safety and security, who was investigating the company and accused it of contaminating drinking water and operating unsafe facilities.*	*10 ex-employees of McDonald's franchises, of which 9 African American and 1 Hispanic, filed a lawsuit claiming that they got fired because the supervisors told them there were too many black people working there.*

Table 3: Distribution of each category

	Employee relations	Product quality	Community relations	Environmental issues	Diversity issues	All
Severe	13	13	11	8	2	47
Less severe	13	13	10	2	17	55
Total	**26**	**26**	**21**	**10**	**19**	**102**
Deliberate	18	11	17	5	15	66
Accidental	8	15	4	5	4	36
Total	**26**	**26**	**21**	**10**	**19**	**102**

Table 4: Combinations of severity and intentionality

	Severe	Less severe	Total
Deliberate	25	41	66
Accidental	22	14	36
Total	47	55	102

Out of these 102 articles, 5 are excluded from the research, since there is no data available for these events. The final sample consists out of 97 events. As can be seen in the table 3, events in the *diversity issues* category are often less severe, since these events mostly affect only one or a few people. Also, these can be cases where a firm gets criticised because it does not hire enough women or minorities. This is not a severe malpractice. Also, many of the events in this category are deliberate, because they often involve discrimination or sexual harassment and this does not happen "by accident". Same goes for *employee relations* events. Many of these events are cases where the employee is mistreated by the employer. This also happens intentionally.

One remarkable fact arises from the table 4; there appears to be a larger number of less severe deliberate events in the sample than severe deliberate events. Also, there are more severe accidental events than less severe accidental events, although this difference is smaller. This is not in line with the reasoning behind the 4th hypothesis; that severity and deliberateness are correlated. However, I do not change one of these hypotheses. I still expect both severe and deliberate events to cause a stronger negative reaction.

4.2 Methodology

I use the software program *Eventus* for performing the event studies. Eventus is specially designed for event studies, and uses company data from The Center for Research in Security Prices (CRSP). An event study measures the reaction of the stock price on a certain event. The impact of the event is measured by the abnormal return (AR):

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

Where *R* is the actual return of the stock of firm *i* at event date *t*, and *E* is the expected return when the event would not have taken place. For composing the expected return, I assume that the firm's return has a linear relationship with the market return:

$$E(R_{it}|X_t) = \alpha_i + \beta_i RM_t + \varepsilon_{it}$$

Where *RM* is the market return.

These abnormal returns must be aggregated over time and across securities, to include all days of the event period and all firms of the sample. To aggregate over time the cumulative abnormal return (CAR) should be composed, which is the sum of these abnormal returns over the event period:

$$CAR_{i(q,s)} = \sum_{t=q}^{s} AR_{it}$$

Where q is the first day of the event period and s is the last day of the event period.

Then the abnormal returns should be aggregated across all firm securities. Therefor the average abnormal returns (AAR) of all the firms is needed:

$$AAR_t = \sum_{i=1}^{N} AR_{it}$$

At last the cumulative average abnormal return (CAAR) is composed which includes all the event periods and all the securities:

$$CAAR_{i(q,s)} = \sum_{t=q}^{s} AAR_t$$

The CAAR is simply referred to as CAR in the result section, but it still stands for the cumulative *average* abnormal return.

I run the first event study with all the events in the sample, to test the first hypothesis. As a market index I use the CRSP Equally Weighted index. I choose an estimation window to estimate the parameters of the expected return. This estimation period starts 250 days before the event, and ends 50 days before the event, covering a total period of 200 days. In previous literature this is a commonly used estimation window. As can be seen in table 1, authors often use an estimation window that is (roughly) the same. McWilliams & Siegel (1997), Flammer (2013) and Krüger (2015) for instance use similar estimation windows.

To compute the abnormal returns for each day, I first choose and event period of 21 days; 10 days before the event date, and 10 days after the event date. I then choose different event windows; [-10,-1], [-1,0], [0,1] and [1,10], with day 0 as the event date: the date that the article is published. I am interested in the days up to the event because it is not certain if the event actually happened exactly on the day it got published by the newspapers. It could have happened one or two days before the media acted upon it. Flammer (2013) also performs different event studies prior to the event date itself. In other researches shown in table 1 event windows are used of a few days surrounding the event to sometimes 20 days surrounding the event. Larger event windows for stock prices can contain a lot of noise, but smaller ones might not capture all the valuable information. For this reason I am interested in the different results provided by these larger and smaller event windows. After I have chosen these

time frames I can run the first event study. I change the date of the events that fell in the weekend to the Monday after, when the market was not closed anymore. 5 events are dropped; 4 because the event date is outside of the period with available data, 1 because there are too many days in the event period with missing data. This leaves me with 97 events.

Subsequently I change the data, leaving all the events out except for the events in the category *Employee relations*. I run a second event study exclusively with the events of this category. I do the same with the events in the other four categories. With these event studies I can test the second hypothesis.

For the third hypothesis, I divide the events by severity, combining the severe events in one group and the less severe events in the other group. I run an event study for both groups, to see in which group the effect of the events on stock price is the strongest.

I then divide the events by intentionality to test the fourth hypothesis. Again, the deliberate events go in one group and the accidental events in the other. I run an event study for both groups to analyse what kind of events have the strongest effect.

CHAPTER 5 Results

5.1 Hypothesis 1: Negative CSR events negatively affect shareholder value.

5.1.1 Findings

To test the first hypothesis, I run an event study with all the 97 events. Table 5 presents the Average Abnormal Returns (AAR) for all the days in the event period [-10,10]. The first significant abnormal return occurs one day prior to the event: a small negative abnormal return of -0.18%, significant at the 0.10% level for the Patell Z test (-1.53). The reason for this could be that some events happened one day before they got published by the newspapers. On the event date the abnormal return is -0.64%, very significant at the 0.001% level for both the Patell Z test (-4.48) and the Portfolio Time-Series t test (-4.62). Figure 1 presents the AARs for day -10 to day 10 in a graph. It can be seen that the largest effect takes place between day -1 and day 1. However, as shown in table 5, the effect on day 1 has no statistical significance. Only the abnormal returns on day -1 and day 0 are statistically significant. The figure shows a regular market movement on the other days surrounding the event. Only the effect on day -8 has a small significance level of 0.10%, but this is most likely caused by measurement error.

