MASTER THESIS

How do Corporate Social Responsibility announcements affect firm value?

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Abstract

Taking previous research on this topic into consideration, this thesis sets out to give some insights as to why there seems to be increasing focus on Corporate Social Responsibility (CSR) initiatives by firms. Using theory from business ethics, CSR, investor behaviour and finance as a base, we try to answer how CSR announcements made by listed firms in the U.S. affect its firm value, hereunder stock returns. After conducting an event study, similar to the approach of Elton, Gruber, Brown and Goetzmann (2014), we find no overall significant evidence that CSR announcements affect stock returns. However, when expanding the analysis by adding business sectors, our results view firms in the financial, services and basic materials sector to experience a significantly negative effect on firm value when announcing CSR initiatives.

Keywords: CSR, Event study, Firm value, Stock returns, Market efficiency.

Table of Contents

List of figures and tables:

Preface

This master thesis was written as a finalization of our Master of Science in Business Administration with a specialization in economic analysis. During the two years at University of Stavanger we have gained substantial knowledge in this field. There was however one specific topic we found interesting: Environmental economics, hereunder, CSR which has been investigated for a long time, but with various findings. The relevance of this topic has increased during the years, and we believe the growth and importance of it will continue in the future.

This paper is the culmination of six months hard work filled with ups and downs. The specific topic and research problem was independently chosen based on our interests. We have read numerous of articles, spent many hours understanding and learning the statistical programme Stata and most importantly: manually collecting the data sample. The journey has been long and very challenging, but highly educational. We have had the opportunity to apply the knowledge gained from the last two years into real life problems - an experience we would not be without.

Before proceeding with the thesis, we would like to thank our supervisor Mari Rege for her valuable guidance along the journey of writing this thesis. We would also like to express our utmost gratitude to Peter Molnár for his helpful advice and expertise within finance.

Stavanger, June 2017

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1.0 Introduction

In recent years, CSR has become a hot item for many companies. Looking at the definition of CSR provided by McWilliams and Siegel (2001); "CSR are actions that appear to further some social good beyond the interest of the firm and what is required by law". The roles and responsibilities that companies have established for the society has emerged internationally and grown significantly. Some of the reasons are due to recent high profiled incidents that have happened around the world. Some examples are for instance the BP oil spill, the Volkswagen emissions scandal, the Siemens corruption case, etc. However, CSR is not something that firms initiate only to save face, in fact, CSR activities tend to be the norm nowadays. Companies have for instance started volunteering programmes, green initiatives and donations.

American companies from the Fortune Global 500 spent on average 10.254,00 U.S. million dollars on CSR in 2011-2013 (Dattani, Still & Pota, 2015). Furthermore, a survey by PwC found 64% of CEOs to believe that CSR is "core to their business, rather than being a stand-alone programme" (Nally, 2016). When so much money is spent on CSR, and so many CEOs around the globe believe it is important, does CSR actually pay back in terms of firm value or are these spendings merely a waste? That is a question asked not only by shareholders, but also by other stakeholders such as managers. Companies are therefore challenged, and must demonstrate that these spendings generates economic value. It is, however not always easy to measure the effects of CSR on a firm. A challenge might be the qualitative measures, which are mostly based on the perceptions of individuals' various thoughts and feelings. Quantitative measures on the other hand, are to some extent less challenging as it focuses on specific financial effects. An example is firm value, which can be defined as the stock returns of each firm. Given the considerable spendings on CSR, are companies investing in these activities solely for goodness sake or do they expect a specific reaction? The aim of this thesis is to measure the financial effects and thereby view the market's reaction of firms' initiatives to CSR investments. Does it pay to give back to society or is it just an unnecessary cost? Do these initiatives trigger any effects? These questions in addition to the growth and immense focus on CSR lead to the following research problem:

"How do CSR announcements affect firm value?"

By using the event study approach of Elton et al. (2014) and Dahlsrud's (2008) categorization of the nature of CSR, we will attempt to provide further insights to how CSR announcements affect stock returns. The focus is on American companies listed on either the NYSE (New York Stock Exchange) or the NASDAQ (National Association of Securities Dealers Automated Quotations) index. By reviewing historical stock returns from the period 2014-2016, after the announcements of CSR initiatives, we will be able to assess how the market values these activities, and thereby possibly uncover the underlying motivation of firms with regards to CSR.

Recent theory has provided mixed results regarding the relationship between CSR and financial performance. Some literature find CSR to have a positive effect on firms' financial performance (Robinson, Kleffner & Bertels, 2011), others found no significant relationship between the two components (Curran & Morran, 2007), while some researchers identify a negative relationship between CSR and a firm's financial performance (Obendorfer, Schmidt, Wagner & Ziegler, 2013). Earlier researches have to our knowledge studied CSR and its effect through event studies by the inclusion of a CSR index, green rankings, etc. Our study however, uses a different event, which is a firm's announcement of its CSR initiatives. We also focus on most recent announcements and two of the largest stock markets in the world. Our contribution to research is the development of a better understanding of the topic, in addition to shedding a light over a field that needs more research. In this thesis, the findings are that CSR announcements do not have any significant effect on firm value.

1.1 The Structure of The Thesis

This thesis is structured as follows: Chapter 2 presents relevant theories and previous literature on the topic of CSR. Chapter 3 introduces the event study methodology and the cross-sectional analysis. Further, the methodology of our research is presented in chapter 4. Chapter 5 provides the results of our thesis, while chapter 6 includes the discussion of the results found in the prior chapter. The thesis is rounded off with a conclusion in chapter 7. Each chapter is divided into sections, in order to give the reader a better overview of the contents in each chapter.

2.0 Background

This chapter is divided into three sections. The first section introduces various theories about CSR, stakeholders and stock prices. The second section is called empirical evidence and presents previous research on the topic of CSR and financial performance. The third and last section presents the context and the null hypotheses of our thesis.

2.1 Theory

There are many aspects of both empirical and theoretical studies that are relevant and important to the question "How do CSR announcements affect firm value?". By reviewing earlier studies, we will in this chapter present and discuss various findings and the theoretical link between CSR and financial performance. First, we present the basis of CSR and its effect on a firm's financial performance. Further, the link between CSR and business ethics is discussed. We then review the stakeholder and shareholder relationship and how they respond when companies invest in CSR. Lastly, a presentation of investor behaviour and the movements in stock prices will be provided.

2.1.1 Corporate Social Responsibility

Nowadays many managers invest in CSR, which is described by Epstein-Reeves (2012) as a way for companies to benefit both themselves and society. The main reason why organizations engage in CSR is because it might create a positive reputation. CSR is also seen as a source of competitive advantage (Porter & Kramer, 2007). Firms adhere to CSR initiatives as a means of maximizing long-run value and ensuring a sustainable future for the firm itself (Lougee & Wallace, 2008).

CSR literature has in the last decade been a very popular subject for researchers, much of this popularity stems from the ambiguous results of the mentioned studies with regards to the effect that CSR has on the financial performance of firms (Arx & Ziegler, 2014). A quite substantial host of literature refers to neo-classical microeconomic theory when explaining that the cost of CSR activities outweighs any financial gain it might bring (Telle, 2006).

Both Brammer, Brooks and Pavelin (2006), and Bird, Hall, Momentè and Reggiani (2007) found that firms that tend to invest or spend the least amount of resources on CSR have the highest stock returns. Both studies also shed some light on what particular element of CSR affects the financial performance of firms. They find that social CSR investments have the

"worst" impact on stock returns (Brammer et al., 2006), this finding was also supported by Bird et al. (2007). Interestingly, Arx and Ziegler (2014) found that CSR activities, and especially social CSR activities, have a positive impact on the performance of a firms' stocks in the financial market compared to other firms in the same industry. In conclusion, rather opposite of what both Brammer et al. (2006), and Bird et al. (2007) found.

Cellier and Chollet (2011) states that CSR is more likely to affect measures of financial performance that is more accounting-centric compared to that of financial performance measured in terms of the capital market. In the same study they found that CSR rating provides the market with better information about the CSR components and its individual quality. Components related to CSR activities within environment and human resources are mainly regarded as costs, whereas activities related to community involvement have mixed results. Lastly, CSR activities related to human rights are the only component that the market values as a benefit (Cellier & Chollet, 2011). The market's reaction to the announcement of CSR components is an exciting one. Dahlsrud (2008) develops five dimensions of CSR; environmental, social, economic, stakeholder and voluntariness. By classifying firms' CSR announcements within one of these five components, a clear picture can be obtained as to how the market reacts on the announcement of these particular CSR activities.

Components	Example
Environmental	Anything concerning the natural environment, such as cleanliness, sustainability, development, etc.
Social	Anything concerning the dynamics between business and the local society, such as consideration of impact of operations, integration of important social matters in everyday business operations, etc.
Economic	All economic aspects, such as contributing to economic development, ensure profitable operations, etc.
Stakeholder	Anything regarding the relationship between the firm and their employees, suppliers, customers, owners, etc.
Voluntariness	Any actions that are not mandatory or prescribed by law, meaning the firm has no legal obligation to undertake such activity.

Table 1: The five dimensions developed by Dahlsrud (2008) and his corresponding explanations to each of them.

