



**LUND UNIVERSITY**  
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MASTER PROGRAMME IN FINANCE

**SHAREHOLDERS' REACTION TO CORPORATE SOCIAL RESPONSIBILITY  
ISSUES: AN EVENT-STUDY OF CSR ANNOUNCEMENTS ON STOCK  
PRICES**

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**Abstract**

This study examines whether shareholders are sensitive to corporations corporate social responsibility announcements. Using the event study methodology and applying it to 234 events of 66 US publicly traded companies in the time period from 2011 to 2016, we try to answer the question whether it is worthwhile for companies to implement social responsible corporate activities into corporation policy. Specifically, we conduct a short-term event study and use the Carhart four-factor model in order to calculate cumulative abnormal returns for the event windows  $[-1,0]$ ,  $[-1,1]$  and  $[-1,2]$ . Our findings suggest that CSR has a significant effect on capital markets, particularly, negative events decrease stock prices significantly whereas positive events have no significant positive impact. Furthermore, shareholders value offsetting CSR which regard positive CSR news for companies with a history of low CSR-performance. Companies with a history of high CSR-performance however are less penalised for CSR non-conforming behaviour, which suggests that the implementation of effective CSR principles can minimise the effect feared for negative CSR announcements. We therefore conclude that it is worthwhile for companies to invest in CSR.

*Keywords: CSR; Event Study; Carhart four-factor model; Shareholder Value; Social and Environmental Responsibility; Cumulative Abnormal Returns*

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# 1. Introduction

Corporate Social Responsibility (CSR) has become prevalent in the corporate profile of many companies in the last decades. Whilst in 1962 and 1970 Milton Friedman argued that businesses should not exercise social responsibility as it is costly, but instead focus on generating profits for shareholders, this consensus has changed considerably. With the stakeholder theory introduced by Freeman and Reed in 1983, they shift the focus from stockholder to stakeholder and with this step introduce morals and values into concepts of organisational management. Rather than only concentrating on the short-term goal of maximising corporations' profitability and increasing share prices, most companies nowadays acknowledge stakeholders' views (Freeman, 2010). Stakeholders include investors, customers, employees, business partners, local communities, the environment and society. Corporate Social Responsibility in this context is a corporation's "commitment to operate in an economically, socially and environmentally sustainable manner that is transparent and increasingly satisfying to its stakeholders" (Katsoulakos et al., 2004). Positive examples for a corporation's CSR practices are BestBuy's recycling programs to collect electronic waste (Best Buy Canada, 2013); the initiative of Coca-Cola to advance sustainable water access in African countries (The Coca-Cola Company, 2012); or the use of recycled materials in Ford Motor Company's products to "create a better world" (Ford Motor Company, 2011).

The change in attitude towards CSR is well exemplified by the differing reactions of shareholders on Ford's intention to serve society during the 20<sup>th</sup> century (Lee, 2008): Whereas in 1919 shareholders sued Ford Motor Company for having the intention to reinvest company's accumulated profits on plant expansion with the idea of business as a service to society; in 1999 the company gained considerable support for this mindset. This different response is attributable to a cultural shift in favour of social responsibility. The relationship of CSR and performance as well as management was not present for shareholders in the early 19<sup>th</sup> century and therefore they could not see the benefit of having a greater public good in mind (Lee, 2008; Moura-Leite & Padgett, 2011). Since then, the concept of CSR and its importance within a

corporation has attracted a lot of attention and research on this topic has made significant progress.

Although a behaviour in line with CSR is mostly voluntary for companies, the majority of U.S. corporations nowadays practices some form of CSR (see for example Lee, 2008). 65.5% of an industry-stratified sample of 66 publicly-traded U.S. firms examined in this study do incorporate CSR principles and many attempt to achieve more transparency by the publication of reports concerning their CSR or sustainability achievements.

How much influence the CSR concept can have can be illustrated by Tesla Motors: the electric automaker which was founded in 2003 overtook leading car manufacturers in April 2017 to become the most valuable car company of the U.S. by market capitalisation (Titcomb, 2017). Within not even 14 years it surpassed companies that have been prevalent on the market for more than 100 years (e.g. Ford Motor Company, founded in 1903; General Motors, founded in 1908). Tesla's concept is exceptional in its dedication on bringing sustainable transport to the mass market and therefore notably reducing car emissions. The commitment towards the planet became even more notable when the company announced the release of its patents on electric technology: this way other automotive companies were able to adopt its technology and thereby also reduce vehicles' greenhouse gasses (Musk, 2014). Tesla's dedication towards the common good and sacrifice of the company's profit were additional to other factors, including appealing car design, and certainly added to the reasons for the company's success. This serves to further emphasise the influence CSR can have upon company and share performance.

The rising significance of CSR is represented in increasing research on this topic. The concept has been challenged in the years from the 1950's up to today. Thereby, the focus shifted from an ethics orientation with a macro-social level towards a performance orientation with an organisational level (Lee, 2008; Moura-Leite & Padgett, 2011).

Whereas the relationship between CSR and a corporation's competitiveness and financial performance find considerable attention in academic research, there is - beyond very few notable exceptions - no established empirical research on CSR's impact on and relevance in the capital market. Becchetti, Ciciretti and Hasan (2007) find significant abnormal returns while investigating this issue by tracing market reactions to corporation's entry and exit from an Index which was a CSR benchmark. However, this study has been

conducted with data from 1990 to 2004. As the attention towards CSR increased immensely in the last years, these results could already be out-dated. In contrast to the previous mentioned study, Cheung (2011) and Curran and Moran (2007) do not find a significant impact of CSR index inclusions and exclusions on stock returns when using the event study methodology.

A limited number of studies examine the impact of CSR news announcements on stock prices. Zakir et al. (2016) perform an event study around CSR news announcements in Pakistan. Due to the fact that investors on this market are short-term focussed and see CSR-activities as costly rather than having a benefit, they find a negative impact of CSR news announcements on share prices. As the market examined in this study is very small, the results are not representative for many other markets. Hence, there remains the need for further examination. Flammer (2013) performs a well-developed and all-encompassing event study on announcements of corporate news related to environmental CSR and finds that positive news have a positive effect on stock prices whereas negative news decrease stock prices. Furthermore, negative stock market reactions to eco-harmful behaviour have increased and positive reactions to eco-friendly behaviour have decreased over the time. Nevertheless, this study only focusses on environmental CSR and neglects social and governmental CSR. Krüger (2015) overcomes this negligence and performs an in-depth event study of stock market reactions to positive and negative events concerning corporations' CSR behaviour. He finds negative reactions of shareholders towards negative CSR news but also a weakly negative response towards positive CSR news. Investors only value positive CSR news concerning firms with a history of poor stakeholder relations. However, the study examines events between 2001 and 2007. As the CSR concept caught more attention in recent years and could have therefore changed the impact on capital markets, the results of this study could already be outdated. Furthermore, the results are not in line with those of Flammer. A higher conformity of both studies would have been expected, even though Krüger focusses on general CSR and Flammer only on environmental CSR. Concerning the issues mentioned before, we see the potential and requirement for further research on the impact of CSR-related news announcements on stock prices.

The following event study addresses the CSR relevance on capital markets and examines the impact of CSR news announcements of U.S. publicly-traded companies in the time period from 2011 to 2016 on share prices. Our

study contributes in so far to existing literature that we address the effect of CSR news announcements of all aspects, environmental, social and governmental, on share prices of American companies and thereby use recent stock data from 2011 to 2016 in order to reflect the latest developments of CSR. We therefore expand the work of Flammer (2013) by addressing not only environmental CSR and the work of Krüger (2015) by using a more recent dataset. Furthermore, the analysis considers the previous CSR-performance of the respected companies and shows, that a good CSR-performance can mitigate the negative effects of negative CSR news announcements on stock prices. It therefore contributes to existing literature and the understanding towards the effect of CSR announcements. Particularly in the context of current changes of governmental policies towards environmental protection and climate change (Greshko, 2017) it can help U.S. companies in evaluating CSR relevance for their businesses: whether or not it is worthwhile to invest in corporate social responsibility projects although related government incentives are decreasing. To identify events that reveal information about a corporation's responsible or irresponsible CSR behaviour, we predominantly use EBSCOhost Regional Business News database to search for relevant press coverage. The following event study examines stock market reactions to the events of the selected articles. The study considers the effect of positive as well as negative CSR announcements on the share price. Furthermore, it examines whether the effects on the share price differ significantly when a companies' corporate social behaviour prior to the examined event is considered as developed or undeveloped.

Chapter 2 develops the theoretical arguments that build the basis for the hypotheses. Chapter 3 describes in detail the data and methodology used in the study. In Chapter 4 the empirical results are presented and discussed and various implications considered. Finally, Chapter 5 presents an overview of the whole study and concludes with a discussion of the implications and limitations of our findings.



## 2. Theory and Hypotheses

### 2.1 CSR and stock prices

Milton Friedman's view of CSR as a cost of doing business has been challenged in ensuing research. Freeman and Reed (1983) were one of his challengers with their stakeholder theory, Jones extended this idea in 1995. He stated that the implementation of ethical principles in a corporation's management can result in a significant competitive advantage against those who behave opportunistic. Further research has been conducted on the impact of CSR on competitiveness: Mohr, Webb and Harris (2001) examine the impact of CSR on buying behaviour by conducting an interview-study with consumers and conclude a positive and stronger relationship with rising CSR awareness and standards. Du, Bhattacharya and Sen (2007, 2010) scrutinise CSR as a tool of competitive positioning to take influence on consumers' behaviour: they find a positive relation between a company's CSR reputation and consumers purchase likelihood as well as a longer-term loyalty. Hence, the communication of a company's engagement in social responsible practices to the public is a crucial component when it comes to strengthening a company's overall reputation. In 2010, they further expand their study by introducing a framework of CSR communication that could improve the positive effects of CSR on business returns.