Table 6 presents the Cumulative Abnormal Returns (CAR) for the different event windows. The first event window, from 10 days prior to the event to 1 day prior to the event, shows a negative CAR of -0.65%, significant at the 0.10% level for both the Patell Z test (-1.57) and the Portfolio Time-Series t test (-1.47). From 1 day prior to the event to the event date itself the CAR is -0.82%, significant at the 0.001% level for the Patell Z test (-4.25) and the Portfolio Time-Series t test (-4.18). Also from the event date to 1 day after the event, there is a significant negative CAR of -0.71, at the 0.01% level for the Patell Z test (-2.99) and the 0.001% level for the Portfolio Time-Series t test (-3.60).

Table 5: Average Abnormal Returns H1

This table shows the Mean Abnormal Returns in % for the 21 days surrounding the event (10 days before the event date and 10 days after the event date). N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test.

Day	N	Mean Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
-10	97	0.00%	43-54	0.469	0.005
-9	97	-0.01%	57-50	-0.316	-0.068
-8	97	-0.18%	45-52	-0.878	-1.283$
-7	97	-0.10%	50-47	-0.951	-0.697
-6	97	0.09%	50-47	0.579	0.681
-5	97	-0.12%	48-49	-0.862	-0.883
-4	97	-0.05%	41-56	-0.541	-0.385
-3	97	-0.04%	42-55	-0.315	-0.255
-2	97	-0.07%	47-50	-0.614	-0.474
-1	97	-0.18%	46-51	-1.530$	-1.281
0	97	-0.64%	44-53	-4.476***	-4.624***
1	97	-0.06%	50-47	0.25	-0.464
2	97	0.10%	52-45	0.632	0.721
3	97	-0.14%	50-47	-1.119	-1.007
4	97	-0.26%	45-52	-1.807*	-1.869*
5	97	0.06%	44-53	1.139	0.429
6	97	-0.01%	50-47	0.172	-0.076
7	97	0.13%	50-47	0.576	0.9
8	97	0.00%	47-50	0.248	0.004
9	97	0.11%	52-45	1.037	0.788
10	97	-0.06%	46-51	-0.376	-0.428

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Figure 1: Average Abnormal Returns H1

—— AAR
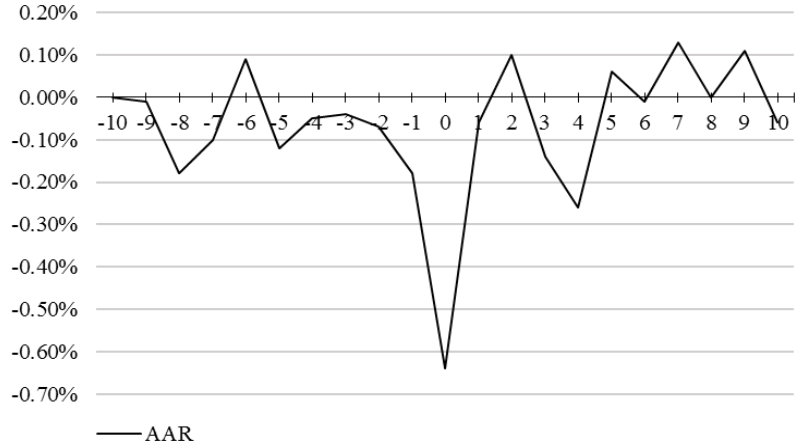
Table 6: Cumulative Abnormal Returns H1

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,1] and [1,10]. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
(-10,-1)	97	-0.65%	43-54	-1.568$	-1.467$
(-1,0)	97	-0.82%	41-56	-4.247***	-4.175***
(0,+1)	97	-0.71%	42-55	-2.988**	-3.598***
(+1,+10)	97	-0.14%	52-45	0.238	-0.317

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

5.1.2 Discussion

These results support the first hypothesis, that there is a significant negative effect of negative CSR events on shareholder value. This is in line with the Stakeholder Theory; a company benefits from maintaining solid relationships with its stakeholders. Failing to do so results in a decrease in shareholder value. By damaging the relationship with its stakeholders, a company often has to undergo costly measures to fix its reputation. Product recalls, strikes, lawsuits and fines are among the consequences of negative CSR actions. Investors want to avoid companies that have to deal with these consequences. This outcome is supported by previous literature, for example by Margolis et al. (2009) and Davidson & Worrell (1992).

5.2 Hypothesis 2: The effect of negative CSR events on shareholder value is the strongest in the "Product quality" category.

5.2.1 Findings

To test the second hypothesis, I want to find out in which category the effect of negative CSR events on shareholder value is the strongest. I separately run 5 event studies with the events from each different category. The results are presented in table 7. Because these samples are smaller and the statistical tests that I use might not verify a significant effect, I add another non-parametric statistical test, the Generalized Sign Z test. This also tests the robustness of the results. I also add the event window [0,0], since this smaller time frame can increase the significance of the results.

In the *employee relations* category, there is a small significant effect in the 2-day time frame

[-1,0]. The CAR here is -0.50%, significant at the 0.10% level for the Portfolio Time-Series t test (-1.35). In the [0,0] time frame the effect is a bit more significant. The CAR on this event date itself is -0.50% with a significance at the 0.10% level for the Patell Z test (-1.49) and the 0.05% level for the Portfolio Time-Series t test (-1.91). This means there was a CAR of -0.00% on the day before the event.