2.1.2 Business Ethics

In recent years, business ethics has become a very popular topic that regularly receives lots of attention from the media, stakeholders and the environment in general. We can define business ethics as "the study of business situations, activities, and decisions where issues of right and wrong are addressed" (Crane & Matten, 2010). Jackson (2011) explains the importance of being ethical and how it has evolved more and more in worldwide commerce. Firms also realize that ethical behaviour may result in positive outcomes for their firm. The concept of CSR can be related to business ethics as business ethics justifies CSR, and is thereby a part of it. This is in line with Carroll's (1991) model of CSR which include a firm's ethical responsibilities that are expected by the society. The context of both CSR and business ethics are to build and maintain a positive reputation within the community and investors. We can argue that CSR and business ethics are similar as they are both beneficent actions, but that CSR is supplementary as it is not mandatory or prescribed by law. By implementing ethical

principles such as honesty, cooperativeness, and trustworthiness, firms can gain long-term shareholder value and competitive advantage (Jones, 1995).

2.1.3 Stakeholders, Shareholders and CSR

Barnea and Rubin (2010) study the conflict between shareholders and CSR. They found that insiders who are connected to the firm, such as directors and managers, benefit from being associated with firms having a good CSR-reputation. Therefore, they tend to overinvest in CSR-practices as long as they do not bear any substantial cost of it. This will however decrease shareholder value, and thereby lead to conflicts between insiders and stakeholders. Stakeholders are anyone that might have a stake in a firm or are otherwise affected by its actions. Further, McWilliams, Siegel and Wright (2006) discuss inconsistent results in the relationship between CSR and firm performance. Their findings reported negative, positive and no relationship. In accordance to Story and Neves (2015), CSR enhances stakeholders' performance within organizations. Their study reveals that employees are driven to commit in a special way on their job when they perceive their organization to invest in CSR. Similarly, a study by Brekke and Nyborg's (2008) found firms to attract more productive workers with their CSR profile. Individuals favour firms being socially responsible. In this case they also have a willingness to receive a lower wage which will benefit the firm.

According to Baker and Ricciardi (2014) socially conscientious investors contemplate CSR in their economic decision making process, and thereby allocate their financial resources based on the societal impacts of the entities they are funding. Most investors choose socially responsible investing for long-term competitive advantage, efficiency and their own personal values. A study by Cordeiro and Tewari (2015) found the size of a company to affect investor's behaviour during the announcement of a green ranking. This is most likely due to the visibility of larger firms, which makes them more attractive. Furthermore, the degree of investments in CSR could also affect the behaviour of investors. An over- or underinvestment in CSR activities can according to Wang, Qiu and Kong (2011) lead to undesirable investor responds.

However, when looking at CSR activities through stakeholder theory several authors have found that CSR announcements have a positive impact on the financial performance of firms.

Conversely stakeholders can affect firms as well, particularly large stakeholders such as organizations and unions could be able to affect the financial situation of some firms (Arx & Ziegler, 2014; McWilliams et al., 2006). The stakeholder theory proposes managers to satisfy the different groups which have an interest in the firm, such as the local community, suppliers and customers. Taking an interest in social responsibility could be beneficial to the firm, as an absence of this could lead to dissatisfied stakeholders who can withdraw their support for the firm, and support its competitors instead.

2.1.4 Stock Price Movements

Stock prices constantly change, some companies experience considerable stock price changes whilst others experience smaller changes. Several research papers have been studying the effect of important news on stock returns. Chan (2003) examines this particular case by comparing stock returns with news against similar stock returns without public news. His study reveals negative drift after bad news, investors seems to react slowly in this case. Stocks having good news exhibit less drift. This could be due to investors getting an enhanced amount of information regarding the true value of an asset, and when they agree and trade to this information, a smaller drift in abnormal returns occur.

Empirical research has over the years found an under- and overreaction of stock prices. According to Barberis, Shleifer and Vishny (1998) stocks that underreact deliver a higher return in the following period. This is due to investors being conservative when receiving good news, and therefore acts cautious. They later realize the stock's full potential and invests more during the next period. Stocks that overreact on the other hand, stem from investors being immensely optimistic about previous good news and expecting it to also be good in the future. This results them to send the stock prices to a higher level. Unfortunately, the subsequent announcements most likely contradict their optimism, which leads to lower returns.

2.2 Empirical Evidence

There have been a substantial number of studies trying to capture the relationship between CSR and financial performance throughout the years. The adopted methodology usually varies between event studies and studies that measures the relationship between a company's corporate social performance and its long-term performance (McWilliams & Siegel, 2000).

This section presents the various results of earlier research on the effects of CSR on financial performance.

Event Studies

Event studies measure the effects of an event on a company's stock return. This methodology will be discussed further in chapter 3. Both Robinson et al. (2011) and Consolandi, Jaiswal-Dale, Poggiani and Vercelli (2009) conducted event studies in order to assess how the European market responds to an inclusion or a deletion from the Dow Jones Sustainability Index (DJSI). They discovered a positive and significant cumulative abnormal return of the firms in the inclusion of DJSI. This result correlates with Wang and Chen's (2015) view of CSR, arguing that CSR to not only enhance a company's reputation but also leads to good financial performance.

Both Fisher-Vanden and Thorburn (2011) and Obendorfer et al. (2013) found a negative effect connecting the membership of a CSR index to firm performance, although using different models in the calculation of abnormal returns. The variety in results continues as Becchetti, Ciciretti, Hasan and Kobeissi (2012) find a significant negative effect on abnormal returns after announcements of firms exiting a CSR benchmark. Further, Curran and Moran (2007) found no significant results when examining the effects of a company entering the FTSE4Good Index. CSR has also been found to have no significant long-term effects when a firm is either included or excluded from the Dow Jones World Index (Cheung, 2011).

As earlier mentioned, researches provide distinctly different answers to the topic at hand. There are plenty of reasons as to why we find this topic of interest. We argue that the topic is worth further pursuing due to the high amount of inconclusive evidence, which could have occurred due to measurement deficiencies and the varying definitions of CSR. Davidson and Worrell (1990) explain why the results differ by three reasons: the usage of doubtful social responsibility indexes, insufficient methods of data sampling and deficient measures of financial performance.

Portfolio Analysis

Another method that can be applied is the portfolio analysis. This analysis categorizes firms in subsets and can be used to compare socially responsible funds against conventional mutual funds (Obendorfer et al., 2013). This is to study whether the market rewards or punish

socially responsible investing. Contradictory results were also found by using this method. Hamilton, Jo and Statman (1993) found the performance of socially responsible funds not to be different from conventional funds, which is further supported by the findings of Statman (2000). Derwall, Guenster, Bauer and Koedijk (2005) on the other hand, found high-ranked portfolios to deliver positive returns in addition to outperforming companies with a low environmental performance. However, a limitation of this method is that it does not identify the effects caused by social or environmental activities (Obendorfer et al., 2013). Thus, portfolio analyses are not relevant for this study, as we want to examine the mentioned effects.

Regression Analysis

Compared to the portfolio analysis, the regression analysis focuses on the individual firm rather than a subset of firms. It can also allude to the long-term effect of CSR announcements, and emphasises accounting measures such as return on sales, return on assets, etc. Various results were also found using this approach. Both Waddock and Graves (1997) and Russo and Fouts (1997) discovered CSR to have a positive effect on a firm's financial performance. Nelling and Webb (2008) on the other hand, found no evidence of the relationship between CSR and a firm's financial performance. However, a drawback of this approach is according Telle (2006) often the absence of control for omitted unobserved variables. The lack of control for these variables might give uncertain results as it exclude variables that might have an effect on the variable of interest. Due to the risk of many variables that could be omitted when measuring the effects of CSR on financial performance, this method will not be used as our main model. However, it is used as an extension of our analysis to measure other variables that could affect stock returns after the event.

2.3 Context and Hypotheses

In this section we will present the U.S. context and the development of our hypotheses. The U.S. economy has a considerable meaning for our study as we are focusing on the U.S. market. It will therefore be further discussed. Our hypotheses are based on the findings of previous literature of CSR and financial performance.

2.3.1 The U.S. Context

We wanted to test our hypotheses in stock markets that are stable and established. There are a number of large stock markets that we could have chosen for our study; Euronext, Japan Exchange Group-Tokyo or London Stock Exchange, however, the largest ones are found in America. When looking at the combined value of every listed national firm in the 10 largest stock markets in the world, the NYSE and the NASDAQ index amount for over a quarter of this value. The two American stock exchanges also represent nearly half of the trading volume in the world (Berk & DeMarzo, 2017).