With the competitive advantage CSR brings along, a possible financial effect of CSR was presumed. Therefore, a growing literature examines the impact of CSR on a corporation's financial performance. While the outcomes are ambiguous, most studies find a positive relationship (Berman et al., 1999; Demetriades & Auret, 2014). Mackey, Mackey and Barney (2007) propose a theoretical model which examines the impact of CSR on a firm's market value. They conclude that CSR investments can create economic values for a firm in some occasions, but also reduce the market value in other cases. Orlitzky, Schmidt and Rynes (2003), Boaventura, da Silva and Bandeira-de-Mello (2012), as well as Mikolajek-Gocejna (2016) conduct meta-analyses of previous studies, showing that social and environmental responsibility have a positive effect on the financial performance of a company. Brammer and Millington (2008) examine the relationship of Corporate Social and Financial Performance with the focus on corporate charitable giving and find that unusually good social

performers do best over the long-term, whereas in the short run unusually poor social performers do best. Schnietz and Epstein (2005) find that during a crisis a positive CSR reputation can protect firms from stock declines.

On the contrary to these studies, McWilliams and Siegel (2000) find a neutral impact of CSR on a corporation's financial performance and Revelli and Viviani (2015) find a neutral impact of CSR on the financial performance of CSR stock market portfolios compared to conventional investments.

In accordance with the findings of the majority of the reviewed literature this study is based on the idea, that Corporate Social Responsibility is a competitive resource for a company and has a positive financial impact. In line with the hypothesis that financial markets efficiently incorporate new information without large time delay (Fama, 1970), we anticipate stock price reactions to CSR news announcements. Hence, we hypothesise a positive relationship between CSR news announcements and share prices, where shareholders react positively to announcements of positive CSR behaviour which results in a stock price increase for the related company and vice versa:

***Hypothesis 1:** Positive CSR news announcements have a positive effect on share prices, negative news have a negative effect.*

## **2.2 External standards and pressure**

The pressure on companies to adopt corporate social responsible behaviours and improve their effects on people, planet and society has increased through several external forces. Many companies have applied CSR standards to their practices. Today, sustainable, social responsible behaviour has become a standard and is no longer exceptional. In the following section we will describe the reasons that lead to the increased pressure towards a corporate social responsible behaviour for corporations and elaborate upon the aforementioned statements.

### **2.2.1 Induced dialogues about CSR non-conforming behaviour**

An increased dialogue about negative business behaviours of corporations has been initiated by many institutions since the mid-90s (Waddock, 2008). One example is the NGO Human Rights Watch, which raises awareness about human rights violations, other institutions may focus on issues like

sustainability or labour rights. Through the creation of new conversations about CSR violating behaviour, the pressure on the companies who execute those practices rises and can thereby force them to change.

Another way that has been established by many institutions which leverages companies to adopt sustainable practices is through the publication of ratings and rankings. An example is the Fortune magazine ranking "Most Admired Corporations" which was first published in 1983 and ranks companies by their reputation (Waddock, 2008). However, also many of the CSR-relevant news that are examined in this study contain ratings or rankings of companies, such as the "2017 Corporate Equality Index (CEI)", "Dow Jones Sustainability Index" or "Best Global Green Brands".

### **2.2.2 Established guidelines**

The creation of guidelines can further push companies towards a responsible behaviour. The Sarbanes-Oxley Act which was established in 2002 by the United States federal law is a public company accounting reform which created new accounting and transparency standards for corporations and protects investors. The ten principles of the UN Global Compact (UNGC) are a further example of guidelines that help to persuade corporations to better behaviour: the guidelines focus on acceptable and unacceptable behaviour regarding human and labour rights, corruption and environmental protection. Although voluntary, as of 2017 there are 9000 companies who respect and follow these guideline principles (United Nations, 2017a; Waddock, 2008). According to Waddock (2008), a variety of international organisations have contributed to establish guidelines and principles to create a better coexistence.

### **2.2.3 Consumer demand**

The consumer demand for fair trade and responsibly produced goods has increased tremendously. Hence, the demand for CSR activity and information has grown (Holder-Webb et al., 2009). A Global CSR Study from 2015 has shown that 91% of investigated consumers expect companies to operate responsibly and address social and environmental issues. 84% of the customers even choose responsible products over products by non-responsible firms and 90% of them would boycott a company if they heard about irresponsible business practices (Cone Communications, 2015).

According to Flammer (2013) and Waddock (2008), the media attention towards social and environmental issues has increased in the 21<sup>st</sup> century. This raises customer attention to those issues and pressures companies towards better behaviour. Human rights abuse, sweatshops and child labour are often central topics of critics.

#### **2.2.4 The trend towards a CSR-culture institutionalised by corporations**

A growing number of firms in the United States disclose their social and environmental activities on a voluntary basis. In 2009, 80% of a size- and industry-stratified sample of investigated publicly traded U.S. firms by Holder-Webb et al. (2009) published CSR reporting materials. The same trend was observed in this study, as 65.5% of 66 investigated industry-stratified U.S. corporations have good CSR-performance, which is further elaborated later. Thereby, corporate websites and press releases play an important role for the disclosure of CSR and sustainability achievements. Areas that are particularly emphasised in those publications are community, health and safety, diversity and human resource matters and environmental programs.

As a need for standardisation, the Global Reporting Initiative (GRI) developed a common reporting framework for the reporting on sustainability performance and allows cross-company and cross-industry comparisons. This increased the pressure on many corporations to report their CSR activities in a predefined way and many have adopted these principles. In 2017, 92% of the world's largest corporations report on their sustainability performance, 74% with the GRI standards (GRI, 2017).

Another point is that the ratio of assets under professional management which are involved in Socially Responsible Investments (SRI) has grown dramatically in the 21<sup>st</sup> century (Holder-Webb et al., 2009) and is in 2016 on a high level: one-fifth of all assets are SRIs, with a market size of \$8.72 trillion (USSIF Foundation, 2016). From 2014 to 2016 the sustainable and impact investing increased by 33%.

Increased dialogues on non-conforming behaviour regarding social and environmental issues raised the awareness and attention towards CSR-related topics. The customer demand towards a sustainable, responsible behaviour of corporations is therefore high. Many of the listed developments resulted in a trend towards a CSR-culture institutionalised by corporations. As a proportion of corporations have established CSR principles into their corporations and

pursue CSR targets, we argue that this behaviour is rather a standard than exceptional. Hence, the punishment of negative CSR-related behaviour by shareholders is high, as positive CSR-related behaviour is a norm. Therefore, the reward of positive CSR-news announcements by shareholders is comparably low. In summary, external pressure and standards to behave in a responsible manner towards environmental, ethical and social issues have increased over time and are on a high level. We therefore conclude that shareholders' reactions towards negative CSR-related behaviour are strong, whereas positive CSR-related behaviour is not perceived as exceptional anymore and therefore not rewarded with the same reaction as negative behaviour. We formulate the following hypothesis:

***Hypothesis 2:** As CSR standards in the U.S. are high, negative CSR-news have a higher impact on share prices than positive news.*

### **2.3 Impact of company's CSR-behaviour on shareholders' reaction**

In accordance with the argument of Flammer (2013), the assumption of neoclassical models is used to conclude a higher effect on stock prices, if CSR news announcements regarding a company are comparably new. Neoclassical models argue a decreasing marginal return of production factors. Hence, this study infers decreasing marginal returns for companies that have already established CSR-behaviours. Firstly, in the early stages of the introduction of CSR-activities, it is easier and cheaper to improve the standards than it is in a later stage, when the CSR-level is already high and new initiatives might be more costly. Furthermore, if a company has established a good CSR reputation and hence CSR-related positive news announcements are less new and special to investors, they have a less positive effect on the share price, as good CSR-practices are already priced into the stock. Conversely, companies that have a negative CSR-reputation get a higher reward for positive CSR-news announcements and lower punishment for negative news announcements. This leads to the following conclusions:

***Hypothesis 3:** The share prices of companies with high CSR-performance are less strongly affected by positive news than is the case for companies with low CSR-performance; the opposite is true for negative news announcements.*

## 2.4 Financial impact increases the stock price effect

We presume that a financial impact that is directly addressed in the CSR-news announcement has an increased effect on the stock price. This could, for example, apply to a penalty payment that is related to the CSR event. We hypothesise that this effect can increase or decrease shareholders' actual reactions towards a CSR-related behaviour respective to its direction and therefore control for that issue in our dataset, i.e. exclude news articles that directly address a financial impact. This test can help us to check whether the effect on the stock prices is related to CSR or just the addressed financial impact.

***Hypothesis 4:** Financial impact related to the CSR event increases / decreases the effect on the stock price.*

## 3. Data and Methodology

### 3.1 Data collection method

This paragraph examines the data collection method used in the event study to examine the shareholders' sensitivity to announcements of news regarding corporations' social responsibility issues of U.S. public-traded companies. To retrieve relevant data on corporate news, the study predominantly uses the EBSCOhost Regional Business News database, a full-text resource for business publications in the United States and Canada, and news.google.com for further research. The stock market data is obtained from Thomson Reuters Datastream (2017).

Data collection is a time consuming process, as a performed keyword search in the databases uncovers many non-CSR related news items. The headline of each by the database recommended article has to be read and reduced to CSR relevant material. Potentially relevant articles are read in depth to ensure that they are indeed relevant for the event study. Due to the labour-intensive method of data collection, our sample period is limited to five years from January 1, 2011 to December 31, 2016.