In the *product quality* category the significance levels are noticeably high for almost every different event window. The negative CAR is already very high in the event window from 10 days prior to the event to 1 day prior to the event: -3.15%, significant at the 0.001% level for the Patell Z test (-3.97) and the Portfolio Time-Series t test (-3.85), and at the 0.05% level for the Generalized Sign Z test (-1.88). The negative CAR remains very high in the time frame [-1,0], from 1 day prior to the event to the event date itself, with a CAR of -2.68%, also with very high significance levels of 0.001% for the Patell Z test (-6.79) and the Portfolio Time-Series test (-7.31). The negative abnormal return on the even date itself [0,0] is -1.84%, also relatively high compared to the other categories. Also for this CAR the significance levels are high at 0.001% for the Patell Z test (-6.47) and the Portfolio Time-Series test (-7.11), and at 0.05% for the Generalized Sign Z test (-2.28). On the time frame [0,1] the negative CAR is slightly less than of [-1,0], but still high with a percentage of -2.03, significant at the 0.001% level for the Patell Z test (-4.51) and the Portfolio Time-Series test (-5.54). From 1 day after the event to 10 days after the event the CAR remains negative with a relatively large percentage of -1.27, but the significance strongly decreases.

In the *community relations* category the CARs are all relatively small and not significant using any of the three statistical tests. No conclusions can be derived from these results.

In the *environmental issues* category there is a significant negative CAR in one of the time frames: from the event date to 1 day after. The negative CAR in this time frame is -0.09%, significant at the 0.05% level for the Generalized Sign Z test (1.89). The other statistical tests show no significance.

In the last category, *diversity issues*, there is also only a significant negative CAR for the 2-day event window [0,1], however this CAR is relatively high, with a percentage of -0.85. It has a significance level of 0.05% for the Portfolio Time-Series t test (-1.82), and of 0.10% for the Patell Z (-1.50) test and the Generalized Sign Z test (-1.62).

Figure 2 presents the AARs for day -10 to day 10 of each category and for the whole sample in a graph.

Table 7: Cumulative Abnormal Returns H2

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,0], [0,1] and [1,10] for the different categories of CSR. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test, the scores of the Portfolio Time-Series t test and the scores of the Generlized Sign Z test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
Employee relations						
(-10,-1)	26	0.62%	14-12	0.792	0.75	0.512
(-1,0)	26	-0.50%	11-15	-1.15	-1.348$	-0.665
(0,0)	26	-0.50%	12-14	-1.489$	-1.913*	-0.273
(0,+1)	26	-0.10%	11-15	0.081	-0.259	-0.665
(+1,+10)	26	-0.39%	15-11	0.285	-0.464	0.904
Product quality						
(-10,-1)	24	-3.15%	7-17	-3.965***	-3.851***	-1.875*
(-1,0)	24	-2.68%	8-16	-6.791***	-7.307***	-1.466$
(0,0)	24	-1.84%	6-18	-6.469***	-7.111***	-2.283*
(0,+1)	24	-2.03%	8-16	-4.508***	-5.540***	-1.466$
(+1,+10)	24	-1.27%	10-14	-1.499$	-1.547$	-0.649
Community relations						
(-10,-1)	18	0.15%	9-9	-0.144	0.153	0.13
(-1,0)	18	-0.05%	7-11	-0.721	-0.113	-0.814
(0,0)	18	0.14%	9-9	-0.142	0.466	0.13
(0,+1)	18	-0.02%	9-9	-0.35	-0.048	0.13
(+1,+10)	18	0.31%	9-9	0.484	0.323	0.13
Environmental issues						
(-10,-1)	10	-1.29%	4-6	-0.492	-0.912	-0.639
(-1,0)	10	-0.45%	5-5	-1.075	-0.709	-0.006
(0,0)	10	-0.49%	7-3	-1.271	-1.087	1.259
(0,+1)	10	-0.09%	8-2	0.083	-0.14	1.891*
(+1,+10)	10	0.74%	7-2	0.679	0.523	1.259
Diversity issues						
(-10,-1)	19	0.37%	9-10	0.484	0.357	-0.248
(-1,0)	19	0.16%	10-9	0.863	0.332	0.211
(0,0)	19	-0.15%	10-9	-0.042	-0.444	0.211
(0,+1)	19	-0.85%	6-13	-1.500$	-1.821*	-1.624$
(+1,+10)	19	0.73%	11-8	0.926	0.702	0.67

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Figure 2: Average Abnormal Returns H2
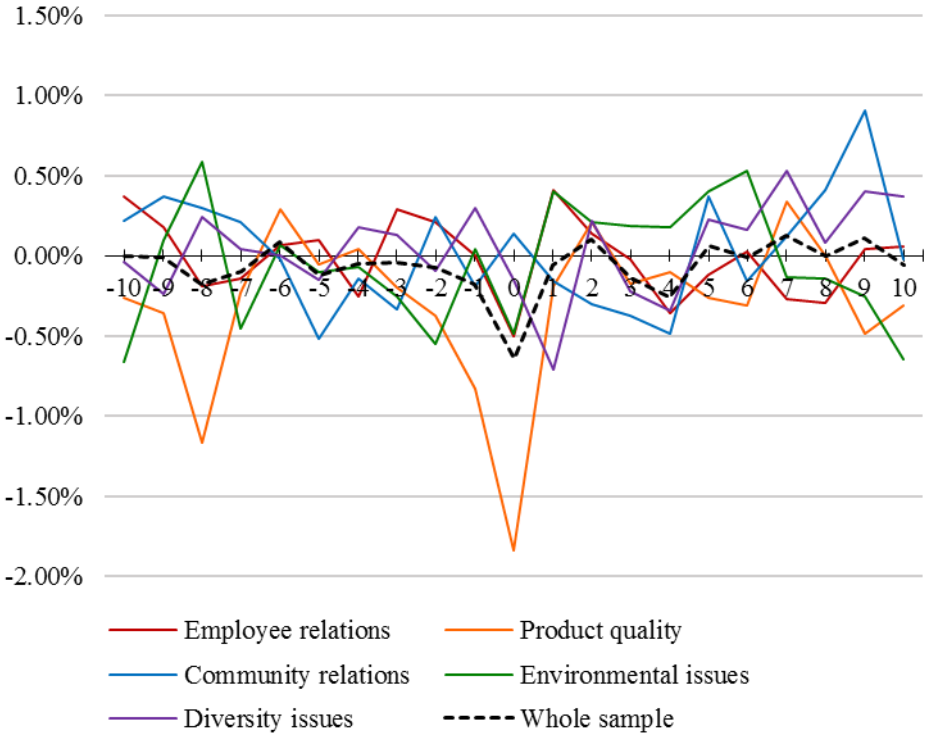
5.2.2 Discussion