As with other countries, the U.S. economy was influenced by the fall of the oil prices in June 2014. The depreciation came to fruition because of two reasons: weak demand caused by economic growth, which is according to Bowler (2015) coupled with the U.S. production. The second reason is that OPEC (Organization of the Petroleum Exporting Countries) refused to cut production. The fall of the oil prices is a potential factor that could affect our study, as the firms' financial performance might have been affected by the incident. According to Prakken and Varvares (2015) the dollar experienced a 10 percent value growth after the drop. This however resulted in both a decrease in inflation and a slower GDP (Gross Domestic Product) growth, which includes factors as consumption, investment, government spending and net export. The U.S. economy faced a drop in GDP growth rate in 2014, which during a later period started to increase. Nonetheless, a decrease struck in 2015. A graph of the U.S. growth rate is illustrated below:
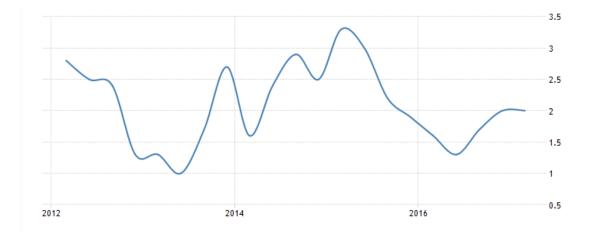

Figure 1: U.S. GDP growth from the time period 2012-2016. Source: Trading Economics.

Another impact is the economic growth in the U.S., which was at 2.4 percent in 2014. Factors leading to the growth were non-federal governmental spending, personal consumption, expenditure growth and lower oil prices (Sharf, 2015). Additionally, there was an increase in import which had a negative effect on GDP. The U.S. economy experienced a decrease in export caused by the strong U.S. dollar in 2015. It was also faced with a fall in commodity prices. The economic growth fell in 2015 below 2 percent, whereas the low oil prices lead consumers to increase their savings, which meant less spending. Furthermore, the Federal Reserve increased interest rates at the end of the year, which is a sign of confidence in the recovery of the economy ("A U.S. Economy," 2016). The U.S. economy experienced in 2016 an economic growth of 1.6 percent. This is the largest growth rate the economy has experienced since 2011, and a decrease of 1 percent from the prior year. According to Swanson (2017) the reasons for the low growth were dull investments and the halt of companies within the energy sector resulting from the low oil prices. Economic growth affect companies in different ways, depending on which sector they belong to.

We have in our thesis included companies from eight different sectors: Financial, consumer goods, services, healthcare, utilities, technology, industrial goods and basic materials. These specific companies and sectors are included as they have an impact on the U.S. economy. According to Smith (2016), the financial sector dominates in the U.S. economy as it has always been very profitable. This can be explained by the increase of asset values and unchanging management fees. The growth in the financial sector also stems from household credit, hence the increase of money borrowing among individuals.

2.3.2 Hypothesis Development

With the varying results within the topic of CSR and its effect on financial performance, it is important to further investigate whether companies receive any returns in terms of stocks on their CSR investments. Our hypotheses are based on findings from previous literature whereas the relationship between CSR initiatives and firm value is examined. We form the hypotheses in two different possible outcomes: *no effect or any effect*. For the sake of order and consistency, we present four hypotheses that will be tested in later stages of this thesis. First, we present the main hypothesis, which is in line with our research problem.

H_0: *CSR announcements have no effect on firm value.*

H_1: *CSR announcements affect firm value.*

The current hypothesis will view the overall effect from a company's public announcement of its investment in a CSR project, and justify a comprehensive answer to whether CSR initiatives affect financial performance, thus, stock return. Further, we look at other external factors that could have an effect on stock returns. The second hypothesis accommodates firm specific factors such as market value (size), price-to-book ratio, price-to-earnings ratio and sector categorization of the eight included sectors, which will be explained in chapter 4.

H_0: *Firm specific factors have no effect on firm value during CSR announcements.*
H_1: *Firm specific factors affect firm value.*

The third hypothesis looks at macroeconomic factors, hence, the foreign exchange rate of the U.S. dollar and the Euro:

H_0: *US/Euro foreign exchange rate has no effect on firm value during CSR announcements.*
H_1: *US/Euro foreign exchange affects firm value.*

In the last years, the oil prices have fallen acutely and experienced a rough patch. A fall of the oil prices might have affected the financial performance in many ways, as oil has an enormous impact and importance on the world economy in the forms of labour, investment and growth. Therefore, the crude oil price is formulated in the last hypothesis:

H_0: *Crude oil price has no effect on firm value during CSR announcements.*
H_1: *Crude oil price affects firm value.*

3.0 Empirical Strategy

We will in this chapter introduce the methods that were used to answer our research problem. The event study methodology is presented in the first section, followed by an introduction of the cross-sectional analysis.

3.1 The Event Study

In order to investigate our research problem, we apply the event study methodology. We are doing this to capture the reaction of the stock return to the CSR announcement. This will tell us how the market values CSR announcements and the efficiency of the market with regards to access to information.

The concept of this study is to investigate the effect of a specific event by measuring the valuation effects. In this case, an event is defined as anything that is leading to disclosure of new information (McWilliams & Siegel, 1997). According to Arx and Ziegler (2014), event studies examine the mean stock returns of firms that encounter a specific event. Thus, the aim is to measure the effect on firm value. A standard approach is to calculate the abnormal returns (AR) of a company, as AR can account for general movements in the stock return. Further, these ARs are cumulated over a number of days which is in the event window, hence, gives the cumulative abnormal return (CAR). CAR is presumed to measure the total impact of an event through the event window (Benninga, 2014). The calculations will be explained in section 4.1. The validity of an event study rests on the assumptions of market efficiency and no confounding effects (McWilliams & Siegel, 1997). These properties will be discussed further.

The strengths of this methodology lie in the fact that it reflects the effect of an event immediately in security prices, given rationality in the marketplace (MacKinlay, 1997). The method's statistical properties is also according to Fisher-Vanden and Thorburn (2011) well documented in the literature, and has more than 500 publications in top finance journals (Kothari & Warner, 2007).

3.1.1 The Timeline

When conducting an event study, it is necessary to identify some time parameters; the event date, the event window and the estimation window.
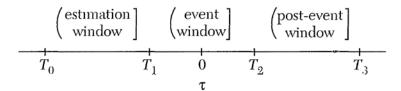

Figure 2: Timeline for an Event Study (MacKinlay, 1997).

$\tau = 0$ is defined as the day the event of interest is announced. τ_0 to τ_1 constitutes the estimation window length L_1. τ_1 to τ_2 constitutes the event window length L_2.

Only the short-term perspective is being considered in this thesis. This is because we believe that any results derived from conducting an event study with a large event window will not represent the actual effect of the CSR announcements, as other factors are bound to play a larger role in affecting the performance of the companies' returns. The study of Kothari and Warner (1997) accentuates the problems of misspecifications tests for firm-specific events when using a long event window. Their study indicates abnormal performance when there is no presence of one, which results in a reduced liability of inferences of long-horizon studies. According to McWilliams and Siegel (1997), an event window should be as short as possible to avoid confounding effects, which is more crucial in long event windows. Additionally, empirical studies have demonstrated that short event windows capture the significant effect of an event (Ryngaert & Netter, 1990).

As to most models, the event study has its weaknesses. McWilliams and Siegel (1997) points out the problems of long event windows, hence confounding effects. Long event windows could diminish the power of the test statistic; therefore an event window should be long enough to measure the effect of the event, and short enough to avoid any possible confounding effects (McWilliams & Siegel, 1997).

14

3.1.2 Market Efficiency

The event study methodology relies as earlier mentioned, on the assumption of market efficiency. An efficient market is defined as a financial market where the asset prices reflect all available information (Fabozzi & Drake, 2009). Therefore, investors should be able to expect a return that would compensate for their risk, opportunity cost and anticipated inflation. According to this theory investors do not have advantage of predicting the return of a stock as everyone has the same access to information. Further, Elton et al. (2014) describe the three forms of market efficiency as the degree to which stock prices reflect the available information in the market place. Weak form market efficiency suggests that stock prices are only reflected by data concerning the trade of stocks, meaning supply and demand of certain stocks in the market. Semi-strong form market efficiency characterizes a market in which the stock prices of a company are given all of the public information available of said company. Lastly, strong form market efficiency suggests that stock prices are represented by all information about the company, even information that is not available to the public (Elton et al., 2014).

Event studies presume that the market is semi-strong form efficient (Ang, 2015). According to Fabozzi and Drake (2009), empirical evidence supports the idea of the U.S. market being a semi-strong form of market efficiency, thus the assumption of market efficiency holds. By viewing the cumulative abnormal returns we will be able to assess when the market reacts to the announcement of CSR initiatives. In doing so, new and interesting data on CSR announcements and stock market reactions will be brought forth.

3.1.3 Confounding Effects

The assumption of no confounding effects is critical in an event study. The occurrence of other events will therefore make it difficult to isolate the impact of the event of interest (McWilliams & Siegel, 1997). The confounding effects are referred to as anything that could affect a company's stock returns such as announcements about new product launches, earnings announcements, mergers and changes in a key executive. McWilliams and Siegel (1997) further accentuate the difficulties of controlling for confounding events with long estimation windows.

3.2 Cross-Sectional Analysis

A cross-sectional analysis, with cumulative abnormal return as the dependent variable in addition to different independent variables, will identify firm characteristics that explain the variation across firms. This is a standard method that is used in almost all event studies. Using a cross-sectional analysis in order to get an insight into firm characteristics and market reaction is also in line with the study of Arya and Zhang (2009), which found significant independent variables.

4.0 Data

The first section in this chapter describes how we applied the methodology of the event study; the second section presents the significance test; and the third section describes the independent variables used in the cross-sectional analysis. Descriptive statistics are presented in the last section.