To identify relevant press releases for the event study, a keyword search in EBSCOhost is performed. The database has an advanced search interface that enables the search for twelve keywords simultaneously. As an open keyword search uncovers too many non-company related articles, a more defined specification is necessary. Therefore, a combined keyword and company name search is performed, which enables us to search for news coverage for specific companies. Hence, it reduces the output of non-relevant articles and the data collection process becomes more efficient. In total the simultaneous search of the company name in combination with six keywords is feasible. The published date in the advanced search interface is set equal to the sample period stated above.

The following twelve keywords were selected for the CSR-related news search for each company: Pollution, waste, emission, recycl, environment, scandal, child, diversity, ethics, sustainab, human and fraud. Some search words are shortened to allow for a wider outcome of relevant results: Sustainab for example can implement both sustainability or sustainable; recycl i.e. recyclable as well as recycle(d); also words like child can lead to both positive or negative

press releases regarding CSR, i.e. child labour or child care. The keywords were selected from a variety of CSR related words, including positive, neutral as well as negative signalling words. Furthermore, environmentally as well as socially CSR-related keywords were selected to examine both significant CSR aspects.

In order to reduce the number of observed public-traded companies on the U.S. stock market in the event study to a reasonable amount, sampling is used. Stratified random sampling is conducted on S&P 500 index companies to obtain equal representation of groups in the sample as compared to the larger population and select a preferably representative sample (Warner, 2008). The S&P 500 index is established as one of the world's most well-known and prestigious stock markets. As it includes 505 leading companies and captures approximately 80% of available market capitalisation (S&P Dow Jones Indices, 2017), it is found to be a good representative for a high percentage in concerns of market cap of the U.S. stock market. However, it has to be considered that the study mostly focuses on large, leading U.S. companies and the results could not be representative for smaller publicly traded firms. Stratified random sampling ensures that a sample is taken from establishments in different sectors. In the stratification method, researcher divides the population into separate subgroups, called strata (Kandola et al., 2014). The stratification in this survey is based on eleven Global Industry Classification Standard (GICS) sectors, which divide the S&P500 Component Stocks: Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Real Estate, Telecommunications Services and Utilities. GICS is a widely recognised industry model which forms a global standard for categorising companies into sectors and industries and therefore enables meaningful comparisons of sectors and industries globally. By using the same distribution of companies per GICS sector (proportionate stratification) and selecting the companies within the sectors randomly, the examined companies are reduced from 505 of the S&P500 index to 66, as shown in Figure 3.1 stratification may require more administrative effort, though produces a smaller bound on the error of estimation than would be produced by a simple random sample of the same size (Lone, Tailor & Verma, 2017). A potential concern with the keyword search as well as the company selection process is that the list may be too narrow. Nevertheless, there is no indication that the process would introduce any systematic bias to the analysis.





This search is undertaken without restricting the published date of the article, as some articles may be published in the sample period, but the first publication regarding that specific issue has been on another date or even before the sample period. Non-relevant articles for the sample period are ignored, event dates of articles that happened on an earlier time during the sample period are updated. A further open search for keywords in news.google.com leads to the identification of further CSR-relevant articles. After detailed research and verification, CSR-relevant news items are selected and entered into a data collection database. Thereby following details are recorded: headline of the article, true event date / first announcement in public, company name, ticker symbol, industry, event / raw topic, positive / negative CSR-related event, place of publication, person who collected the data and date of collection. This initial search identifies 252 articles.

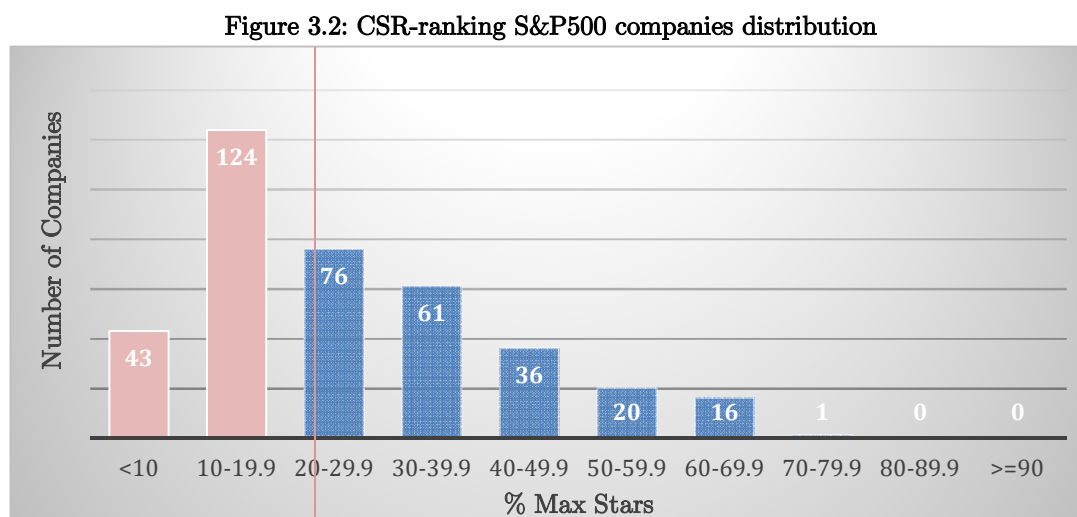
We have determined CSR relevant articles and cross-checked their relevance for inclusion with two researchers. Thereby, the CSR relevance is double validated. Non-CSR-relevant articles are excluded from the dataset. This is in line with the methodology employed by Flammer (2013). The dataset is then sorted by the company names and event dates to review whether some events are double entries. Those are also excluded from the dataset. As a result, four articles are removed, which results in overall 248 relevant events and a compliance of CSR-relevant news of 98.4%. In the next step we remove events that have overlapping event windows as we want to avoid a correlation across the abnormal returns of different events. This leaves us with 234 relevant events. Some companies searched for lead to the identification of many CSR-relevant articles, for example Ford Motor Company with 37 related news, others just a few or no results, e.g. Quest Diagnostics with one hit and Constellation Brands with no fitting results. Identified relevant articles refer to topics such as a fundraising for a children's cancer research and treatment program; the organisation of an event to raise awareness for domestic violence; the ranking as No. 1 company of "Best Global Green Brands" due to a high commitment to sustainability; or the announcement of the successful reduction of greenhouse gas emissions by 20 percent; but also negative headlines are selected which could regard the disclosure of child labour in a company's factory or the ranking as the worst corporate air polluter in the United States.

Additionally, a further classification of the event and company is performed. Each article is reviewed and a direct financial impact of the event

is assessed: Does the company have to pay a fee because of e.g. violations of the law? – “negative”; does the event have an expected negative financial impact? – “expected negative”; does the event have no direct financial impact? – “no”. A further classification of the event clarifies if the event relates to some kind of award / listing / ranking / recognition of the company. As an example, this can refer to the winning of a “diversity leadership award”, a listing as the “third worst for air pollution”, a ranking in a “corporate equality index”, or the recognition as a “leading national assessment of corporate sustainability efforts”. We find 39 events that are eligible for this category. Furthermore, 14 events are found to be associated with a published report regarding CSR-news. Some companies release sustainability or corporate social responsibility reports to demonstrate their CSR efforts to the public.

Moreover, it can be important for the classification of a CSR-related event, whether the company is assessed as a CSR-company before the event took place. This corresponds with Hypothesis 3, that the impact of positive CSR events is less significant if the company was previously classified as a CSR-respecting company. We accomplish the classification by searching news regarding the company and also the firm’s website. Indices for CSR performance can be prizes awarded, rankings or sustainability efforts that are published by the company. We then assess if the company was or was not a CSR-company before the event happened. In order to verify our results we access the Environmental, Social and Governance (ESG) Risk Scorecard from Bloomberg Professional (Bloomberg, 2017), which provides a tool to assess a company’s or portfolio’s CSR performance. Thereby, companies are assessed based on ESG and financial metrics that were identified as most relevant by Bloomberg. They are then measured against some criteria in regard to disclosure and performance compared to peers. The four criteria for which stars are conferred to each company are “Disclosure”, which stands for transparency; “Level”, which is a measure of the performance level compared to the median of the peers; “CAGR”, which measures the performance change in comparison to the peers and “Directon”, which assesses whether the performance of the company has improved over the designated period. According to the performance of each score, a % of maximum stars (% Max Stars) is provided for each company. Companies, which do not have an ESG Disclosure Score, do not get allocated a % Max Stars number, as their disclosed information is not sufficient to assess their CSR performance. We retrieve a performance table which gives us the

CSR-performance measured as “% Max Stars” of each S&P500 company, sorted by their ticker symbol. We then sort these companies by their performance and allocate them a ranking from 1 to 377, as 377 out of the 505 S&P500 companies have a performance ranking. Figure 3.2 shows the distribution of these companies, divided by their “% Max Stars”-performance indicator, whereas 0 is the lowest and 100 the highest score.