The results of this event study support the second hypothesis; The effect of negative CSR events on shareholder value is the strongest in the *product quality* category. For each time frame that I used the negative CARs in this category were larger than in any other category. Furthermore, the significance levels of these CARs were overall higher than those of the CARs in the other categories. This implies that the effect of negative CSR news concerning product quality of a company evokes the strongest reaction, with the largest decrease of shareholder value as a result. It is striking that the effect is already very strong and significant 10 days to 1 day prior to the event (CAR [-10,-1] = -3.15%). This CAR is higher than the CAR in the 2-day time window [-1,0]. This finding does not support the idea that newspapers can have a one-day delay at most, and that there would not be a large significant effect before that day. A possible explanation for this is that the dissatisfaction of customers about the product could have become publicly known days before the newspaper editors feel that it is important enough and worthy of publishing. Also, some of the events in this category are product recalls, these often have already occurred a few days before the media picks up on it. As soon as a company discovers that it is selling a potentially defective or hazardous product, it has to report it to the U.S. Consumer Product Safety Commission (CPSC). So investors might already know in advance that the company is in a situation that harms customer relations, which causes a decrease in shareholder value.

However, also for the smaller time frames surrounding the event, the negative CARs are very high, supporting the theory that when the event becomes more generally known through media, there is a very strong effect of this news on shareholder value. This implies that first and foremost, firms should make an effort to optimally serve their customers, and avoid negative CSR actions that harm the relationship with this stakeholder group. This supports the view of Martin (2010), who states that a firm's main objective should be customer satisfaction. Thomas & McKenzie (2001) found similar values (between 1.5% and 3%) of CARs in their research on product recalls. The large significance of the results in the product category was also observed by Krüger (2015). His results where most significant in this category, however the effect was strongest in the environment and community categories, which is not in line with the findings of this thesis. This implies that there is a difference between the economical and statistical significance in the effect of negative CSR.

The *diversity issues* category shows the second strongest effect of negative CSR events on stock value. The return is significantly 0.85% lower in the time window [0,1]. Hereafter, the *employee relations* category shows the strongest effect; -0.50% CAR in time windows [0,0]. These two categories both represent for most part the stakeholder group of employees. These results are in line with the observations of McWilliams & Siegel (1997), who find a slightly higher negative CAR for negative CSR events concerning employees. The significant negative CARs in these categories suggest that the discontent and frustration of employees can seriously harm shareholder value. Employees fulfil and important role; firms should commit to serving this stakeholder group well, avoiding negative working environments and investing in proper diversity programs.

The e*nvironmental issues* category has a weak effect of -0.09% CAR in [0,1], and this result only has a small significance using one of the three statistical tests. An explanation can be that the sample of events in this category is relatively small. In the *community relations* category there is no significant effect at all. This might be the case because people in the community are less connected to the firm's profits than consumers and employees. However, a larger sample potentially brings forward different findings.

5.3 Hypothesis 3: Severe negative CSR events have a stronger negative effect on shareholder value than less severe events.

5.3.1 Findings

For the third hypothesis, I want to know if the severity of the events plays a role in the effect of negative CSR events on shareholder value. I divide the events into two groups; one with the severe events and one with the less severe events. Subsequently I run an event study for both groups. The results are presented in table 8.

The first thing that can be noticed is the fact that the results for severe events are very significant, however the results for the less severe events have no significance at all. This is not surprising. Around the event date, severe news articles have a negative CAR of -1.72% in the time window [-1,0], with a significance level of 0.001% for both the Patell Z test (-5.67) and the Portfolio Time-Series t test (-6.24). In the event window [0,1] the CAR is -1.27%, also with a significance level of 0.001% for the Patell Z test (-3.73) and the Portfolio Time-Series t test (-4.61). The results for less sever events are all low and insignificant.

Figure 3 presents the AARs for day -10 to day 10 of severe and less severe events in a graph.

Table 8: Cumulative Abnormal Returns H3

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,1] and [1,10], for severe events and for less severe events. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
		Severe			
(-10,-1)	45	-1.19%	19-26	-1.639$	-1.927*
(-1,0)	45	-1.72%	16-29	-5.668***	-6.239***
(0,+1)	45	-1.27%	20-25	-3.728***	-4.611***
(+1,+10)	45	-0.57%	22-23	-0.229	-0.934
		Less severe			
(-10,-1)	52	-0.18%	24-28	-0.221	-0.294
(-1,0)	52	-0.05%	25-27	-0.218	-0.172
(0,+1)	52	-0.22%	22-30	-0.537	-0.822
(+1,+10)	52	0.24%	30-22	0.639	0.392

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Figure 3: Average Abnormal Returns H3
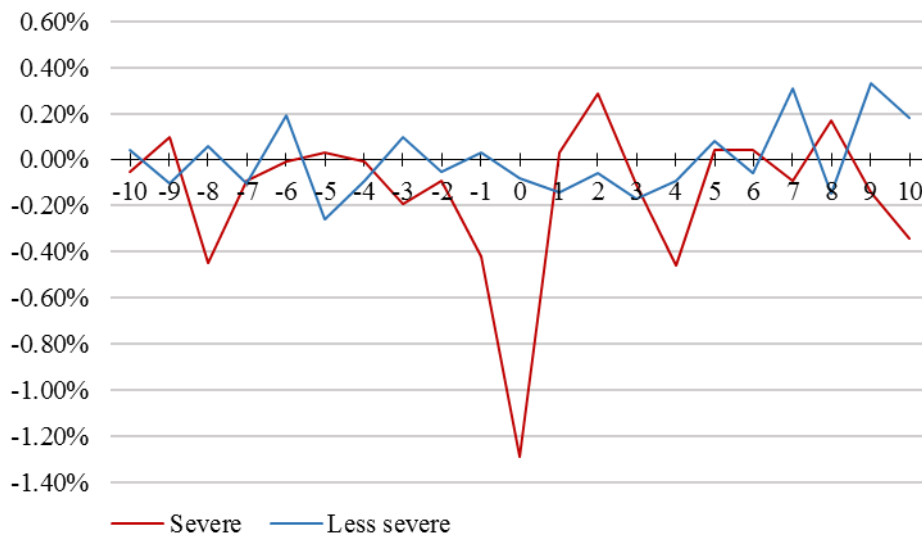
5.3.2 Discussion