4.1 The Methodology

With regards to theoretical framework, we chose to follow the eight-step methodology of event studies put forth by Elton et al. (2014). The analysis was conducted in Stata. Additional issues regarding data availability and collection are also addressed.

1) Collection of Sample

There were no existing dataset that was relevant for our thesis, we therefore manually created the datasheet. We chose as earlier mentioned to focus on the American market and the companies that are listed on either the NYSE or the NASDAQ index. In order to find publicly available CSR announcements we used the database at Businesswire.com, which is a global leader in press release distribution (Businesswire, n.d). We manually searched through Businesswire for CSR news and announcements within the timeframe of 2014-2016. We wanted as recent data as possible, so we therefore chose companies during this period. Initially, we started with a total sample of 173 press releases from companies registered on the American market. All of these press releases were CSR initiatives in the field of environmental, social, economic, stakeholder or voluntariness (Dahlsrud, 2008). Once the companies were identified, Thomson Reuters Datastream was used to collect its financial data. In order to get the most sufficient examination of the relationship between a company's CSR announcement and its stock return, we eliminated 86 press releases by the cause of confounding events or lack of stock data. Companies with other news and events found in the specified event window were not included in the sample. This results to the final sample of 87 press releases from 87 different companies. A full overview of companies included in the data sample along with its event date is given in appendix A.

2) Determination of Day of Announcement

In this thesis, the event date is the day of a company's public announcement of its investment in a CSR project. The announcement days will naturally vary for each company. Companies are only included once, although they might have had more press releases from other dates.

3) Determine the Event Window

In this thesis we will only operate with a short-term perspective, with four different event windows: (-3,3), (-2,2), (-1,1) and (0,1). Where the first event window is three days prior to the announcement, the day of announcement and three days after the announcement are being studied, thus a total of seven days. The second event window consists of two days prior to the announcement, the announcement day, followed by two days after the announcement, giving it a total of five days and further on. The short-term event windows are also in accordance with Fisher-Vanden and Thorburns' (2011) study.

4) Computation of Stock Returns

In order to compare different companies' reaction to the event, a calculation of its stock returns are made. Daily stock returns are calculated by subtracting the new stock price by the old stock price (previous day), this is then divided by the old stock price (Jeong & Yoo, 2011).

$$R_{it} = \frac{P_0(new) - P_0}{P_0} \qquad (1)$$

5) Computation of the AR for the Same Period

Abnormal returns (AR) are calculated by subtracting the expected stock returns given no announcements from the actual returns.

$$AR_{i\tau} = R_{i\tau} - E(R_{i\tau}|X_\tau) \qquad (2)$$

where $AR_{i\tau}$, $R_{i\tau}$ and $E(R_{i\tau}|X_\tau)$ are the abnormal return, return of company i for the time period τ and the expected return. In order to calculate the expected return the constant mean market model or the market model can be used. We chose to calculate AR by using the market model as it performs an improvement over the former model. The market model reduces the variance of the abnormal return by removing the fragment of the return related to variation in the market's return (MacKinlay, 1997). The return on the Center for Research in Security Prices (CRSP) U.S. total market index was used as the market return, which was collected from Kenneth R. French's data library.

The market model is estimated during the estimation period. As with an earlier study made by MacKinlay (1997), we also chose an estimation window of 250 days prior to the event starting from day -4, which gives an estimation period of (-253, -4). We were careful not to overlap the estimation window with the event window, as including the event window in the estimation of the normal model parameters could lead to the event returns having a substantial influence on the normal return measure (MacKinlay, 1997). The formula is as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (3)$$

$$\text{where} \qquad var(\varepsilon_{it}) = \sigma_{\varepsilon_t}^2$$

R_{it}	=	The return at period t
R_{mt}	=	The market return at period t
ε_{it}	=	The zero mean disturbance term
α	=	The intercept from the estimation period
β	=	The correlation between the stock and market return during the estimation period

Thus, abnormal returns can be expressed as:

$$AR_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau} \qquad (4)$$

6) Computation of the AAR for the Same Period

Average abnormal returns (AAR) across companies were calculated to better gauge the average effect of the announcement, thus providing a better picture of the particular event being studied (Elton et al. 2014).

$$\overline{AR}_\tau = \frac{1}{N} \sum_{i=1}^{N} AR_{i\tau} \qquad\qquad (5)$$

7) Computation of CAR

The abnormal returns were aggregated across time for a security i in contemplation of drawing an overall inference for the event. Cumulative abnormal returns (CAR) are calculated by adding together the AR of the days in the event window.

$$CAR_i(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} AR_{i\tau} \qquad\qquad (6)$$

τ_1 and τ_2 represents the start and end date of the event window.

Finally a calculation of the cumulative average abnormal return (CAAR) over the entire press releases was made, using AAR instead of AR. Assessing these returns on a graph, where the rate of returns are given on the vertical axis and the days in the event window is given on the horizontal axis, we could be able to tell something about the efficiency of the market. This might add a further explanation to our result regarding how the capital market value CSR announcements.

$$\overline{CAR}(\tau_1, \tau_2) = \sum_{\tau=\tau_1}^{\tau_2} \overline{AR}_\tau \qquad\qquad (7)$$

8) Discussion of the Results

The discussion of the results will be presented in the chapter of discussion, after we have conducted the tests.

4.2 Testing for Significance

Finally, a T-test will be conducted to assess whether a CSR announcement affect the stock return. In order to do this, an estimation of the variance of the abnormal return has to be calculated using the following formula:

$$var(\overline{AR}_\tau) = \frac{1}{N^2} \sum_{i=1}^{N} \sigma_{\varepsilon_i}^2 \qquad (8)$$

According to MacKinlay (1997) the abnormal returns will be jointly normally distributed with a zero conditional mean and conditional variance:

$$\sigma^2(AR_{i\tau}) = \sigma_{\varepsilon_i}^2 + \frac{1}{L_1}\left[1 + \frac{(R_{m\tau} - \hat{\mu}_m)^2}{\hat{\sigma}_m^2}\right] \qquad (9)$$

The conditional variance has as illustrated above two components. σ^2 is the disturbance variance from the market model. The second component is an addition due to sampling error in α and β in the market model (MacKinlay, 1997). With a large estimation window, the second term reaches zero due to the vanishment of the sampling error. Hence, the variance of abnormal returns would be:

$$\sigma^2(AR_{i\tau}) = \sigma_{\varepsilon_i}^2 \qquad (10)$$

Further, the calculation of the variance of the CAAR was calculated:

$$var\big(\overline{CAR}(\tau_1, \tau_2)\big) = \sum_{\tau=\tau_1}^{\tau_2} var(\overline{AR}_\tau) \qquad (11)$$

We could now draw the inferences about the cumulative return using:

$$CAR_i(\tau_1, \tau_2) \sim N\left(0, \sigma_i^2(\tau_1, \tau_2)\right) \qquad (12)$$

21

We now had the variables needed to test the null hypothesis that the abnormal returns are zero by using the following formula:

$$\theta_1 = \frac{\overline{CAR}(\tau_1, \tau_2)}{var(\overline{CAR}(\tau_1, \tau_2))^{1/2}} \sim N(0, 1) \qquad (13)$$

4.3 Variables in Cross-Sectional Analysis

As earlier mentioned, we will expand our analysis and use CAR as the dependent variable in a cross-sectional analysis to measure the effects of other factors that could have an influence on a company's stock return. There will be four regression models, with model (1) being CAR with event window (-3,3), model (2) with CAR (-2,2), model (3) with CAR (-1,1) and model (4) with the shortest event window (0,1). The weighted least squares (WLS) method was used to estimate our regression by using the market models' standard deviation of residual as weight. Further, the independent variables are tested individually in order to capture possible significance. Although they prove to be insignificant in an analysis with other variables, they might be significant when tested individually.

We have in our cross-sectional analysis chosen firm specific factors as independent variables, since the data sample consists of firms spreading across different sectors. The following independent variables are included: market value (size), price-to-book ratio, price-to-earnings ratio, US/Euro foreign exchange rate, and crude oil price. All of the data was collected through Thomas Reuters Datastream, except the daily crude oil price which was obtained from The Federal Reserve Bank of St. Louis. Additionally, we use the eight included sectors as dummy variables to examine if these can have an influence on a company's stock return. We decided to log the market value in our analysis in order to make the different company sizes more comparable, since there is a large difference between small and larger companies.

Conforming to Fisher-Vanden and Thorburn (2011) we have chosen size, price-to-book ratio and crude oil price as independent variables. Banz' (1981) study reveals that larger firms tend to have a lower risk-adjusted return than small companies. A newer study made by Cordeiro and Tewari's (2015) viewed size as a significant effect on investor reaction.

Further, the price-to-book ratio is included for its properties as an indicator of how aggressively the market values the firm (Bodie, Kane & Marcus, 2014). Firms with a low price-to-book ratio turn out to be persistently distressed. Contrarily, a high price-to-book ratio is related with sustained profitability (Fama & French, 1995).