*Source: Data from Bloomberg ESG Risk Scorecard; Author's construction*

We see that the distribution is skewed to the right, with 167 companies having a score between 0 and 19.9 and 210 companies having a score between 20 and 100 points. It seems almost impossible to retrieve a perfect score. As the score is a measurement against other companies, there are always criteria where an improvement is possible. A well performing CSR company could be measured against companies that perform even better and therefore get a lower rating. Nevertheless, we have to find a measurement to distinguish high- from low-performing companies in respect to CSR. Concerning the left-skewness of the distribution and that just one company is located in the score between 70 and 100, we set the boundary at 20 (20% Max Stars), whereas 0 to 20 includes companies with a bad CSR-performance and 20.1 to 100 companies with a good performance. Therefore, we classify 187 companies out of the S&P500 index as good CSR-performers and, accordingly, 190 as low CSR-performers. It has to be mentioned that also companies with a score of 10 do fulfil some CSR-criteria. Nevertheless, we need to perform a differentiation at some point. We intentionally used the S&P500 company distribution in order to perform the CSR-performance classification, as the selection of the companies used for the

event study was conducted randomly. We do not aim for a classification of the selected companies at the 50% boundary, as the selection process was random and therefore this boundary is not necessarily accurate. After classifying the companies with this score, we compare the results to our assessment of the CSR-performance. Except of one event, where we classified the company as not being a CSR-company before the date of the event, the results match. This exception is due to the fact that the event happened before the introduction of a CSR-process in 2013. As the Bloomberg ESG Scorecard considers a time period of the last 6 years, it takes into account the performance before and after the event and as a result this assessment leads to a positive score. Considering the accuracy of our assessment of the CSR-performance, we rely on our assessment for those companies where Bloomberg does not provide a performance-measurement.

A drawback of the classification of events and the company is that it can be subjective. The assessment of an event to be connected with an award presentation or a published report is unmistakable. However, the classification of the financial impact of the event and the identification whether the company was previously assessed as a CSR company can be occasionally unclear or subjective. Nevertheless, the procedure was performed as objectively as possible. To avoid a subjective grading, the classifications were performed by two researchers and double verified afterwards. Non-coherent classifications were reviewed in a further step. A further possible bias could be that some data regarding the CSR eligibility of a company are not accessible. Nevertheless, the assumption regarding this issue is that if these data are not accessible via news on the company or the company's website, it was probably not assessed as being a CSR-company by investors, as the information were not available.

### **3.2 Data validity and limitations**

In order to examine the effect of positive and negative news articles related to a company's corporate social responsibility on stock prices, news articles had to be gathered. This was a manual process, based on a set of predetermined criteria. Despite the set of objective criteria, a main weakness in this study is the impossibility to eliminate human subjectivity completely. Subjectivity can be minimised by setting up certain sampling methods and criteria that determine how to select an article. However, arguably, it is

impossible to eliminate subjectivity completely. The measures taken to reduce subjectivity were the use of CSR keywords for the article search that were mostly used in previous studies and some guidelines that had to be followed in order to allow for a standardised process. Furthermore, we used stratified random sampling in order to select the companies of interest. The problem persists in that there exists no clear-cut line on what articles to include in terms of corporate social responsibility. The United Nations defines corporate social responsibility as a management concept where companies integrate social and environmental concerns in their business practices and interactions with stakeholders (United Nations, 2017b). The key issues they mention include environmental management, eco-efficiency, responsible sourcing, stakeholder engagement, labour standards & working conditions, employee & community relations, social equity, gender balance, human rights, good governance and anti-corruption measures. We used these UN criteria in order to identify relevant articles. Still, subjectivity is involved in the identification process of whether or not an article refers to one of those criteria. One person's definition of a "good" or "bad" CSR event can still differ from the comprehension of another's person, also if as many objective criteria as possible are set. The process can therefore never be perfect and other researchers might determine other articles as relevant when performing the same study on the same data again. Nevertheless, we tried to optimise this procedure in order to minimise the subjective influence as much as possible.

Another issue is the difficulty of quantifying a news article. In this study the same weight was given to all events regardless of what kind of event it was. For example, on March 29, 2013 it was reported that one of Exxon Mobile's pipelines burst which leaked a few thousand barrels of crude oil in Arkansas, while on September 16, 2015 it was reported that Microsoft was hit with a gender discrimination lawsuit. Both of these events were treated as negative CSR news, and were hypothesised to have a negative impact on stock price. But is it correct to assign both events the same weight? Some people may consider a singular oil leakage being worse than a singular act of workplace discrimination and would therefore put them in separate categories in order to assess their stock price impact separately. We did not perform a classification of the intensity of each event but gave each event the same weight when calculating the cumulative abnormal returns. This may be an opportunity for further research.

### **3.3 Event study**

We make use of the event study methodology to examine the effect of CSR news announcements on a corporation's stock price. An event study is a useful method widely used by empirical researchers in several business disciplines such as finance, law and economics to measure the effect of a certain economic event on the value of a firm. The foundation for conducting modern event studies was laid by Ball and Brown (1968) and Fama et al. (1969), although the first approaches started in the early 1930s (Brooks, 2014; MacKinlay, 1997).

The event study methodology relies on the assumption that the effect of any event should be immediately reflected in factors related to the firm, as in the firm's stock price. By immediately observing the change in the firm's stock price after the event took place, it is not only possible to draw conclusions of investors' beliefs regarding how the event will affect the firm, but also how an economic value is attributed to the event. A price increase can imply a value creation from investors' perspective; a price drop however implies value destroying properties of the event. Within the event study, cumulative abnormal returns (CAR) are calculated to investigate the impact of each specific event on the firm value (Brooks, 2014; Gilson & Black, 1995; Campbell, Lo & MacKinlay, 1997).

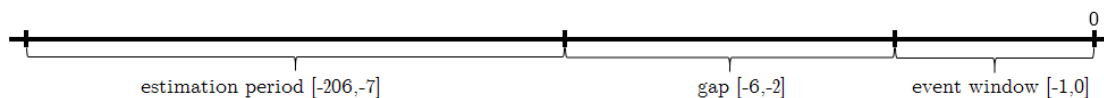
### **3.4 Event definition**

The events examined in this event study contain 234 CSR news announcements of 66 industry-stratified companies of the S&P500 U.S. companies in the time period from 2011 and 2016. The event dates ( $t = 0$ ) are determined using the first day of publication of a news announcement, which is in line with several studies, including MacKinlay (1997) and Flammer (2013). A weakness of this method is the "event uncertainty", as the date of publication can differ from the actual event date (e.g. Flammer, 2013). To handle the issue that the market may acquire information of the event prior to the actual news announcement, a common approach is to expand the event window, starting at  $t-1$  (Flammer, 2013; MacKinlay, 1997). The event window is the time period over which the security prices are analysed (Brooks, 2014).

In line with the efficient market hypothesis that markets adjust rapidly to new information, the effects of an event should be reflected immediately in the stock prices (Fama et al., 1969; MacKinlay, 1997) and accordingly we expect an immediate reaction of stock prices to news announcements. For this reason and because the aim of this study is to examine the short-run effect, we set a short event window from  $[-1,0]$ , i.e. the day before the announcement ( $t - 1$ ) and the event day ( $t = 0$ ). We furthermore experiment with longer event windows from  $[-1,1]$  and  $[-1,2]$  in order to test for robustness of the model. This is a common approach in the analysis of short-term effects and in line with the practice of Becchetti, Ciciretti and Hasan (2007) as well as Flammer (2013), who both analyse the short-term effect of CSR-related announcements on stock prices. In line with the short estimation window, we use daily data when conducting our event study, which is proven to have a higher power to detect an abnormal performance (MacKinlay, 1997).

To calculate the expected returns, a sample of data prior to the event window is used: the estimation window. Armitage (1995) suggests an estimation window between 100 to 300 days for daily observations. As there is a tradeoff between a higher precision of the parameter estimation and the likelihood of a structural break in the time series, the longer the estimation window is (Brooks, 2014), we set the estimation window to 200 days. This is in line with the estimation window by Flammer (2013), whose study is similar to ours. We furthermore include a gap between the estimation and event window. The reason is that information could have leaked to the market before the specified event date  $t=0$ , which could bias the result of the risk model estimation (Brooks, 2014). As we do not assume that there is a high gap between event and announcement day, we introduce a gap of 5 days.

**Figure 3.3: Timeline of the estimation and event window**



*Source: Author's construction*



### 3.5 Measuring normal returns

In order to measure the impact of the event on the stock prices, we calculate the normal (expected) return that would be expected if the event did not take place. The normal returns are estimated over the estimation window [-206,-7]. There are several ways proposed by MacKinlay (1997) to calculate the expected returns:

The *constant mean return model*. This model was proven by Brown and Warner (1980, 1985) to be a good model for utilisation in short-term event studies. It relies on the assumption that the mean return of a given security is constant over time.

The *market model*. It is a one factor model which can be used when a stable relationship between the market and security return is assumed and which is a slightly more sophisticated approach (Brooks, 2014). The expected return hereby is constructed using a regression of the return for firm  $i$  on a constant  $\alpha_i$  and the return of the market portfolio  $R_{mt}$ :  $R_{it} = \alpha_i + \beta_i R_{mt} + u_{it}$  (Brooks, 2014; MacKinlay, 1997).

After the introduction of the capital asset pricing model, more advanced models have been introduced and applied to calculate returns. Multifactor models, such as the *three-factor model by Fama and French* (1992) or the *four-factor Carhart model* (Carhart, 1997) can estimate expected returns more sophisticated.

Although the calculation of the expected return in a short-term event study is less sensitive to errors than in a long-run study, we use the Carhart model to estimate our expected returns. Carhart (1997) extended the Fama and French three-factor model by adding a momentum factor based on the findings of Jegadeesh and Titman (1993). Previous studies based on the belief that people tend to overreact to information and returns will reverse in the future. Therefore, they mainly focussed on contrarian trading strategies which suggest buying stocks that have done poorly and sell stock that have done well in the past in order to realise abnormal returns. Jegadeesh and Titman applied several relative strength strategies on stocks during the period 1965 to 1989 which follow the opposite strategy than the contrarian, assuming that stocks which have done well in the past will continue doing well in the future. They show significant returns when selling stocks that performed poorly and buying stocks which performed well in the past three to twelve month and thereby disconfirm

the hypothesis that profits of these strategies were only realised due to systematic risk.