These results are not entirely in line with the third hypothesis. It is not the case that the effect of severe negative CSR events on shareholder value is stronger than the effect of less severe events, because less severe events do not trigger any significant response at all. However, the effect of severe negative events is indeed very strong and very significant. The effect is actually twice as strong as that of all the events taken together (-1.72 > -0.82 and -1.27 > -0.71). Therefore, we can say that severity of the event certainly plays a role in the effect on shareholder value. Even more so, an event has to be severe to even have a significant negative effect on shareholder value. As can be concluded from the results, if an event is not perceived as severe, it does not negatively affect shareholder value. This is a logical finding. Severe events often affect many people, cause injuries or even death, have long-term negative consequences for the different stakeholder groups and are not easily resolved. Firms have to cope with the aftermath, which is often costly. Less severe events often do not affect many people, can be small mistakes and are often easily dealt with. Investors do not significantly react when these events come in the news.

5.4 Hypothesis 4: **Deliberate negative CSR events have a stronger negative effect on shareholder value than accidental events.**

5.4.1 Findings

To test the last hypothesis, I divide all the events into two groups, one with all the deliberate events, and the other with all the accidental events. I run event studies with both groups to analyse the effect of intentionality of negative CSR actions on shareholder value. Table 9 presents the results of these

two event studies. Figure 4 presents the AARs for day -10 to day 10 of deliberate and accidental events in a graph.

Table 9: Cumulative Abnormal Returns H4

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,1] and [1,10], for deliberate events and for accidental events. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
Deliberate					
(-10,-1)	62	0.34%	31-31	0.141	0.625
(-1,0)	62	-0.60%	27-35	-2.575**	-2.468**
(0,+1)	62	-0.54%	28-34	-1.809*	-2.214*
(+1,+10)	62	-0.40%	30-32	-0.309	-0.728
Accidental					
(-10,-1)	35	-2.39%	12-23	-2.798**	-3.092***
(-1,0)	35	-1.21%	14-21	-3.644***	-3.489***
(0,+1)	35	-1.00%	14-21	-2.567**	-2.898**
(+1,+10)	35	0.32%	22-13	0.807	0.412

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Figure 4: Average Abnormal Returns H4
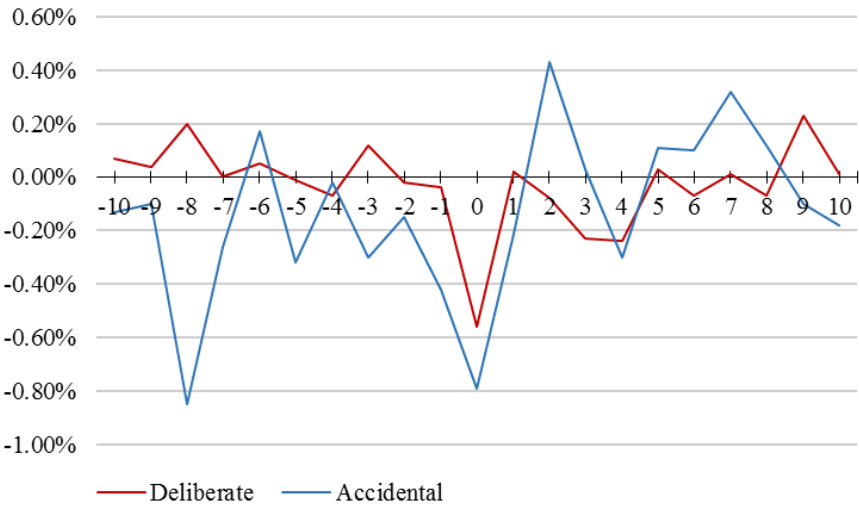
Both kind of events have significant negative CARs around the event date. Deliberate events have negative CARs in event windows [-1,0] and [0,1]. One day before the event to the event date itself deliberate events cause a CAR of -0.60%, significant at the 0.01% level for both the Patell Z test (-2.58) and the Portfolio Time-Series t test (-2.47). From the event date to one day after, the CAR is -0.54%, significant at the 0.05% level for both the Patell Z test (-1.81) and the Portfolio Time-Series t test (-2.21).

The results in the accidental event category have a larger significance. There is already a significant result in the time window [-10,-1], as opposed to the deliberate event category. Here the negative CAR is already relatively high, with a percentage of -2.39. This CAR is significant at the 0.05% level for the Patell Z test (-2.80), and significant at the 0.001% level for the Portfolio Time-Series t test (-3.09). In time window [-1,0] the CAR is -1.21%, with a significance level of 0.001% for both the Patell Z test (-3.64) and the Portfolio Time-Series t test (-3.49). In time window [0,1] the CAR is -1.00%, with a significance level of 0.01% for both the Patell Z test (-2.57) and the Portfolio Time-Series t test (-2.90).

5.4.2 Discussion

It is interesting to see that the effect of accidental events on shareholder value is larger and more significant than the effect of deliberate events. This does not support the 4th hypothesis. It should therefore be rejected: Deliberate negative CSR events do not have a stronger negative effect on shareholder value than accidental events. In all the significant event windows, the CAR of the accidental events is approximately two times as large as that of deliberate events. These CARs are also a little more significant. An explanation for this can be that most of the accidental CSR events in this sample fall in the *product quality* category. This can be seen in table 3: 15 out of the 36 accidental events (35 in the results because 1 is dropped) are categorized as *product quality* events. As results showed when testing hypothesis 2, the effect of CSR events is the strongest in the *product quality* category. This might clarify why accidental events show such a strong effect. These events were often revealed mistakes in production, discovery of bacteria in food products, accidents caused by products, etcetera. These events can be deliberate, for example because of a lack of control in production facilities or because firms do not implement necessary product changes or improvements in order to save costs. However, many of these events are accidental, because a company does not want to harm its consumers, knowing this will lead to costly product recalls, potential lawsuits and loss of customers. The large share of accidental events in this category can also explain why the effect is already very strong in the time window [-10,-1]. The negative CAR for this period is almost twice as large as the CAR in the subsequent time window [-1,0], and 2.4 times as large as that in time window [0,1]. As explained in the discussion of hypothesis 2, it can take several days for newspapers to pick up on events concerning product quality.