The daily data of prices of West Texas Intermediate (WTI) crude oil was collected through the database of The Federal Reserve Bank of St. Louis, and was included in the data sample as variables at the date of the event. The WTI crude oil is used as a benchmark in oil pricing. Crude oil has an enormous impact and importance on the world economy as it is part of the foundation of industrialization, international commerce, technological innovations and national wealth (Wang, Wei & Wu, 2011). Miller and Ratti (2009) interpret the crude oil and the stock market to have a clear relationship, as oil price shocks influence stock prices through the corporate cash flow. The rationale behind this is that the crude oil is a necessary and important input in production. In line with Ding, Kim and Park's (2016) research on the relationship between crude oil and stock markets, one financial market are likely to be affected by another market when it is under severe circumstances.

Further, US/Euro foreign exchange rate, price-to-earnings ratio and sectors were included as independent variables, as we believe these factors could also have an effect on a company's stock return. According to Jamil and Ullah (2013) the fluctuations in foreign exchange have an impact on both the market return of stock and the fluctuations in the stock prices.

The price-to-earnings ratio (P/E) closely followed by financial analysts reflects the market's optimism concerning a firm's growth prospects (Bodie et al. 2014). The P/E ratio can be applied as a practical tool for investment decisions and improvement of portfolio performance (Dudney, Jirasakuldech, Zorn & Emekter, 2015). Further, Dudney et. al. (2015) find that portfolios of low P/E multiples results to higher returns.

Eight dummy variables were created in order to measure whether different sectors could have an effect on CSR announcements. According to Hou and Robinson (2006), typically firms that operate in sectors where competition is high will have lower returns. Each company takes the dummy value of 1 for the sector it belongs to, otherwise 0.

4.4 Descriptive Statistics

In order to get a better overview of the characteristics of the sample, a summary with the dependent variables and its predictors were made as illustrated in table 2.

Statistics

Variable	N	Mean	Std. Dev	Min	Max
Dependent Variables					
CAR(-3,3)	87	0.85	3.97	-7.89	16.99
CAR(-2,2)	87	0.45	2.76	-6.17	8.43
CAR(-1,1)	87	0.3	2.28	-4.63	6.8
CAR(0,1)	87	-0.03	1.89	-4.51	6.7
Independent Variables					
Size	87	9.26	1.37	5.85	12.23
P/B	87	4.25	5.38	-2.94	33.84
P/E	87	32.87	66.22	-2.94	598
US/EUR	87	1.14	0.07	1.06	1.38
Oil	87	51.4	17.57	26.19	100.6

Table 2: Descriptive statistics: The independent variables CAR represent the cumulated abnormal returns after CSR announcements. Size is the logarithm of the market value for each firm and is measured in millions of U.S. dollars. P/B is the price-to-book ratio and compares a stock's market value to its book value. P/E is the price-to-earnings ratio and measures a firm's stock price to its per-share earnings. US/EUR is the foreign exchange rate of U.S. dollars to Euro (EUR). Oil represents the price of crude oil gathered from West Texas Intermediate measured in U.S. dollars. The data of the independent variables are gathered from each firm's event date.

Further, a categorization of the different sectors was made. Table 3 presents the total number of companies in each sector, with sector 1 (financial) and sector 2 (consumer goods) being the largest.

Sector Overview

Sector	Observations	Category
Financial	17	1
Consumer goods	19	2
Health care	7	3
Services	15	4
Technology	8	5
Utilities	6	6
Industrial goods	6	7
Basic materials	9	8
Total	87	

Table 3: Sector overview: The financial sector represents firms providing financial services. Consumer goods reflect firms that are related to purchased items by consumers. Health care includes firms that have medical and/or healthcare products or services. Services include companies that deliver intangible goods: services. Firms in the technology sector are concerned with R&D of both services and goods that are technologically based. Utilities represent companies for utilities like gas and power. Industrial goods include companies that produce goods that are further used in manufacturing or/and construction. Basic materials are a sector of companies involved with the process or/and development of raw materials.

5.0 Empirical Results

In the previous section we have explained the methodology and the hypotheses for this thesis. In the following section we will present and discuss the results of our analysis. First, the results of average abnormal- and cumulative average abnormal return will be analysed. Finally, we present the results of the cross-sectional analysis.

5.1 Results of Cumulative Average Abnormal Return

The graph in figure 3 illustrates the cumulative average abnormal return of the sample. CAAR starts drifting upward a few days before the event (-3), and then slightly drifts downward the day before the event (-1) before stabilizing. From the announcement day (0), CAAR slowly drifts upward and increases further a few days after the announcement. Hence, it reaches a new peak on day (3) after the announcement.
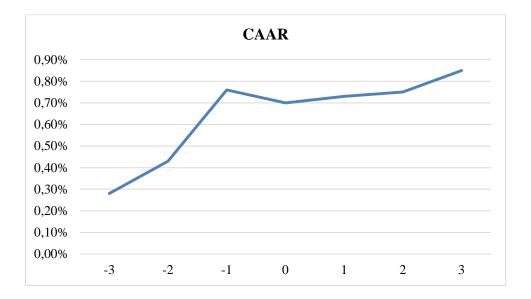

Figure 3: Cumulative average abnormal return: The Y-axis is the aggregated calculated cumulative average abnormal return across companies and time which is measured in percentage, with an event window of seven days (-3,3) on the X-axis.

The results from the four different event windows are presented in table 4.

Cumulative Average Abnormal Return

Event Window	CAAR(%)	T-statistics
(-3,3)	0.85	0.23
(-2,2)	0.47	0.15
(-1,1)	0.30	0.55
(-0,1)	-0.03	-0.02

Table 4: Results of CAAR: The results of the cumulative average abnormal return for four different event windows. CAAR is measured in percentage. The T-statistics are significant if the value > 1.96.

Our longest event window (-3,3) views a positive return of approximately 0.85%, the results are however insignificant, with a t-value of 0.23. The following event windows (-2,2) and (-1,1) also present a positive CAAR, but the results are again insignificant. Our shortest event window (0,1) on the other hand, differs from the longer windows as it illustrates a negative CAAR of -0.03%, this result is however not significant, with a t-value of -0.02.

5.2 The Gauss-Markov Assumptions

In order to satisfy the assumptions of Gauss-Markov we have chosen to test for collinearity between the independent variables by running a Variance Inflation Factor (VIF) test on Stata, in addition to a correlation test. Further, a Breusch-Pagan test will be conducted to test for heteroskedasticity, with the null hypothesis being constant variance (no heteroskedasticity). Thereafter, the Shapiro-Wilk test will detect the existence of normality.

Our findings were a relatively high correlation between oil price and the US/Euro foreign exchange rate. However, the results of VIF viewed no remarkable concerns of correlation. Further, the Breush-Pagan test detected the presence of heteroskedasticity in two of our models, which were excluded from the final analysis. The Shapiro-Wilk found our sample to be not normally distributed, and a careful interpretation of the final result will therefore be made. For further details, view appendix B.

5.3 Cross-Sectional Analysis

The results from the cross-sectional analysis are listed in table 9 and 10. The event window (-3,3) and (0,1) will be further analysed, the other event windows were omitted due to the presence of heteroskedasticity. Model (1) uses the CAR from the longest event window (-3,3), while model (4) used the CAR from the short event window (0,1). We use the following cross-sectional regression:

$$CAR_i = \beta_0 + \beta_1 Size + \beta_2 P/B + \beta_3 P/E + \beta_4 US/EUR + \beta_5 Oil + \sum_{i=1}^{7} \delta_i Sector_i$$

Cross Sectional Analysis: CAR (-3,3)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Size	-0.13(0.68)					-0.10 (0.75)	-0.11 (0.73)	-0.17 (0.66)
P/B		0.18 (0.82)				0.02 (0.83)	0.01 (0.88)	0.03 (0.74)
P/E			0.01 (0.37)			0.01 (0.40)	0.01 (0.38)	0.01 (0.37)
US/EUR				-6.90 (0.23)			-3.21 (0.78)	-4.73 (0.71)
Oil					-0.26 (0.29)		-0.02 (0.72)	-0.01 (0.91)
Financial								-0.75 (0.71)
Consumer Goods								-1.16 (0.56)
Services								-3.14 (0.13)
Technology								-0.25 (0.92)
Utilities								-2.25 (0.36)
Industrial Goods								-1.11 (0.67)
Basic Materials								-2.97 (0.19)
Constant	2.04 (0.49)	0.77 (0.16)	0.65 (0.18)	8.68 (0.19)	2.17 (0.10)	1.53 (0.61)	9.19 (0.58)	9.26 (0.50)
Observations	87	87	87	87	87	87	87	87
R-squared	0.02	0.00	0.01	0.02	0.01	0.01	0.02	0.10

Table 5: Cross-sectional analysis CAR(-3,3): The dependent variable CAR represents the cumulative abnormal return of CSR announcements for the event window (-3,3). Size is the logarithm of the market value for each firm and is measured in millions of U.S. dollars. P/B is the price-to-book ratio and compares a stock's market value to its book value. P/E is the price-to-earnings ratio and measures a firm's stock price to its per-share earnings. US/EUR is the foreign exchange rate of U.S. dollars to Euro (EUR). Oil represents the price of crude oil gathered from West Texas Intermediate measured in U.S. dollars. Financial, Consumer goods, Services, Technology, Utilities, Industrial goods and Basic materials are dummy variables equal to one if the firm belong to that sector, and otherwise zero. Financial represents the finance sector and includes firms providing financial services. Consumer goods reflect firms that are related to purchased items by consumers. Health care includes firms that have medical and/or healthcare products or services. Services denotes companies that deliver intangible goods: services. Technology is a sector which includes firms that are concerned with R&D of both services and goods that are technologically based. Utilities represent companies for utilities like gas and power. Industrial goods include companies that produce goods that is further used in manufacturing or/and construction. Basic materials is a sector of companies involved with the process or/and development of raw materials. The data of the independent variables are gathered from each firm's event date. The values in the parentheses represent p-value.
*** p<0.01, ** p<0.05, * p<0.1.