Carhart (1997) estimated pricing errors for both the capital asset pricing model (CAPM) and the Fama-French three-factor model. He found the three-factor model a better performing model with a smaller pricing error. Based on the findings of Jagadeesh and Titman he introduced the momentum factor to the three-factor model. It is constructed by taking an equally-weighted average of firms with the one month lagged 30 percent highest eleven month returns, less the equally-weighted average of firms with the one month lagged 30 percent lowest eleven month returns. Carhart found that his extension of the three-factor model reduced the pricing errors even further and therefore outperforms both the CAPM and the three-factor model. Based on these results, we choose the Carhart model to be a more sophisticated model to estimate expected returns.

The Carhart model contains the three factors of the Fama-French model plus the momentum factor (Fama & French, 1993; Carhart, 1997):

$$R_{it} = \alpha + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t \quad (1)$$

Where  $R_{it}$  is the return on stock or portfolio  $i$  at time  $t$ ,  $RMRF_t$ ,  $SMB_t$ ,  $HML_t$  are the factor mimicking portfolio returns for market excess returns, firm size and value and  $MOM_t$  is the momentum factor, often denoted as UMD – “up-minus-down” (Brooks, 2014). As we use data for U.S. publicly traded companies, we can access the factors online from Kenneth French’s website at Dartmouth, which correspond to the Fama-French Research Portfolios (French, 2017). These portfolios are most commonly used in academic studies, as for example by Ahern (2009) and Flammer (2013). See following details to the factors retrieved from Kenneth French’s website (French, 2017):

**$RMRF_t$**  is the excess market return calculated as the value-weighted return of all CRSP firms listed on the NYSE, AMEX & NASDAQ less the return on a one-month treasury bill rate.

**HML** stands for High book-to-market Minus Low and is the average return of two value portfolios less the average return of two growth portfolios. The value portfolios have high book equity to market equity (BE/ME) ratios, whereas the growth portfolios have low BE/ME ratios:

$$\frac{1}{2}(\text{Small Value} + \text{Big Value}) - \frac{1}{2}(\text{Small Growth} + \text{Big Growth}) \quad (2)$$

The **SMB** stands for Small market cap Minus Big and is the average return of three small portfolios less the average return of three big portfolios:

$$\frac{1}{3}(\text{Small Value} + \text{Small Neutral} + \text{Small Growth}) - \frac{1}{3}(\text{Big Value} + \text{Big Neutral} + \text{Big Growth}) \quad (3)$$

Finally, **MOM** is the momentum factor which is the average return of two portfolios which performed well the previous 2-12 month less two poorly performing portfolios:

$$\frac{1}{2}(\text{Small High} + \text{Big High}) - \frac{1}{2}(\text{Small Low} + \text{Big Low}) \quad (4)$$

To construct the momentum factor, six value-weight portfolios are formed monthly as the intersection of two portfolios formed on size (measured by Market Equity) and three portfolios formed on previous returns. In order to construct the Fama-French factors  $RMRF_t$ ,  $SMB_t$ ,  $HML_t$ , six value-weight portfolios are formed as the intersection of two portfolios formed on size (see portfolios for the momentum factor) and three portfolios formed on the BE/ME ratio. The portfolios used to construct all four factors include NYSE, AMEX and NASDAQ stocks for which sufficient data was available.

We regress the four factors from the Carhart model on the stock returns from the estimation window in order to construct the expected returns. Previously we have calculated the stock returns on the stock prices which we retrieved from Datastream (2017):  $R_{0,1} = \ln\left(\frac{P_1}{P_0}\right)$ . The estimated beta-values are then multiplied with each corresponding factor value from the event window. Thereby we retrieve the normal return for firm  $i$  at time  $t$ , whereby  $t$  is each day of the event window from -1 to maximum 2. If a day from the event window falls on a day with no trading, we use the following trading day. The number of trading days will therefore be equal to the number of days in the event window.

### 3.6 Measuring abnormal returns, average abnormal and cumulative abnormal returns

By subtracting the expected returns from the returns that were actually observed on the market, we can measure the abnormal returns that account for the effect an event has on the security price. It is defined as the security's return during the event window less the security's expected normal return. The formal definition of the abnormal return is:

$$\varepsilon_{it}^* = R_{it} - E[R_{it} | X_t] \quad (5)$$

where  $\varepsilon_{it}^*$  is the abnormal return,  $R_{it}$  is the observed return and  $E[R_{it}]$  is the normal return for firm  $i$  at day  $t$  while  $X_t$  is the conditioning information for the normal performance model (Campbell, Lo & MacKinlay, 1997).

We calculate the abnormal returns for every day in the event window of each security. In order to calculate the cumulative abnormal returns for each event, we aggregate the abnormal returns for each event through time and do so for each time window  $[-1,0]$ ,  $[-1,1]$  and  $[-1,2]$ :

$$CAR = \sum_{i=1}^n \varepsilon_{it} \quad (6)$$

To examine the effect of both positive and negative CSR-news announcements on the stock price, we divide the events into two sub-samples of positive and negative events. We then calculate the average CAR's by simply taking the average of the cumulative returns for the events of each sub-sample:

$$\overline{CAR} = \frac{1}{N} \sum_{i=1}^N CAR_i \quad (7)$$

Where  $\overline{CAR}$  is the average CAR,  $CAR_i$  the cumulative abnormal return of each event and  $N$  the number of the total CAR's. This methodology has been developed by Fama et al. (1969). There is a more advanced approach to aggregate the cumulative abnormal returns: the Abnormal Performance Index method which is a multiplicative procedure introduced by Ball and Brown (1968). As the average CAR by Fama et al. has become the most common method to aggregate returns in academic research and is easier to interpret, we use this method in our study. As we excluded all events from our event study that had overlapping event windows, we do not have any clustering problems and assume that there is no correlation across the abnormal returns of different securities.

To perform a significance test of the average CAR we test the null hypothesis  $H_0$  that  $\overline{CAR}$  is equal to zero with the following equation:

$$J_1 = \frac{\overline{CAR}}{\bar{\sigma}} \sim N(0,1) \quad (8)$$

Where  $\bar{\sigma}$  is the standard deviation of the average CAR  $\overline{CAR}$ :

$$\bar{\sigma} = \sqrt{Var(\overline{CAR})} = \sqrt{\frac{1}{N^2} \sum_{i=1}^n (CAR_i - \overline{CAR})^2} \quad (9)$$

(Brooks, 2014, Campbell, Lo, MacKinlay, 1997).

In order to control for the assumption from Hypothesis 4 that a financial impact related to the CSR-event could increase / decrease the effect on the stock price respectively to its direction, we exclude events that have a negative financial impact or an expected negative financial impact (see classification of event in 3.1: “negative” and “expected negative”) from the dataset. We then perform the previous specified steps (7) to (9) on the dataset to test for the significance and the effect of the CSR-events on the stock prices.

In a last step, we test our Hypothesis 3. We therefore divide both our datasets with positive and negative events into two groups: Previous CSR-performance high and previous CSR-performance low. The first group contains news announcements for companies that had a high previous CSR-performance and the second group news announcements for companies with a low previous CSR-performance. Again we perform steps (7) to (9) in order to see the average effect of those events on the stock prices.

## 4. Analysis and Discussion of Results

### 4.1 Stock market reactions to CSR issues

In the following part of our event study analysis we examine our Hypotheses 1 and 2, regarding the reaction of shareholders to positive and negative CSR news announcements. Firstly we hypothesise that positive CSR news announcements have a positive effect and negative news will have a negative effect on share prices. Secondly we hypothesise that positive news announcements will have a lower positive effect on share prices than negative news will have a negative effect, as the CSR standards are high.

**Table 4.1: Cumulative abnormal returns around the news announcements of positive and negative CSR-behaviour**

Test of corresponding hypotheses	Variable	number of observations	Positive CSR events			number of observations	Negative CSR events		
			CAR [-1,0]	CAR [-1,1]	CAR [-1,2]		CAR [-1,0]	CAR [-1,1]	CAR [-1,2]
Hypothesis 1 & 2	Effect of CSR-news announcements	174	0,0010	0,0011	0,0019	60	-0,0063**	-0,0092***	-0,0071**
Hypothesis 4	Controlling for financial effect	169	0,0009	0,0011	0,0020	34	-0,0123**	-0,0122**	-0,0085*
Hypothesis 3	Previous CSR-performance high	136	0,0008	0,0010	0,0019	32	-0,0043	-0,0091*	-0,0083*
Hypothesis 3	Previous CSR-performance low	38	0,0023	0,0017	0,0022	28	-0,0091**	-0,0093**	-0,0054

\* p<0.10

\*\* p<0.05

\*\*\* p<0.01 One-tailed test.

*Source: Author's construction*

The results for testing all our hypotheses are presented in Table 4.1, whereas the results for Hypotheses 1 and 2 are presented in the first line. The table shows the cumulative abnormal returns separately for the positive and negative CSR news events. Furthermore, we test the CAR's for the different event windows [-1,0], [-1,1] and [-1,2]. In support of Hypothesis 1 we find positive cumulative abnormal returns for positive CSR news announcements and negative cumulative abnormal returns for negative CSR news announcements. Nevertheless, the positive CAR's are not significant, whereas the negative CAR's are significant at the 5 percent level (CAR [-1,0] and [-1,2]) and 1 percent level (CAR [-1,1]). The insignificance of positive CSR events on the stock prices implies that their effect is minor, so that it is not significantly different from

zero. We can therefore not assume that positive events have an effect on stock prices. When looking at the results of the cumulative abnormal returns we find that the negative event effects are stronger than the positive event effects on the stock prices (0.9% vs. 0.1% in the [-1,1] event window). This is consistent with our Hypothesis 2.