As can also be seen in table 3, the deliberate negative CSR events have a larger share in the *community relations* category than the accidental events (17>4). This might also be an explanation for the weaker effect of deliberate events, since there was no significant effect found in this category. Also in the *diversity issues* and *employee relations* categories the share of deliberate events is larger, and the effect of these kind of events is smaller than of *product quality* events.

Another reason could be that the sample accidental events contains a higher proportion of severe events (22 out of 36) than the sample of deliberate events (25 out of 66), which can be seen in table 4. Severe events were found to have a strong significant effect, while less severe events did not show any effect at all.

I expect one of these potential explanations to verify the outcome. Logical reasoning would predict otherwise; that deliberate negative CSR actions cause the strongest decrease in value. One would expect investors to be more forgiving if a firm did not act on purpose. And if a firm did consciously engage in the negative CSR action, investors could fear repetition of the event in the future. However, this thesis does not find evidence supporting this reasoning.

5.5 Robustness test

To test the robustness of the results I perform the event studies again using the CRSP Value Weighted index as a market index, instead of the CRSP Equally Weighted index. The Value Weighted index takes into account the size of the different companies. A few robustness tests have already been integrated in the research, such as several event windows and a variety of statistical tests. This is another way of testing the robustness of the results. If the results from event studies using the Value Weighted index do not differ significantly from the main results in the previous sections, it can be concluded that they are reliable. The tables of the event studies with this robustness check can be found in Appendix B.

The results and significance of all the events together stay more or less the same using a Value Weighted index. Also in the results of the samples per CSR category no big changes occur, except the results and significance of the events in the diversity category decreases slightly. However, there is still a significant result in the [0,1] event window using the Generalized Sign Z test. For the third and fourth hypothesis, on the differences in severity and intentionality respectively, no significant changes occur. This robustness test confirms that all the results are reliable.

CHAPTER 6 Conclusion

What are the consequences of poor CSR on firm performance? This thesis has pursued to answer this question comprehensively. By searching the news and studying data from 70 different S&P 500 firms from 2010 to 2016, I found that there is a significant negative effect of negative CSR events on shareholder value. This finding is in line with the existing literature. After categorizing the events according to the affected stakeholder group, it appeared that negative CSR events concerning the consumer (product quality) have the strongest negative effect on shareholder value. Hereafter events concerning the employee (diversity issues and employee relations) have the strongest negative effect. I found that less severe events do not have a significant effect on shareholder value, and the effect of the CSR events strongly increases when these are left out. Negative CSR events that occurred accidentally, out of control of the firm, cause a stronger decrease in shareholder value than events that happened as a result of the firm's wrongdoing.

These findings shed light on the differences between different kinds of negative CSR events. Previous literature has mainly focused on one specific kind of negative CSR, so this comparative analysis is a contribution to the existing body of knowledge.

The results imply that it is most important for a firm to maintain a solid relationship with the consumer. Harming this relationship has the worst consequences for the firm compared to the relationships with other stakeholders. The type of events that involve consumers are often mistakes in production causing products to be flawed or unsafe. These mistakes could often have been prevented, even if they were caused by accident. It is a firm's responsibility to carefully watch over the production process and ensure that all the products are adequate before they are sold. Of course, this is a costly procedure, but not strictly following this procedure with unsafe products as a result can cause a decrease in shareholder value that is even more costly. Some firms deliberately sell products that are flawed, misleading or unsafe. This might generate a higher profit for a while, but as soon as it is discovered and published by the media, the negative effect on shareholder value excels these cost savings.

Also, media attention on negative CSR events that affect employees causes a significant decrease in shareholder value. Firms should commit to serving its employees well, creating a proper and safe working environment and invest in diversity programs, to avoid negative CSR events harming employees.

In this research severity of the events mattered more to investors than intentionality. It is logical that severe events cause a stronger decrease in shareholder value than less severe events, however one would expect deliberate events to cause a stronger decrease than accidental events. This opposite result of this thesis can be caused by the distribution of the sample. A larger share of accidental events than of deliberate events was severe. Further research should leave less severe events

out, and increase the number of severe events in the sample. This will create the opportunity to investigate the effect of intentionality of events with an even distribution, giving a more reliable outcome. It is also interesting to see what the differences among the CSR categories are when only including severe events. However, further research has to take into account that the management of firms has incentive to downplay or hide the severity of the event, to minimize the losses due to negative publicity and potential insurance claims.

This thesis is subject to several limitations. First of all, it only addresses the short-term effects of negative CSR. To see what a firm's losses of negative CSR are on the long run, it is necessary to measure the long-term effects. It is also interesting to see how long it takes before a firm recovers from negative news. Next to stock price, other indicators of financial performance – for example return on assets or return on equity – can also be measured when studying the long-term effects. Regression analysis would be more appropriate than event study to examine the long-term effects of CSR, however then the measurement error, omitted variable bias and reverse causality issues (Waddock & Graves, 1997) have to be dealt with. A suitable measurement of long-term effects while using event study is the buy-and-hold abnormal return (BHAR). However, an event study with BHARs still suffers from reverse causality problems.

When exploring the long-term relationship between CSR and financial performance, there are some concerns that have to be addressed. Especially the fact that this relationship is biased, because CSR investment decisions are based on strategic management choice. Managers decide how and how much to invest in CSR with firm-specific traits in mind, like norms and values and the culture of the firm. The effect of CSR is also influenced by firm-specific traits. These firm and management characteristics are not measurable and simultaneously related to CSR (Garcia-Castro et al., 2011).

Another example that shows the difficulty in analysing the long-term relationship is the case of Toyota airbags. Last year a huge recall took place for Toyota vehicles with faulty airbags that even caused deaths. Eventually not Toyota but the manufacturer of the airbags, Takata, was held responsible and had to bear the costs. These were massively high because of the many lawsuits and recall costs owed to Toyota, that the company went bankrupt. Events like this make it more challenging to measure negative CSR and its effects.

