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Financial Economics

Corporate Social Responsibility and the Equity Markets: A quantitative analysis

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ABSTRACT

The purpose of this thesis is to examine the relationship between Corporate Social Responsibility (CSR) disclosure and equity prices in the financial markets. An event study combined with a textual analysis is used to research this relationship. The thesis is based on the European market and the sample period is between 2018 and 2019. Insight is given into the immediate and short-term effects of CSR disclosure and the significant results suggest that we can conclude that there exists a relationship between CSR disclosure and equity market reactions. The results indicate both a negative effect on abnormal return but also a positive effect in terms of lower volatility.

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1. INTRODUCTION

In 2017 the European Union (EU) through Directive 2014/95/EU legislated about required Corporate Social Responsibility (CSR) reporting in the EU. These regulatory changes brought on the question: is CSR disclosure used by investors and if so, how is it interpreted? In this thesis, we are specifically looking at and evaluating the relationship between equity markets and company CSR disclosure. The thesis is an effort to examine how investors use CSR information and how it is expressed in the stock market.

CSR is an umbrella term that emphasizes the responsibility of the corporation regarding societal issues, such as gender equality, the environment, and poverty. A firm Practicing CSR is taking responsibility for society and tries to make sure that they make a positive contribution (Chen 2020). CSR is not a new concept but environmental and social issues have become increasingly important to almost all stakeholders in the corporate world, enhancing the importance of CSR work for firms across the globe (McPherson 2020). The increased awareness has led to policies about mandatory sustainability but until now mainly in individual countries. CSR reporting is, due to Directive 2014/95/EU, mandatory for all publicly traded companies and public-interest companies with more than 500 employees, within the European Union**.** The directive states that these companies have to include non-financial statements that give the reader an understanding of the company's performance, development, position, and the impact of its activity that relates to environmental, social, and employee matters, respect for human rights, anti-corruption and bribery matters. However, research on the capital market response to this type of reporting is limited and the subject is not as thoroughly examined as for example financial reporting.

The results of the research on the relationship between financial statements and stock returns suggest that financial reporting is essential. Capital markets have found that disclosures within the financial statements have a predictive value of firm performance and therefore the stock price (Mulyono & Khairurizka 2009). Non-financial statements in annual reports such as the president's letter and other management discussion and analysis (MD&A) with voluntary forecasts and predictions as well as other non-financial communication has also been shown to be useful (Li 2010). MD&A analysis shows that narratives are important for

actors in equity markets when valuing a firm. What is not determined is how CSR disclosure is used by market participants and how it affects a firm's perceived value.

The purpose of financial reports and official communication is also important to keep in mind. The annual report is a firm's main way of communicating with owners and other stakeholders. This communication is important to bridge the gap of information asymmetry between company insiders and outsiders. In this case, regulation is used to prevent informational abuse to protect outsiders from information omittance or distortion by company insiders, like the firm's management. Furthermore, regulation is used to enforce disclosure conformity to make said disclosure more readable, comprehensible, and comparable. In turn, harmonization of accounting practices are believed to bring transparency, accountability, and efficiency to financial markets (IFRS n.d.). When legislating regarding company communication it is therefore important to examine the results so that the regulation does not add noise and defeat its purpose. The EU has a more extensive directive regarding financial statements than CSR disclosure and the harmonization of accounting practices has been shown to lower the cost of capital and increase investors' predictability within the EU (Lee, Walker and Christensen, 2020). Because the EU used a directive instead of a regulation to drive change in the reporting standards of CSR disclosure the harmonization is lower than regular financial accounting. This could mean that investors might have difficulties interpreting the information and might question its reliability. Whether more or less regulation is needed is difficult to say but what is examined in this thesis is whether or not the stock market reacts to different types of CSR communication. There are admittedly significant other stakeholders in companies besides shareholders, however, their perspective will not be examined in this thesis.

The reporting firms are providing the markets with several different reports each year containing different forms of CSR communication, making it hard to analyze. This becomes a problematic feature, both for this thesis and the financial markets, due to that CSR communication is not consolidated into a single report. For example, there is the annual report, the corporate responsibility report, and the environment, social and governance report (ESG). Since the directive does not state how the CSR is supposed to be disclosed, it is up to every member state to either legislate or let the firm's practice CSR-reporting in the way they

see fit. This means that not all firms release a separate report, like a corporate responsibility report or ESG report, but instead disclose CSR in the annual report. In this thesis, we will, therefore, focus on the effects of the annual reports and the corporate responsibility reports to conclude whether equity markets react to the CSR disclosure included in these reports. In short, the annual report is mainly focused on financial performance, but since it is often a firm's main way of communication it also sheds light on CSR related issues. The corporate responsibility report is instead focused on specific firm CSR work. For instance, a report can describe the firm's work on gender equality or environmental work but this varies between companies and firms often focus on different areas in different years.