The effect of negative CSR news announcements is economically meaningful. Looking at our [-1,1] event window, we find an average cumulative abnormal return of -92 basis points (-0.92%), which is significant at the 1% level. Assuming, that a negative CSR news announcement has an average effect of -92 basis points on an average market capitalisation of the sample firms of approximately \$42.25 billion, we find that the median cost associated with such an event is approximately \$388 million ( $0.00919 \times \$42.25$  billion). We calculate the average market capitalisation of our sample firms by multiplying the S&P 500 company weights (SlickCharts, 2017) with the S&P 500 total market capitalisation from March 31, 2017 (Siblis Research, 2017).

In order to control for a financial impact that is related to the CSR event and already mentioned in the news announcement or which can be inferred from it, we exclude news announcements that have a negative or expected negative financial impact from the dataset. Hypothesis 4 states, that a correlated financial impact could increase or decrease the effect which the event has on the stock price. As we do not want our results to be diluted by a financial impact that is announced with the event, the exclusion of those events can verify our results (see second row in Table 4.1). In total we exclude 5 events from the positive CSR event dataset and 26 events from the negative CSR event dataset. With this extension, the results are still robust, with no changing values for the positive events and even more negative CAR's for the negative CSR news announcements (the significance from the CAR [-1,1] changes from a 1 to a 5 percent significance).

Our pre-chosen event window was [-1,0], nevertheless we use alternative event windows in order to test whether the results are robust. The positive as well as negative CSR event effects are robust, deviating just slightly for the positive CSR events (0.1% in both [-1,0] and [-1,1] and 0.2% in the [-1,2] event window) and a bit stronger for negative CSR events, with the highest and most significant cumulative abnormal return in the event window [-1,1]. The CAR's for the test of Hypotheses 3 and 4 are also robust.

In order to prevent the negative effect of confounding events on the statistical inference (Flammer, 2013; McWilliams & Siegel, 1997), we excluded articles from our dataset that referred to other significant events such as earnings announcements. Another factor that diminishes the effect of confounding events is the short event window we have chosen. However, we cannot control fully for this concern.

## 4.2 Impact of previous CSR-performance on CAR's

In accordance with neoclassical models we hypothesised in Hypothesis 3 that companies stock prices react less strongly to positive CSR news announcements if the company had a high previous CSR-performance compared to stock price reactions for companies with a low previous CSR-performance. Accordingly, negative CSR news announcements have a higher effect on high CSR-performance companies than on low CSR-performance companies.

In order to test this Hypothesis, we categorise the selected companies in high- and low-performing CSR companies and divide our positive and negative events into these two groups. We correspondingly find 136 positive events for companies with a previously high CSR-performance and 38 with a previously low CSR-performance (see Table 4.1). The cumulative abnormal returns for all event windows are not significant for all event categories. Nevertheless, we find stronger positive cumulative abnormal returns for companies with a previously poor CSR-performance than for companies with a previously high performance. As the results are not statistically significant, we cannot prove our Hypothesis 3 regarding positive CSR news announcements statistically. Comparing the effect of negative CSR news announcements however, the result is not in line with our Hypothesis. Companies which had a higher previous CSR-performance find themselves confronted with less significant stock price decrease than it is the case for companies with a previous lower CSR-performance, even though the differences are minor: In the event window  $[-1,1]$  and  $[-1,0]$  companies with a previous low CSR-performance face a more significant and slightly higher stock price decrease, only in the event window  $[-1,2]$  the opposite is true. Nevertheless, we base our conclusion on event window  $[-1,1]$  and  $[-1,0]$ , as we expect an immediate reaction to CSR news announcements as previously explained and just use event window  $[-1,2]$  for a robustness check. These findings do not support our Hypothesis but in fact the theory that a previous



good CSR-performance brings a competitive advantage and makes companies less vulnerable to negative CSR news announcements.

### 4.3 Discussion of results

Our finding that stock prices significantly decrease following negative CSR-news announcements is consistent with the findings of Flammer (2013), Hamilton (1995) and Krüger (2015). Flammer thereby investigates the announcements of eco-harmful behaviour, Hamilton the impact of news releases regarding pollution figures such as air emissions or offsite shipments of toxic waste and Krüger the impact of all kinds of CSR.

Our finding that stock prices do not increase significantly following the release of positive news articles is not in line with the findings of Flammer. Our predominant explanation for this insignificance is the increased investor awareness in recent times. Flammer (2013) finds a significant increase in stock prices following eco-positive news when looking at firms from 1980-2009. To investigate shareholders' reactions over time, Flammer splits the investigation period into three periods: 1980-89, 1990-99 and 2000-2009 and finds that stock price reactions to eco-friendly events were strongest in the 1980-89 period and weakest in the 2000-2009. She concludes that the increase in stock prices following an eco-friendly event weakens over time. As we investigate CSR news announcements during the time period from 2011 to 2016 the weakening reactions from stock prices to positive news observed by Flammer may explain why we did not find significant increases in stock prices following positive CSR news. Considering the arguments that lead to our second Hypothesis which are based on the developments in the field of CSR - the increased pressure on companies to adopt CSR behaviours and awareness towards corporations' CSR that has driven the CSR-standards onto a very high level - we did expect the less significant effect positive CSR news have on stock prices. A further reason for the differing results with Flammer's could be that she only investigates the environmental aspect of Corporate Social Responsibility, whereas our study incorporates all kinds of CSR: environmental, social and governance.

Our results is consistent with our first Hypothesis in so far that we find that stock prices fall significantly following negative CSR news, however, positive CSR news do not have a statistically significant positive effect on stock prices, which is not in line with our Hypothesis. Nevertheless, the results

support our second Hypothesis that negative CSR news decrease share prices more than positive CSR news increase them and therefore that CSR standards are on a very high level.

Our findings do not confirm Krüger’s view that the significance of stock price reactions to negative CSR news announcements is driven by substantial costs associated with the events (Krüger, 2015). In fact we control for this issue and still find a strongly significant impact of negative CSR news on stock prices. In our view, this is rather explained by the high awareness of customers and investors towards CSR and therefore high penalisation for non-conforming behaviour. Furthermore, we do not find that positive CSR news announcements have a slightly negative impact on stock prices but small, not significant, positive effects.

The study supports Krüger’s results that investors value offsetting CSR which regard positive CSR news for companies with a history of corporate social irresponsibility. We find an average increase of cumulative abnormal returns for companies that had a poor previous CSR-performance, although not statistically significant. Moreover, our findings indicate that companies with a history of high CSR-performance fear less penalisation for CSR non-conforming behaviour. Even though this is not consistent with our Hypothesis 3, it supports the theory that the implementation of socially responsible corporate policies brings a competitive advantage, even if negative events cannot always be prevented.

In accordance with the increased consumer demand for fair trade and responsibly produced goods and the increased customer attention towards CSR issues described in section 2.2.3, a further interesting research question is whether producers of consumer goods are more affected by CSR news announcements than other companies. In order to test this we divided our sample into “consumer good” companies and “other” correspondingly to the GICS sectors in the S&P 500 index and retrieved the following results:

**Table 4.2: CAR’s for producers of consumer goods**

Variable	Positive CSR events				Negative CSR events			
	number of observations	CAR [-1,0]	CAR [-1,1]	CAR [-1,2]	number of observations	CAR [-1,0]	CAR [-1,1]	CAR [-1,2]
consumer goods	91	0,000	0,000	0,002	10	-0,006*	-0,015**	-0,017**
other	83	0,003	0,002	0,002	50	-0,006*	-0,008**	-0,005

\* p<0.10, \*\* p<0.05, \*\*\* p<0.01 One-tailed test.

*Source: Author’s construction*

We find no significant results for positive CSR events but significant results for negative CSR events at the 5% and 10% significance level. The cumulative abnormal returns regarding producers of consumer goods are significantly higher than for producers of non-consumer goods, which would imply that producers of consumer goods are stronger affected by negative CSR news-announcements. However, the validity of the results regarding negative CSR news announcements is limited to the size of the sample tested, as we only find 10 negative events regarding producers of consumer goods. Therefore we cannot rely on our results. Nevertheless, this would be an interesting field of further research. It is interesting to mention that the number of positive CSR events regarding producers of consumer goods is higher than those of non-consumer goods, although only 122 of 505 companies of the S&P 500 index count in this category (GICS sectors Consumer Staples and Consumer Discretionary). In the category of negative CSR events however, the ratio is not as significant (17% vs. 52%). This implies that companies selling consumer goods make more efforts in order to improve their CSR-reputation and indicates that the pressure from consumers to behave in a CSR-conforming way is higher on consumer goods producers than other sectors. Therefore, we suggest that CSR events have a higher effect on the stock prices of consumer goods producers. This relationship could be analysed in further depth in future research.

## 5. Conclusion

Using the event study methodology and applying it to 234 events of 66 U.S. public traded companies in the time period from 2011 to 2016, we examine the effect of CSR news on share prices. The focal question of this paper is whether CSR news announcements have a significant effect on share prices and furthermore, if it is worthwhile for companies to implement social responsible business practices into corporation policy.