Cross-sectional Analysis: CAR (0,1)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Size	-0.03 (85)					-0.07 (66)	-0.064 (0.68)	-0.07 (0.66)
P/B		0.03 (0.36)				0.04 (0.32)	0.04 (0.32)	0.38 (0.37)
P/E			0 (0.31)			-0.00 (0.26)	-0.00 (27)	-0.00 (0.23)
US/EUR				0.85 (0.76)			-1.44 (0.80)	-2.3 (0.70)
Oil					-0.01 (0.72)		0.00 (0.89)	0.01 (0.81)
Financial								-1.61*(0.09)
Consumer Goods								-1.17 (0.22)
Services								-1.83*(0.06)
Technology								0.03 (0.98)
Utilities								-1.13 (0.28)
Industrial Goods								-1.22 (0.32)
Basic Materials								-1.84*(0.09)
Constant	0.24 (0.86)	-0.18 (0.50)	0.07 (0.74)	0.93 (0.77)	0.18 (0.77)	0.54 (0.70)	1.99 (0.71)	4.19 (0.51)
Observations	87	87	87	87	87	87	87	87
R-squared	0	0.01	0.01	0.00	0.00	0.03	0.03	0.14

Table 6: Cross-sectional analysis CAR(0,1): The dependent variable CAR represents the cumulative abnormal return of CSR announcements for the event window (0,1). Size is the logarithm of the market value for each firm and is measured in millions of U.S. dollars. P/B is the price-to-book ratio and compares a stock's market value to its book value. P/E is the price-to-earnings ratio and measures a firm's stock price to its per-share earnings. US/EUR is the foreign exchange rate of U.S. dollars to Euro (EUR). Oil represents the price of crude oil gathered from West Texas Intermediate measured in U.S. dollars. Financial, Consumer goods, Services, Technology, Utilities, Industrial goods and Basic materials are dummy variables equal to one if the firm belong to that sector, and otherwise zero. Financial represents the finance sector and includes firms providing financial services. Consumer goods reflect firms that are related to purchased items by consumers. Health care includes firms that have medical and/or healthcare products or services. Services denote companies that deliver intangible goods: services. Technology is a sector which includes firms that are concerned with R&D of both services and goods that are technologically based. Utilities represent companies for utilities like gas and power. Industrial goods include companies that produce goods that is further used in manufacturing or/and construction. Basic materials is a sector of companies involved with the process or/and development of raw materials. The data of the independent variables are gathered from each firm's event date. The values in parenthesis represent p-value.

*** p<0.01, ** p<0.05, * p<0.1.

Table 5 represents the longest event window (-3,3) in our thesis. The R-squared value of the regression model is 0.10 in (8), meaning that the model accounts for 10% of the variance. All of the independent variables seem to have a negative effect on CAR except from price-to-book value and price-to-earnings value. This is an indication of higher returns on firms with these variables, which is a contradiction to Fisher-Vanden and Thorburn's (2011) research that discovered the opposite result. The US/Euro foreign exchange rate seems to have the highest impact on CAR with a coefficient of -4.73. All of the results obtained in this model (1) with the independent variable CAR(-3,3) are however insignificant. The independent variables resulted in varying coefficients when being analysed separately. However, the results still remained insignificant.

Table 6 represents model (4) which has the event window of (0,1). The R-squared value of the regression model is 0.14, which accounts for 14% of the variance. Looking at the financial sector, we obtain a significant negative coefficient at 10% level, suggesting that the announcement returns are significantly lower for the financial sector than for other sectors. This means that CAR decreases with 1.61. The same applies for the services and basic materials sector, which also obtain a significant negative coefficient at 10% level. In this case, the announcement returns are significantly lower for the service sector and the basic materials sector with a decrease of approximately 1.83 and 1.84. Also in this model, the independent variables resulted in varying coefficients when being analysed separately, resulting in no significant effect.

6. Discussion

The following chapter presents a thorough discussion of the results from the previous section. Answers to the research problem and the null hypotheses will be brought forth, starting with a discussion of CAAR, followed by the cross-sectional analysis, and lastly strengths and weaknesses of the analysis.

6.1 CAAR

As earlier mentioned, looking at figure 3 CAAR increases until the day before the announcement. Thereafter it starts to slowly stabilize. This could be an indication of information leakage as CAAR started to decrease on day (-1), thereafter it shows a sign of no price reaction.

The three event windows (-3,3), (-2,2) and (-1,1) illustrates a positive CAAR, which can be explained by the market's valuation of CSR. Investors may have predicted CSR to have positive effect on the company and thereby deliver positive returns. The last event window (0,1) on the other hand views a negative CAAR, which means that the market penalizes companies announcing their CSR initiatives. The results are however insignificant, and the null hypothesis stating that *"A CSR announcement has no effect on the firm value."* cannot be rejected. Thus, there is no relationship between CSR announcements and a company's financial performance. An explanation to this finding can be found within the efficiency of the market. Shareholders do not perceive CSR to be an activity that generates additional returns, however it is not perceived as an activity that will lower returns either. In other words, they do not seem to have any interest as to whether a company invests in CSR practices. Furthermore, the various results in the research of CSR and its effect on a company's financial performance could make investors unsure of its profitability, and therefore value other financial factors. The ambiguous nature of our results are in line with the findings of previous research which suggest that investors neither reward nor punish firms engaging in CSR initiatives.

From our results, we can respond that CSR announcements had no effect or impact on firm value. There may be several possible explanations for no overall effect of the announcements. One relevant interpretation is that neither an economic gain nor loss is a result when firms invest in CSR projects, meaning that there is no relationship between the CSR announcements and the firm's financial performance. This can be explained by looking at both efficient- and imperfect markets. Within efficient markets, there are not any great profits or projects

resulting to a higher rate of return than the risk adjusted hurdle rate. Assuming that investors want to maximize their value, they will not see any extra value added from the CSR announcement of the firm. It is not possible to achieve any residual returns, since it is impossible to "beat the market" in an efficient market. Firms' managers want to maximize shareholder value, and will only initiate CSR projects that meet the profit criterion. Hence, this will not generate or affect the shareholder value by making it higher or lower, and in addition investors will have no interest of the firm's CSR announcement. Thus, imperfect markets do not meet the same rigorous standards as efficient markets. Here, the perfect information is unknown for all market actors, hence firm's managers have imperfect information on the expected return of the invested projects. Therefore, they will initiate CSR projects independent of the profit criteria conditions. The investors will have their own perspective of the projects by determining if the projects are profitable or not, depending on their values. In this case, CSR projects are on the same page as other projects as investors believe that firm's managers act rational and will not invest in unprofitable projects. As a result of imperfect information, the shareholder value will either be generated or degenerated. The first explanation can be concluded in that projects that meet the profit criterion are not unprofitable, resulting to no overall effect in total. Looking at the second explanation, investors may not have the opportunity to identify whether the projects meet the profit criterion or not. Some investors may conclude that CSR projects are profitable and some may argue that it is unprofitable, yielding to no overall reaction to the announcements.

An alternative explanation is that there are significant overall effects, hence that CSR announcements do have a positive or negative effect on stock returns, but that our study could not capture this effect. As earlier mentioned, we take into account that announcements are only publicly available on the day of the event, but the possibility of information leakage or investors being able to identify which projects that are profitable or not are also possibilities that can occur in the market. Another explanation could be that the studying of what happens around a CSR announcement cannot sufficiently capture the importance of CSR. The announcement itself might not be very important. Announcement would be very important if the company have no CSR investments before, and a lot of CRS afterwards. However, we could imagine that some companies keep doing CSR initiatives gradually more and more, and at some point in time they make an announcement. Thus, we can suggest that CRS matters, but the announcements do not capture the impact of CSR. Furthermore, the market might have a later reaction to the CSR project and value the project in a greater extent after it has

been implemented. In this way, the market can observe if the project itself show any good results or effects.

As discussed, there are plenty of possibilities that might have occurred resulting to no overall effect. In order to find significance, different variables and conditions can be studied.

6.2 Cross-Sectional Analysis

Model (1) and Model (4) have a relatively low coefficient of determination. Both models have a low R-squared of both 10% and 14%, which is relatively low as it means 90% and 86% of the variations in CAR are not explained. We tried both focusing on firm specific characteristics which proved to be significant in earlier research and other factors that could affect CAR without being successful, as our variables turned out to be insignificant.

The size of a company has a negative effect on both of the regression models, which means that larger companies have a stronger negative impact on CAR than smaller companies. This result is however insignificant, which means that we failed to prove that there is a relationship between the company's announcement, size and CAR. This indicates that investors interpret firms engaging in CSR activities equally with regards of firm size. Since large firms tend to get more attention in the media, this also implies that media coverage does not have an impact on the announcements' reaction. This can also be related to market efficiency, where all relevant information is public.