It has also been found that different types of firms have different optimal levels of CSR (McWilliams & Siegel, 2001) (Luo & Bhattacharya, 2006). Further research on the long-term effects of CSR needs to find a way to deal with these problems and provide more insights. Further research can also expand this research by adding more tests, for example the standardized cross-sectional test developed by Boehmer et al. (1991), and by adding more events from other sources. The website of the Business & Human Rights Resource Centre (https://www.business-humanrights.org/) is for example another good source for CSR cases. I collected the data manually, but there are other ways of data collection that provide a larger sample at once, for example by means of sentiment analysis with software like MeaningCloud.

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Appendix A: List of companies

Table A1: List of companies with negative CSR event(s)

Company	Ticker	CUSIP	Industry	Market cap. (in millions USD)
Abbott Laboratories	ABT	2824100	Health Care	56.57
Amazon.com Inc	AMZN	23135106	Consumer Discretionary	357.69
American Airlines Group	AAL	02376R102	Industrials	23.69
American Express Corp	AXP	25816109	Financials	66.97
Anadarko Petroleum Corp	APC	32511107	Energy	38.44
Apple Inc	AAPL	37833100	Information Technology	603.25
AT&T Inc	A	00206R102	Telecommunication Services	261.09
Bank of America Corp	BAC	60505104	Financials	222.16
Baxter International Inc.	BAX	71813109	Health Care	23.93
Berkshire Hathaway	BRK.B	84670702	Financials	401.62
Best Buy Co. Inc.	BBY	86516101	Consumer Discretionary	9.04
BlackRock	BLK	09247X101	Financials	62.07
Capital One Financial	COF	14040H105	Financials	41.89
CBS Corp	CBS	124857202	Financials	26.26
Chevron Corp	CVX	166764100	Energy	222.63
Chipotle Mexican Grill	CMG	169656105	Consumer Discretionary	10.87
Citigroup Inc.	C	172967424	Financials	164.76
Coca Cola Company	KO	191216100	Consumer Staples	177.78
Comcast Corp	CMCSA	20030N101	Consumer Discretionary	164.05
Consolidated Edison	ED	209115104	Utilities	22.47
Delta Air Lines Inc	DAL	247361702	Industrials	35.95
Dollar General	DG	256677105	Consumer Discretionary	21.52
Dollar Tree	DLTR	256746108	Consumer Discretionary	19.11
Dow Chemical	DOW	260543103	Materials	60.78
Du Pont (E.I.)	DD	263534109	Materials	63.34
Duke Energy	DUK	26441C204	Utilities	54.33
Eastman Chemical	EMN	277432100	Materials	11.01
Entergy Corp	ETR	29364G103	Utilities	13.16
EOG Resources	EOG	26875P101	Energy	58.30
Exxon Mobil Corp	XOM	30231G102	Energy	374.40
Facebook, Inc	FB	30303M102	Information Technology	332.72
FedEx Corporation	FDX	31428X106	Industrials	43.99
Ford Motor	F	345370860	Consumer Discretionary	48.21
General Mills	GIS	370334104	Consumer Staples	37.47
General Motors	GM	37045V100	Consumer Discretionary	52.26
Goldman Sachs Group	GS	38141G104	Financials	99.32
Google Inc	GOOGL	02079K305	Information Technology	540.66
Hess Corporation	HES	42809H107	Energy	19.72
Hewlett Packard Enterprise	HPE	42824C109	Information Technology	37.44
Johnson & Johnson	JNJ	478160104	Health Care	311.82
JPMorgan Chase & Co	JPM	46625H100	Financials	307.30
Lilly (Eli) & Co	LLY	532457108	Health Care	77.29

Marathon Oil Corp	MRO	565849106	Energy	14.66
Mattel Inc	MAT	577081102	Consumer Discretionary	9.43
McDonald's Corp	MCD	580135101	Consumer Discretionary	99.73
Mead Johnson	MJN	582839106	Health Care	12.98
Microsoft Corp	MSFT	594918104	Information Technology	399.54
Monster Beverage	MNST	61174X109	Consumer Staples	25.12
Morgan Stanley	MS	617446448	Financials	78.27
Newell Brands	NWL	651229106	Consumer Discretionary	21.54
News Corp	NWS	65249B109	Consumer Discretionary	6.65
NiSource Inc	NI	65473P105	Utilities	7.15
NRG Energy	NRG	629377508	Utilities	3.87
Oracle Corp	ORCL	68389X105	Information Technology	166.07
PepsiCo Inc	PEP	713448108	Consumer Staples	149.41
Pfizer Inc	PFE	717081103	Health Care	197.15
PG&E Corp	PCG	69331C108	Utilities	30.80
Philip Morris International	PM	718172109	Consumer Staples	141.94
Ross Stores	ROST	778296103	Consumer Discretionary	22.64
Signet Jewelers	SIG	G81276100	Consumer Discretionary	9.21
Southwest Airlines	LUV	844741108	Industrials	30.66
Starbucks Corp	SBUX	855244109	Consumer Discretionary	79.07
SunTrust Banks	STI	867914103	Financials	26.94
Tesoro Petroleum Co	TSO	881609101	Energy	10.22
The Mosaic Company	MOS	61945C103	Materials	10.27
Tiffany & Co	TIF	886547108	Consumer Discretionary	8.09
Tyson Foods	TSN	902494103	Consumer Staples	26.96
United Parcel Service	UPS	911312106	Industrials	99.74
Verizon Communications	VZ	92343V104	Telecommunication Services	217.61
Williams Cos	WMB	969457100	Energy	23.36

Source: Compustat. Market cap measured on dec 31, 2016.

Appendix B: Robustness test

Table B1: Average Abnormal Returns H1 with value weighted index

This table shows the Mean Abnormal Returns in % for the 21 days surrounding the event (10 days before the event date and 10 days after the event date). N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test.