In order to identify CSR-relevant press release, we follow a predetermined procedure with predefined criteria in order to keep the search process as standardised and objective as possible. A keyword search in EBSCOhost Regional Business News database enables us to search corporate news directly for companies with specified CSR-keywords. An industry-stratified sampling method is applied to 505 S&P 500 index companies in order to keep the data collection process within the study's scope and thereby have a good market representation. This search setting still uncovers many non-CSR related news headlines, which have to be read and if they seem to be relevant must be read-in-depth in order to identify CSR relevant news announcements. News are identified with CSR criteria set by the United Nations and the relevance for inclusion is cross-checked with two researchers. A tracking table includes all for the event study required data. After reviewing the dataset we are left with 234 CSR-relevant events. We then classify the events into positive and negative CSR-events and use the Bloomberg Professional ESG Risk Scorecard as well as the evaluation of online accessible data in order to assess the company's CSR-performance previously to the identified event.

We choose the The Carhart four-factor model as a sophisticated approach in order to estimate expected returns and apply it to stock data obtained from Datastream in order to calculate expected and abnormal returns. Abnormal returns are then aggregated through time for the event windows  $[-1,0]$ ,  $[-1,1]$  and  $[-1,2]$  in order to receive cumulative abnormal returns for each security. The results are then consolidated for different events by taking the average.

The following findings relate to our hypotheses, formed by the theories presented in the literature review:

1. Negative CSR-news announcements have a significant negative effect on stock prices, also after controlling for the financial impact of such events. Our estimates place the average cost at approximately \$388 million.
2. Positive CSR-news announcements have an insignificant positive effect on stock prices
3. Shareholders value offsetting CSR which regard positive CSR news announcements for companies with a history of low CSR-performance
4. Companies with a history of high CSR-performance are less penalised for CSR non-conforming behaviour

Based on our findings and the reviewed literature we argue that the implementation of CSR principles into corporation policy can strengthen a company's position on the capital markets. Corporate Social Responsibility has a significant and economically meaningful effect on stock markets, whereas negative events do significantly decrease stock prices and positive events do not have a positive significant impact. This is due to the fact that external pressure and standards to behave in a responsible manner towards CSR issues are on a very high level, therefore positive announcements are not rewarded, negative behaviour however is penalised. Furthermore, the implementation of effective CSR principles can enable companies to perform better in CSR-related issues and therefore minimise the effect feared for negative CSR announcements. We therefore conclude that it is worthwhile for companies to invest in CSR.

The most visible critique of our study is the subjectivity that it is based on in order to identify and assess events. Nevertheless, we set certain criteria and perform the assessment with two researchers in order to minimise subjectivity effects. A further concern is the effect of confounding events on the statistical inference of this study. We tried to minimise their negative effects by excluding articles from our dataset that likewise referred to other significant events. However, we could not eliminate this concern fully. A further drawback is that we did not include all relevant events as we directly searched for companies' CSR events and therefore only included 66 companies in our search. With the stratified random sampling methodology we tried to replicate the market structure. We find no indication for an introduction of systematic bias into the analysis, nevertheless our results could not be representative for smaller

publicly traded firms, as the study mostly focuses on large, leading U.S. companies when taking the S&P 500 index as a measure. Therefore, an area of further research could be to expand the study to more stock market indices. An additional field for further research could be the impact of CSR news announcements on stock prices in developing countries, as this study only considers U.S. companies and the pressure to behave in a CSR-conforming way could differ between developing and developed countries. Additionally, a classification and subsequent of events into CSR sections such as environmental, social and governmental could yield further, more defined conclusion about the significance of those CSR-aspects. As our results regarding the effect of CSR on the stock prices of producers of consumer goods are limited due to a not sufficiently big number of data points, we suggest further research in this area. It would be interesting to study the effect of Corporate Social Responsibility news announcements on different industry sectors.

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# Appendix A

## Events listed by announcement date

Table A1: Positive CSR news announcements

Company Name	Announcement Date (dd.mm.yyyy)	Related Financial Impact	CSR-Company previous to Event
Best Buy Co. Inc.	09.02.2011	no	yes
Best Buy Co. Inc.	24.02.2011	no	yes
Verizon Communications	28.02.2011	no	yes
Fifth Third Bancorp	06.04.2011	no	yes
The Bank of New York Mellon Corp.	28.04.2011	no	yes
Chevron Corp.	05.05.2011	no	no
Chevron Corp.	12.05.2011	no	no
Ford Motor	12.05.2011	no	yes
Verizon Communications	18.05.2011	no	yes
Wal-Mart Stores	12.07.2011	no	no
Verizon Communications	20.07.2011	no	yes
Chipotle Mexican Grill	25.08.2011	exp. negative	no
Xerox Corp.	13.09.2011	No	yes
Ford Motor	07.10.2011	no	yes
Ford Motor	13.10.2011	no	yes
Best Buy Co. Inc.	19.10.2011	no	yes
Fifth Third Bancorp	16.11.2011	no	yes
Ford Motor	17.11.2011	no	yes
The Bank of New York Mellon Corp.	08.12.2011	no	yes
Verizon Communications	07.02.2012	no	yes
Verizon Communications	19.03.2012	no	yes
Ford Motor	21.03.2012	no	yes
Microsoft Corp.	27.03.2012	no	yes
eBay Inc.	19.04.2012	no	yes
Nike	03.05.2012	no	yes
Ford Motor	11.05.2012	no	yes
Ford Motor	24.05.2012	no	yes

Best Buy Co. Inc.	05.06.2012	no	yes
Coca Cola Company	05.06.2012	no	yes
Ford Motor	05.06.2012	no	yes
Nike	05.06.2012	no	yes
Simon Property Group Inc	07.06.2012	no	no
Coca Cola Company	21.06.2012	no	yes
Boeing Company	21.06.2012	no	yes
Fifth Third Bancorp	12.07.2012	no	yes
Fifth Third Bancorp	25.07.2012	no	yes
FedEx Corporation	07.08.2012	no	yes
FedEx Corporation	20.08.2012	no	yes
Coca Cola Company	12.09.2012	no	yes
Chipotle Mexican Grill	04.10.2012	no	no
JPMorgan Chase & Co.	04.10.2012	no	yes
Verizon Communications	07.11.2012	no	yes
Moody's Corp	15.11.2012	no	yes
Exxon Mobil Corp.	07.12.2012	no	no
Wal-Mart Stores	12.12.2012	no	no
Verizon Communications	19.12.2012	no	yes
Carnival Corp.	20.12.2012	no	yes
Ford Motor	27.02.2013	no	yes
Wal-Mart Stores	04.03.2013	no	no
Ford Motor	14.03.2013	no	yes
Nike	18.03.2013	no	yes
Verizon Communications	19.03.2013	no	yes
Verizon Communications	21.03.2013	no	yes
PG&E Corp.	03.04.2013	no	yes
Wal-Mart Stores	12.04.2013	no	no
Nike	25.04.2013	no	yes
Ford Motor	20.05.2013	no	yes
Moody's Corp	23.05.2013	no	yes
Carmax Inc	07.06.2013	no	no
Ford Motor	14.06.2013	no	yes
Coca Cola Company	20.06.2013	no	yes
Best Buy Co. Inc.	30.07.2013	no	yes
Carnival Corp.	05.09.2013	Exp. negative	yes
JPMorgan Chase & Co.	24.09.2013	no	yes



Simon Property Group Inc	25.09.2013	no	no
Cabot Oil & Gas	02.10.2013	no	no
General Electric	20.11.2013	no	yes
Exxon Mobil Corp.	02.12.2013	no	no
Moody's Corp	09.12.2013	no	yes
Nike	09.12.2013	no	yes
Boeing Company	14.01.2014	no	yes
FirstEnergy Corp	14.01.2014	no	no
The Bank of New York Mellon Corp.	04.02.2014	no	yes
Carnival Corp.	10.02.2014	no	yes
Ford Motor	12.03.2014	no	yes
Fifth Third Bancorp	10.04.2014	no	yes
PG&E Corp.	18.04.2014	no	yes
Carnival Corp.	21.04.2014	no	yes
Wal-Mart Stores	23.04.2014	no	no
General Electric	25.04.2014	negative	yes
Ford Motor	28.04.2014	no	yes
Wal-Mart Stores	29.04.2014	no	no
JPMorgan Chase & Co.	30.04.2014	negative	yes
Coca Cola Company	02.05.2014	no	yes
Carnival Corp.	05.06.2014	no	yes
Ford Motor	05.06.2014	no	yes
Xerox Corp.	09.06.2014	no	yes
Ford Motor	18.06.2014	no	yes
Ford Motor	24.06.2014	no	yes
JPMorgan Chase & Co.	24.06.2014	negative	yes
General Electric	08.07.2014	no	yes
Carnival Corp.	15.07.2014	no	yes
Coca Cola Company	05.08.2014	no	yes
Ford Motor	14.08.2014	no	yes
Ventas Inc	10.09.2014	no	yes
Exxon Mobil Corp.	02.10.2014	no	no
Wal-Mart Stores	06.10.2014	no	no
Ford Motor	07.10.2014	no	yes
JPMorgan Chase & Co.	22.10.2014	no	yes
Ventas Inc	06.11.2014	no	yes
Chipotle Mexican Grill	17.11.2014	no	no
Moody's Corp	19.11.2014	no	yes
Carnival Corp.	20.11.2014	no	yes