Furthermore, we find a significant relationship between CAR and the three sectors: financial, services, and basic materials in model (4). All these three factors have a negative effect on CAR, causing it to decrease by -1.61, -1.83 and -1.84. Investors in these sectors do not seem to value CSR, and the companies are being penalized for their CSR initiatives. The financial sector has a strong influence economically, but it does not affect the environment and society as other polluting sectors like the industrial sector. Therefore, investors might consider CSR investments negatively. The pressure to invest in CSR initiatives may be less for the financial sectors compared with others causing the probability of a lower CSR performance in general. The same is for the services sector, which do not directly affect the environment or society through pollution. Some customers reward the companies for supporting or investing in CSR projects as they mean it signals honesty and reliability. However, investors do not seem to

view it in the same manner. Investors might argue that the money they spend or invest into a venture should go towards earning them a return rather than being used to help the environment or society. The basic material sector is highly sensitive to the changes in the business cycle, as it consists of companies developing and processing raw materials. The decreased oil prices puts this sector under pressure, and therefore additional costs such as CSR investments that are not mandatory, might be perceived negatively by investors.

In summary, the null hypothesis: *Firm specific factors have no effect on firm value during CSR announcements,* cannot be rejected for the following independent variables: Size, P/B and P/E. Thus, they have no significant effect on CAR. Additionally, the null hypothesis: *US/Euro foreign exchange rate has no effect on firm value during CSR announcements,* cannot be rejected either, meaning that the US/Euro foreign exchange rate does not have an effect on the stock return of the company of interest. The same result also applies for the last null hypothesis: *Crude oil price has no effect on firm value during CSR announcements.* In other words, all of the null hypotheses in the cross-sectional analysis cannot be rejected.

There are several explanations of why we did not find any relationship of the different variables. The first explanation could be that a regression model is not the optimal method to gauge the relationship between CAR and the independent variables. The model might be too simple, thus certain factors are not visualized. The second explanation could be the length of our event window which might be too short and therefore make it difficult to observe the true effect of the CSR announcement as it might have a long-term effect on a company, whereas an effect might appear at a later period. Arx & Ziegler (2014) also states that the true effect of a CSR project may arise after a longer period of time. The third explanation is that there is an effect, but our study could not capture it.

6.3 Strengths and Weaknesses

The strengths of our analysis using an event study approach is that this methodology, as earlier mentioned, reflects an immediate stock reaction to the CSR announcements. The advantage of using a short-term perspective is that daily expected returns are close to zero, thus the abnormal returns are not largely interfered by the effects of expected returns (Fama, 1998). Furthermore, our thesis is strengthened by a detailed methodology section which

makes it possible for other researches to do the same study. Our data sample was custom-made, including only relevant and necessary information for the research problem. The calculations were conducted through Stata, which is a recognized statistical software. Our model also accounts for possible variables that could affect the cumulative average abnormal return during the event window. The findings in this study are also strengthened as it correspond to previous literature that got the same result (e.g Curran & Moran, 2007).

A challenge to our study is that there is a number of developing literature that suggest stock prices to adjust slowly to new information (market inefficiency): the consequences of an underreaction (short-term) of stock prices to news is simply that the news are gradually incorporated into stock prices, which can result in positive autocorrelations over these horizons (Bodie et al., 1998). This challenges the efficient markets theory as it suggest that in the variety of markets, investors have the opportunity to earn remarkable returns by advantaging from under-and overreaction without addressing additional risk. In order to get an overview of market inefficiency one would have to examine the stock returns over a long horizon. However, Fama (1998) explains these findings from the efficient market viewpoint. Although literatures suggest long-term return anomalies, they do not suggest the abandonment of the efficient market. Further, he argues anomalies to be chance results, which is consistent with the efficient market hypothesis: the chances of an overreaction are as common as the chances of an underreaction of stock prices to information. Dimson and Mussavian (1998) accentuate the importance of market efficiency which is demonstrated by the fact that profitable investment opportunities are still referred to as "anomalies". This framework is still widely used.

Another weakness of our study is the amount of observations. Our data sample consisted of 87 observations. A larger set of observations could have broadened the horizons and strengthened our study, thus increase trustworthiness. It might also increase the chance of getting significant results. As earlier mentioned 86 companies were omitted due to the chance of bias in our study. We could have included them, but chose an exclusion in order to get as reliable data as possible.

We are aware that a seven-days event window might be a little short for this kind of event. However, due to the reasons mentioned in section 3.1 and 3.1.1, we suggest that a short event window would give us the most accurate and valid data. The short event window is also in

line with earlier research. We also considered the risks of confounding effects to be too large in long event windows.

Furthermore, a challenge of event studies is the determination of the event date. Lack of information could occur, and people could have received information before the actual day of publication. Firms could for instance have mentioned future or past CSR investments in their annual or quarterly report, investors could therefore expect an upcoming CSR announcement during the year. Another example is lack of information from insiders, such as employees. In order to capture this potential incident, the event windows were set a few days prior to the event date.

7. Conclusion

The effects of CSR on a firm's financial performance have during the last decades received tremendous attention. However, the past research and findings are ambiguous and the final answer remains unclear. In this thesis, we contribute to the literature by studying the relation between CSR and financial performance. An event study approach was conducted to measure the effects of CSR announcements in the American market on firm value. A manually collected data sample of 87 companies and announcements was investigated during the time period of 2014-2016. Furthermore, we used several short-term event windows to capture the rapid reaction from the market. Abnormal returns were then calculated through the market model. Further, a cross-sectional analysis was conducted in order to detect potential variables that could affect the returns during the CSR announcement.

By reviewing our null hypothesis: *CSR announcements have no effect on firm value.* We find no significant effect between these variables. Thus, the null hypothesis cannot be rejected. This could indicate that investors do not value CSR, or that the absence of consensus among investors create opposite movements in stock returns, which will cause the overall effect to be evened out. This contradicted our expectations as we thought CSR announcements would contribute to an increase in firm value. From our experience, people nowadays pay more attention to ethics and the environment. Nevertheless, the findings suggest that investors neither reward nor punish such companies.

The result of our cross-sectional analysis viewed a significant negative relationship between CAR and the following sectors: financial, services and basic materials. Companies belonging in these sectors experience a decrease in CAR, which indicates a negative effect when these companies announce their CSR initiatives. Thus, shareholders investing in these sectors might either value or value CSR less than other sectors.

In today's society more individuals suffer from poverty, health issues, and the effects of climate change. Companies that invest in projects that address these issues might not only gain good publicity and reputation, but also contribute to creating a better environment. Being ethical has become an important topic which has evolved more within business (Jackson, 2011). Firms being ethical by investing in CSR might expect a positive reaction. Furthermore, CSR initiatives might also be supported by stakeholders with the same values. As earlier mentioned, CSR could lead to better task performance of employees, in addition to attracting

highly motivated employees which will also benefit the company. CSR initiatives might not immediately seem to result in any financial gain for the firms, but it might do so in the long run.

Limitations, Implications and Further Research

After the completion of our thesis we gained the knowledge that CSR initiatives do not have an effect on stock returns. Thus, there are many ways to measure the effects of CSR on stock returns. As discussed in section 2.2, studies have examined the effect e.g. through the inclusion and exclusion of a CSR index. To our knowledge however, no former studies have measured the effect of CSR initiative in general, that does not necessarily include the inclusion or exclusion in an index. Our study is novel as it has measured the announcement of *any* CSR investments.

We have several suggestions for further research. When writing this thesis the question of whether an announcement of the *completion* of CSR initiatives would affect stock returns stroke us. Some investors might value this more than the announcement of an upcoming CSR project. This is a topic that future research can study. Although we did not find CSR announcements to have an impact on stock returns by conducting an event study, using another approach might. It can also be valuable if further research explores this issue in other contexts, such as the European or the Asian Pacific market. Additionally, a comparison and examination of the performance of firms investing in CSR initiatives against firms not investing in CSR could be of interest. In order to get accurate data, we recommend researchers to compare firms within the same industry and with the same size. Investments in CRS might have significant effects on the first firm, whether positive or negative. Since our study did not capture several firm specific factors, we suggest further research to look into other variables. A measure of CSR expenditure to operating turnover could be of interest, as this could be further compared to the returns of the shareholders.

Our study is not without limitations. We tried our best to collect the most reliable data as possible excluding companies and factors that could cause bias, and regularly cross checking the dataset. An example is that we only included each company in our dataset once, although they had more announcements. This was to avoid overrepresentation. However, human errors could have occurred during the collection of the data sample as it was conducted manually.

Furthermore, there could have been a long-term effect of CSR that we were not able to capture by conducting an event study.

The results of CSR and its effect on firm value remain ambiguous, whereas further research is needed in this field as there is still more to discover. Our study has contributed with an understanding of why there might be no significant effect between the two components. CSR has become both a national and international trend where profitability factors might come into play, which makes it even more attractive for future research.