Day	N	Mean Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
-10	97	-0.04%	48-49	0.313	-0.301
-9	97	-0.03%	51-46	-0.496	-0.21
-8	97	-0.16%	42-55	-0.704	-1.116
-7	97	-0.13%	51-46	-1.109	-0.909
-6	97	0.06%	47-50	0.29	0.41
-5	97	-0.13%	47-50	-0.8	-0.891
-4	97	-0.15%	35-62	-1.413$	-1.069
-3	97	-0.03%	42-55	-0.582	-0.23
-2	97	-0.07%	47-50	-0.762	-0.514
-1	97	-0.19%	40-57	-1.699*	-1.360$
0	97	-0.63%	43-54	-4.518***	-4.455***
1	97	-0.01%	51-46	0.606	-0.086
2	97	0.05%	49-48	0.28	0.324
3	97	-0.19%	46-51	-1.393$	-1.320$
4	97	-0.26%	45-52	-1.843*	-1.850*
5	97	0.07%	46-51	1.196	0.508
6	97	0.06%	50-47	0.791	0.45
7	97	0.10%	48-49	0.46	0.688
8	97	0.01%	48-49	0.437	0.096
9	97	0.08%	47-50	0.655	0.56
10	97	-0.12%	46-51	-0.734	-0.832

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Table B2: Cumulative Abnormal Returns H1 with value weighted index

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,1] and [1,10]. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
(-10,-1)	97	-0.88%	46-51	-2.202*	-1.957*
(-1,0)	97	-0.82%	43-54	-4.396***	-4.112***
(0,+1)	97	-0.64%	42-55	-2.766**	-3.211***
(+1,+10)	97	-0.21%	51-46	0.144	-0.463

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Table B3: Cumulative Abnormal Returns H2 with value weighted index

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,0], [0,1] and [1,10] for the different categories of CSR. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test, the scores of the Portfolio Time-Series t test and the scores of the Generlized Sign Z test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t	Generalized Sign Z
Employee relations						
(-10,-1)	26	0.25%	16-10	0.419	0.318	1.255
(-1,0)	26	-0.38%	12-14	-0.709	-1.068	-0.314
(0,0)	26	-0.41%	12-14	-1.146	-1.636$	-0.314
(0,+1)	26	0.06%	14-12	0.453	0.157	0.471
(+1,+10)	26	-0.44%	15-11	-0.005	-0.559	0.863
Product quality						
(-10,-1)	24	-3.11%	8-16	-4.108***	-3.858***	-1.525$
(-1,0)	24	-2.66%	9-15	-7.049***	-7.390***	-1.117
(0,0)	24	-1.82%	7-17	-6.676***	-7.137***	-1.934*
(0,+1)	24	-2.06%	6-18	-4.779***	-5.724***	-2.342**
(+1,+10)	24	-1.38%	9-15	-1.467$	-1.710*	-1.117
Community relations						
(-10,-1)	18	-0.05%	9-9	-0.299	-0.048	0.141
(-1,0)	18	-0.32%	7-11	-1.219	-0.76	-0.802
(0,0)	18	-0.02%	8-10	-0.586	-0.059	-0.33
(0,+1)	18	-0.11%	8-10	-0.477	-0.248	-0.33
(+1,+10)	18	-0.03%	9-9	0.147	-0.031	0.141
Environmental issues						
(-10,-1)	10	-1.33%	4-6	-0.63	-0.948	-0.658
(-1,0)	10	-0.48%	5-5	-1.184	-0.773	-0.025
(0,0)	10	-0.52%	7-3	-1.314$	-1.182	1.24
(0,+1)	10	-0.12%	8-2	0.093	-0.195	1.872*
(+1,+10)	10	0.73%	7-3	0.823	0.521	1.24
Diversity issues						
(-10,-1)	19	-0.15%	9-10	-0.1	-0.142	-0.177
(-1,0)	19	0.25%	10-9	0.865	0.528	0.282
(0,0)	19	-0.06%	9-10	0.159	-0.197	-0.177
(0,+1)	19	-0.59%	6-13	-1.012	-1.259	-1.553$
(+1,+10)	19	0.94%	11-8	1.24	0.901	0.741

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Table B4: Cumulative Abnormal Returns H3 with value weighted index

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,1] and [1,10], for severe events and for less severe events. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
Severe					
(-10,-1)	45	-1.36%	20-25	-2.294*	-2.249*
(-1,0)	45	-1.78%	16-29	-6.327***	-6.578***
(0,+1)	45	-1.23%	20-25	-3.840***	-4.553***
(+1,+10)	45	-0.63%	21-24	-0.364	-1.036
Less severe					
(-10,-1)	52	-0.46%	26-26	-0.873	-0.739
(-1,0)	52	0.01%	27-25	-0.118	0.019
(0,+1)	52	-0.13%	22-30	-0.206	-0.48
(+1,+10)	52	0.16%	30-22	0.535	0.253

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.

Table B5: Cumulative Abnormal Returns H4 with value weighted index

This table shows the Mean Cumulative Abnormal Returns (CAR) in % for the event windows [-10,-1], [-1,0], [0,1] and [1,10], for deliberate events and for accidental events. N is the number of events. The last three columns respectively present the ratio of positive and negative Abnormal Returns, the scores of the Patell Z test and the scores of the Portfolio Time-Series t test for the CARs of these time frames.

Days	N	Mean Cumulative Abnormal Return	Positive-Negative	Patell Z	Portfolio Time-Series (CDA) t
Deliberate					
(-10,-1)	62	0.05%	34-28	-0.47	0.099
(-1,0)	62	-0.52%	28-34	-2.373**	-2.147*
(0,+1)	62	-0.40%	29-33	-1.362$	-1.668*
(+1,+10)	62	-0.36%	30-32	-0.268	-0.658
Accidental					
(-10,-1)	35	-2.52%	12-23	-3.041**	-3.311***
(-1,0)	35	-1.36%	15-20	-4.160***	-3.996***
(0,+1)	35	-1.07%	13-22	-2.792**	-3.131***
(+1,+10)	35	0.06%	21-14	0.597	0.074

The symbols $,*,**, and *** denote statistical significance at the 0.10, 0.05, 0.01 and 0.001 levels, respectively, using a generic one-tail test.