Verizon Communications	15.12.2014	no	yes
Ford Motor	28.01.2015	no	yes
PG&E Corp.	25.02.2015	no	yes
Ford Motor	10.03.2015	no	yes
Verizon Communications	23.03.2015	no	yes
Fifth Third Bancorp	13.04.2015	no	yes
Equinix	22.04.2015	no	no
JPMorgan Chase & Co.	30.04.2015	no	yes
Ford Motor	17.06.2015	no	yes
Wal-Mart Stores	22.06.2015	no	no
Wal-Mart Stores	08.07.2015	no	no
Ford Motor	23.07.2015	no	yes
Coca Cola Company	10.08.2015	no	yes
Coca Cola Company	08.09.2015	no	yes
Coca Cola Company	11.09.2015	no	yes
JPMorgan Chase & Co.	14.09.2015	no	yes
Ford Motor	15.10.2015	no	yes
Ford Motor	22.10.2015	no	yes
Apple Inc.	22.10.2015	no	yes
PG&E Corp.	05.11.2015	no	yes
Exxon Mobil Corp.	07.11.2015	no	no
Carnival Corp.	16.11.2015	no	yes
Wal-Mart Stores	17.11.2015	no	no
Moody's Corp	18.11.2015	no	yes
Colgate-Palmolive	30.11.2015	no	yes
Xerox Corp.	01.12.2015	no	yes
Charter Communications	15.01.2016	no	yes
Wal-Mart Stores	26.01.2016	no	no
JPMorgan Chase & Co.	16.02.2016	no	yes
Ford Motor	24.02.2016	no	yes
Ford Motor	07.03.2016	no	yes
Best Buy Co. Inc.	10.03.2016	no	yes
Humana Inc.	10.03.2016	no	yes
Ford Motor	16.03.2016	no	yes
Ford Motor	21.03.2016	no	yes
Colgate-Palmolive	22.03.2016	no	yes
PG&E Corp.	30.03.2016	no	yes
Carmax Inc	07.04.2016	no	no
Ford Motor	14.04.2016	no	yes

Fifth Third Bancorp	22.04.2016	no	yes
Nike	11.05.2016	no	yes
Edwards Lifesciences	11.05.2016	no	yes
Colgate-Palmolive	17.05.2016	no	yes
Ford Motor	17.05.2016	no	yes
PG&E Corp.	20.05.2016	no	yes
General Electric	14.06.2016	no	yes
Humana Inc.	15.06.2016	no	yes
Union Pacific	30.06.2016	no	yes
Amazon.com Inc	08.08.2016	no	no
Apple Inc.	17.08.2016	no	yes
Exxon Mobil Corp.	18.08.2016	no	no
Coca Cola Company	29.08.2016	no	yes
Ford Motor	29.08.2016	no	yes
Verizon			
Communications	06.09.2016	no	yes
Amazon.com Inc	15.09.2016	no	no
Equity Residential	19.09.2016	no	yes
Humana Inc.	20.09.2016	no	yes
Johnson & Johnson	24.10.2016	no	yes
Amazon.com Inc	17.11.2016	no	no
Nike	17.11.2016	no	yes
Ford Motor	21.11.2016	no	yes
Humana Inc.	21.11.2016	no	yes
Republic Services Inc	22.11.2016	no	no
Exxon Mobil Corp.	01.12.2016	no	no
Nike	01.12.2016	no	yes
Carnival Corp.	02.12.2016	no	yes
Carnival Corp.	05.12.2016	no	yes
Moody's Corp	05.12.2016	no	yes
United Technologies	05.12.2016	no	yes
Wal-Mart Stores	08.12.2016	no	no
Fifth Third Bancorp	22.12.2016	no	yes

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Table A2: Negative CSR news announcements

Company Name	Announcement Date (dd.mm.yyyy)	Related Financial Impact	CSR-Company previous to Event
Ameren Corp	12.01.2011	negative	yes
Apple Inc.	09.02.2011	no	yes
Chevron Corp.	15.02.2011	negative	no
Johnson & Johnson	08.04.2011	negative	yes
Xerox Corp.	08.04.2011	negative	yes
CF Industries Holdings Inc	20.04.2011	no	no
Yahoo Inc.	13.05.2011	no	no
Quest Diagnostics	05.07.2011	exp. negative	yes
United Continental Holdings	05.07.2011	no	yes
Verizon Communications	06.07.2011	negative	yes
Exxon Mobil Corp.	09.07.2011	exp. negative	no
Moody's Corp	19.08.2011	no	yes
Apple Inc.	31.08.2011	no	yes
Union Pacific	19.10.2011	no	yes
Chevron Corp.	18.11.2011	exp. negative	no
The Cooper Companies	13.12.2011	no	no
Goldman Sachs Group	28.03.2012	no	yes
Johnson & Johnson	11.04.2012	negative	yes
Wal-Mart Stores	23.04.2012	exp. negative	no
Freeport-McMoRan Inc.	24.05.2012	no	yes
Abbott Laboratories	07.07.2012	negative	yes
JPMorgan Chase & Co.	16.08.2012	exp. negative	yes
Texas Instruments	21.11.2012	negative	yes
Du Pont (E.I.)	27.11.2012	negative	no
Verisign Inc.	23.01.2013	no	yes
Apple Inc.	25.01.2013	no	yes
Exxon Mobil Corp.	29.03.2013	exp. negative	no
Wal-Mart Stores	28.05.2013	negative	no
Nike	12.06.2013	no	yes
Amazon.com Inc	07.08.2013	no	no
JPMorgan Chase & Co.	20.08.2013	no	yes

Goldman Sachs Group	04.12.2013	no	yes
American electric power	28.05.2014	no	yes
Ford Motor	12.06.2014	negative	yes
Yahoo Inc.	15.09.2014	exp. negative	no
JPMorgan Chase & Co.	17.09.2014	negative	yes
Ford Motor	03.11.2014	no	yes
Simon Property Group Inc	19.12.2014	no	no
Freeport-McMoRan Inc.	09.02.2015	no	yes
Exxon Mobil Corp.	28.02.2015	negative	no
Gap (The)	11.03.2015	no	no
Nike	31.03.2015	no	yes
Exxon Mobil Corp.	08.04.2015	no	no
Ford Motor	12.05.2015	no	yes
Ford Motor	04.06.2015	no	yes
Exxon Mobil Corp.	16.09.2015	no	no
Microsoft Corp.	16.09.2015	no	yes
Synopsys Inc.	28.09.2015	no	yes
BHP Billiton Ltd.	05.11.2015	exp. negative	no
Vale SA	05.11.2015	exp. negative	yes
Boeing Company	11.02.2016	no	yes
Gilead Sciences	27.05.2016	no	no
Johnson Controls International	11.07.2016	negative	no
Mylan N.V.	20.09.2016	no	no
Exxon Mobil Corp.	29.09.2016	exp. negative	no
Yahoo Inc.	07.10.2016	no	no
Yahoo Inc.	17.12.2016	no	no
Kinder Morgan	28.12.2016	exp. negative	no
General Electric	17.08.2012	no	yes
Johnson & Johnson	31.08.2012	negative	yes

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# Appendix B

## Appendix to the calculation of cumulative abnormal returns

Table B1: Average cumulative abnormal returns  $\overline{\text{CAR}}$

		CAR [-1,0]	CAR [-1,1]	CAR [-1,2]
<b>Positive News</b>		0,0010	0,0011	0,0019
Previous CSR-performance	high	0,0008	0,0010	0,0019
	low	0,0023	0,0017	0,0022
Without negative financial impact		0,0009	0,0011	0,0020
<b>Negative News</b>		-0,0063	-0,0092	-0,0071
Previous CSR-performance	high	-0,0043	-0,0091	-0,0083
	low	-0,0091	-0,0093	-0,0054
Without negative financial impact		-0,0123	-0,0122	-0,0085

Table B1 shows the values for the cumulative abnormal returns when aggregated across firms for both positive as well as negative news announcements. As a test for robustness values for the event windows [-1,1] & [-1,2] are also included.

Table B2: Average CAR standard deviation

		CAR [-1,0]	CAR [-1,1]	CAR [-1,2]
<b>Positive News</b>		0,0015	0,0016	0,0017
Previous CSR-performance	high	0,0015	0,0016	0,0018
	low	0,0047	0,0048	0,0044
Without negative financial impact		0,0016	0,0017	0,0018
<b>Negative News</b>		0,0035	0,0039	0,0040
Previous CSR-performance	high	0,0055	0,0059	0,0056
	low	0,0042	0,0051	0,0056
Without negative financial impact		0,0056	0,0057	0,0056

Table 2 shows the standard deviation for the average CAR for both positive and negative events and for the different event windows. The standard deviations for the negative news are higher than for the positive news.

Table B3: Z-scores and corresponding p-values

		CAR [-1,0]	CAR [-1,1]	CAR [-1,2]
<b>Positive News</b>		0,6446 (0,2611)	0,6639 (0,2546)	1,0969 (0,1379)
Previous CSR-performance	high	0,5451 (0,2946)	0,6186 (0,2709)	1,0055 (0,1587)
	low	0,4871 (0,3156)	0,3496 (0,3669)	0,5006 (0,3085)
Without negative financial impact		0,6000 (0,2743)	0,6507 (0,2578)	1,1256 (0,1314)
<b>Negative News</b>		-1,7800 (0,0375)**	-2,3441 (0,00964)***	-1,7750 (0,0383)**
Previous CSR-performance	high	-0,7758 (0,2206)	-1,5537 (0,0606)*	-1,4653 (0,0721)*
	low	-2,1592 (0,0158)**	-1,8347 (0,0336)**	-0,9635 (0,1685)
Without negative financial impact		-2,2006 (0,0139)**	-2,1373 (0,0166)**	-1,5061 (0,0668)*

Table 3 shows the z-scores as well as the corresponding p-values for the positive & negatives news across the different time event windows (\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ ). None of the positive news are significant while almost all of the negative news are significant. This means that the stock prices of the firms did not increase a statistically significant amount following positive events while they decreased a statistically significant amount after the publication of negative CSR news articles.