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Appendix

Appendix A: List of Firms in The Data Sample

Company Name	Event Date
The Travelers Companies	02.11.16
Cigna Foundation	02.09.16
Ameriprise Financial	02.08.16
United Health Foundation	02.03.16
Bank of America	02.01.16
Wal-Mart Stores, Inc	21.01.16
APS	25.01.16
Stubhub Foundation	20.01.16
YUM! Brands	21.12.15
KKR & CO. L.P	18.12.15
Lincoln Financial Group	12.11.15
Oshkosh Corporation	12.10.15
Hyatt Hotels Corporation	12.10.15
Groupon	12.01.15
Monsanto	12.01.15
Colgate-Palmolive	30.11.15
Hess Corporation	17.11.15
Praxair	16.11.15
The Dayton Power and Light Company	11.12.15
Brown-Forman Corporation	11.06.15
Dish Network	11.02.15
Washington Gas	27.10.15
Viacom, Inc	20.10.15
Sensient Technologies Corporation	15.10.15
American Water	14.10.15
First Solar	13.10.15
South State Bank	10.08.15
Harman	10.01.15
Fluor Corporation	22.09.15
AvalonBay Communities, Inc	21.09.15
Revlon	21.09.15
EQT Foundation	09.01.15
Humana, Inc	20.08.15
Molson Coors Brewing Company	17.08.15
PPG Industries, Inc	08.11.15
Trinseo	08.11.15
Owens Corning	16.07.15
Kosmos Energy	13.07.15
Adobe Systems, Inc	25.06.15
Iron Mountain	18.06.15
Xcel Energy	16.06.15

Capital One Financial Corporation	06.10.15
Symetra Financial Group	06.08.15
Qad, Inc	06.04.15
Fortune Brands Home & Security Inc	28.05.15
Sallie MAE	28.05.15
Archer Daniels Midland Company	27.05.15
Zendesk	14.05.15
State Street Corporation	05.12.15
Macy's	05.04.15
Gamestop Corp.	27.04.15
LifeLock	16.04.15
Baltimore Gas and Electric Company	13.04.15
Dr Pepper Snapple Group	03.10.15
Rockwell Automation, Inc	03.09.15
Celanese Corporation	17.02.15
Booz Allen Hamilton	22.01.15
Conagra Foods	20.01.15
AOL, Inc	15.12.14
The Aetna Foundation, Inc	12.10.14
Staples	25.11.14
USG Corporation	20.11.14
Chipotle Mexican Grill	17.11.14
Ecolab, Inc	11.05.14
Limoneira	21.10.14
Agco	30.09.14
Bristol-Myers Squibb Company	22.09.14
Pfizer, Inc	22.09.14
Nike	04.07.14
Dollar General Corporation	04.02.14
Exelis	26.03.14
Umpqua Bank	30.01.14
Northern Trust Corporation	03.08.16
Ply Gem Industries	15.11.16
PVH Corp.	20.10.16
Equity Residential	19.09.16
Welltower, Inc	14.09.16
Campbell Soup Company	09.08.16
VWR Foundation	31.08.16
Calgon Carbon Corporation	08.10.16
The Hershey Company	24.02.16
U.S. Bank	08.09.16
Colony Capital, Inc	13.07.16
Alibaba Group	07.08.16
Netscout Systems, Inc	21.06.16
Hanesbrands	03.11.16
Baxter International, Inc	14.04.16

Appendix B: The Gauss-Markov Assumptions

In order to test for multicollinearity, the variance inflation factor (VIF) and the correlation

matrix were computed:

Correlation Matrix

	Size	P/B	P/E	US/EUR	Oil	Financial	Consumer Goods	Healthcare	Services	Technology	Utilities	Industrial goods	Basic Materials
Size	1.00												
P/B	0.11	1.00											
P/E	-0.13	0.05	1.00										
US/EUR	0.01	-0.04	-0.01	1.00									
Oil	-0.08	-0.06	0.13	0.85***	1.00								
Financial	0.12	-0.24*	-0.12	-0.15	-0.20	1.00							
Consumer Goods	-0.01	0.26*	-0.03	0.06	0.07	-0.26*	1.00						
Healthcare	0.35***	-0.07	0.06	0.19	0.06	-0.14	-0.16	1.00					
Services	-0.05	0.09	0.19	0.20	0.17	-0.22*	-0.25*	-0.14	1.00				
Technology	-0.28*	0.02	0.05	-0.08	-0.01	-0.15	-0.17	-0.09	-0.15	1.00			
Utilities	0.026	-0.12	-0.06	-0.14	-0.10	-0.13	-0.15	-0.08	-0.12	-0.09	1.00		
Industrial Goods	-0.23*	-0.01	-0.03	-0.05	0.00	-0.13	-0.15	-0.08	-0.12	-0.09	-0.07	1.00	
Basic Materials	0.01	-0.01	-0.06	-0.08	-0.02	-0.16	-0.19	-0.10	-0.16	-0.11	-0.09	-0.09	1.00

* $p<0.05$, ** $p<0.01$, *** $p<0.001$

Correlation Matrix: Size is the logarithm of the market value for each firm and is measured in millions of U.S. dollars. P/B is the price-to-book ratio and compares a stock's market value to its book value. P/E is the price-to-earnings ratio and measures a firm's stock price to its per-share earnings. US/EUR is the foreign exchange rate of U.S. dollars to Euro (EUR). Oil represents the price of crude oil gathered from West Texas Intermediate measured in U.S. dollars. Financial, Consumer goods, Services, Technology, Utilities, Industrial goods and Basic materials are dummy variables equal to one if the firm belong to that sector, and otherwise zero. Financial represents the finance sector and includes firms providing financial services. Consumer goods reflect firms that are related to purchased items by consumers. Health care includes firms that has medical and/or healthcare products or services. Services denotes companies that deliver intangible goods: services. Technology is a sector which includes firms that are concerned with R&D of both services and goods that are technologically based. Utilities represent companies for utilities like gas and power. Industrial goods includes companies that produce goods that is further used in manufcaturing or/and onstruction. Basic materials is a sector of companies involved with the process or/and development of raw materials. The data of the independent variables are gathered from each firm's event date

The independent variables have a relatively low correlation except from oil price and the US/Euro foreign exchange rate, which has a correlation of 0.85. The rule of thumb states that the correlation should be less than 0.7. In order to investigate this manner, we computed the variance inflation factor (VIF).

Variance Inflation Factor

Variable	VIF	1/VIF
Size	1.39	0.72
P/B	1.22	0.82
P/E	1.21	0.83
US/EUR	4.65	0.22
Oil	4.47	0.22
Financial	3.16	0.32
Consumer Goods	3.79	0.26
Services	3.09	0.32
Technology	2.66	0.38
Utilities	2.05	0.49
Industrial Goods	2.32	0.43
Basic Materials	2.5	0.40
Mean VIF	2.71	

The Variance Inflation Factor for multicollinearity. Size is the logarithm of the market value for each firm and measures the size of the firm. P/B ratio (price-to-book ratio) compares a stock's market value to its book value. P/E ratio (price-to-earnings) ratio measures a firm's stock price to its per-share earnings. US/EUR is the foreign exchange rate and is measured in dollars. Oil Price represents the price of crude oil. Financial, Consumer Goods, Helath Care, Services, Technology, Utilities, Industrial goods and Basic Materials are dummy variables that get a value of 1 if the firm belongs to that sector, and 0 otherwise. Financial represents the finance sector and includes firms providing financial services. Consumer goods reflect firms that are related to purchased items by consumers. Health care includes firms that have medical and/or healthcare products or services. Services denote companies that deliver intangible goods: services. Technology is a sector which includes firms that are concerned with R&D of both services and goods that are technologically based. Utilities represent companies for utilities like gas and power. Industrial goods include companies that produce goods that is further used in manufcaturing or/and construction. Basic materials is a sector of companies involved with the process or/and development of raw materials. The data of the independent variables are gathered from each firm's event date.

As accentuated by Woolridge (2013) the value of VIF should be less than 10, which also correspond with our results. The mean VIF is 2.71, which means that there is no problematic correlation between the independent variables.

Furthermore, the Breusch-Pagan test detected heteroskedasticity in two of our regressions, model (2) and model (3).

Breusch-Pagan Test for Heteroskedasticity

Regression	Chi Squared	P-Value
Model (1)	1.97	0.16
Model (2)	5.03	0.02*
Model (3)	4.53	0.03*
Model (4)	2.18	0.14

*Breusch-Pagan test for heteroskedacticity: Model (1) represents CAR from the event window (-3,3), Model (2) is CAR from event window (-2,2), Model (3) is CAR from event window (-1,1) Model (4) is CAR from event window (0,1). *p<0.05, ** p<0.01, *** p<0.001*

Finally, we present the results of the Shapiro-Wilk test. The results of this test suggest that our sample is not normally distributed.

Shapiro-Wilk Test

Regression	Obs	W	V	Z	Prob>Z
Model (1)	87	0.95	3.70	2.88	0.00
Model (2)	87	0.96	2.80	2.27	0.01
Model (3)	87	0.98	1.63	1.08	0.14
Model (4)	87	0.97	2.00	1.52	0.06

*Shapiro-Wilk test for normality: Model (1) represents CAR from the event window (-3,3), Model (2) is CAR from event window (-2,2), Model (3) is CAR from event window (-1,1) Model (4) is CAR from event window (0,1). * p<0.05, ** p<0.01, *** p<0.001.*