The purpose of this thesis is to examine whether there is a relationship between investor sentiment and CSR disclosure in both the corporate responsibility reports and annual reports. Previous research that exclusively examines the market reaction to the publication of CSR disclosure is harder to find. We found research similar to ours in a Japanese context, but the European market is yet to be examined. This study will be useful for both investors but also for political entities to gain an understanding of the relationship between CSR disclosure and the stock market.

To fulfill the outset purpose of the thesis we first examine if there are abnormal returns attributable to the release of the annual reports or the corporate responsibility reports. Through an event study methodology, we find that the market does not seem to react to corporate responsibility reports but that it does react to the annual reports. Secondly, we use textual analysis to examine if there is a relationship between the CSR related word usage in firms' annual reports and the firms' stock price. This is done through a series of regressions which to a large degree are based on a categorized word count of the annual reports to reveal CSR focus and CSR intensity. Through our methodology, we find that most CSR disclosure is connected with lower abnormal returns, however, it also seems to have a relationship with lower stock volatility across the board. The shown effects are quite minor but statistically significant.

2. THEORETICAL FRAMEWORK & LITERATURE REVIEW

The basis of event studies like the ones conducted in this thesis is the semi-strong form of market efficiency as suggested by the efficient market hypothesis. An event study examines the impact of an event on the financial markets to see if it has any value altering effects and the semi-strong form of market efficiency states that all publicly available information is incorporated into the stock price (Law 2016). Therefore, if an event has any value altering effects, these should be reflected in the stock price once the event is public. In our case, the examined events are the releases of the annual reports and the corporate responsibility reports and since these contain previously unknown information this new information should be incorporated into the stock price. The question is: do CSR disclosure in financial and CSR reports affect the value of the releasing firms?

2.1 THE PROFITABILITY OF CSR WORK

The fact that information becoming public could have an impact on the firms' stock price is one thing, but to also try and define whether this information is positive or negative from an investor's point of view is another. To investigate this, we reviewed prior research on effects of CSR-work on a firm's financial performance.

There has been a lot of research into finding the true effects of CSR on financial performance but the results vary due to differences in methodology and the measurement of corporate social performance (CSP) (Beurden & Gössling 2008). However, Beurden & Gössling (2008) conclude through their literature study that there is a significant positive relationship between CSP and corporate financial performance (CFP). If this was true then the stock markets would have a reaction and we would see companies that are reporting a lot or increasing their CSR efforts, to achieve this positive CFP Beurden and Gössling were describing and be valued accordingly.

Cavaco & Crifo (2014) found that the relationship between CSR and financial performance is dependent on synergistic effects and trade-offs between different CSR components, i.e. the way firms incorporate CSR is crucial. They conclude that a focus on human resources and business behavior has a synergistic effect on financial performance. However, environmental work could be substitutable input to financial performance and might lead to over-investment

if both are undertaken simultaneously. This suggests that CSR focus is important and that not all CSR work is the same. Therefore one has to consider not only the intensity of which CSR is practiced but also which CSR focus a firm has.

Epstein & Freedman (1994) found that shareholders in the majority demanded disclosure of firms' CSR-work and that shareholders ranked CSR-work related to reducing pollution and increasing product safety as the most important. The findings of Epstein & Freedman (1994) also support the idea of shareholders caring the most about CSR-activities that will reward the owners with a higher future profitability.

2.2 EQUITY MARKET REACTION

To understand how prices are set on the equity market, we depend on the theoretical framework provided by the Capital Asset Pricing Model (CAPM). The CAPM is a widely used theory in finance for pricing risky assets and calculating expected return given risk (Perold 2004). The research conducted on the financial market reactions to news and disclosure regarding CSR topics are many. A common event study methodology to examine whether the stock market cares for CSR-work is to use the inclusion or exclusion of companies in different "environmentally friendly" lists, for example, America's 100 best corporate citizens or FTSE4Good UK Index. Brammer, Brooks & Pavelin (2009) found small positive abnormal returns from the event of being included in America's 100 Best Corporate Citizens, but as Martin Curran & Moran (2007), the results were insignificant, suggesting that either the proxy used for CSR-work is flawed or that investors do not care for CSR-work in the short-run.

Flammer (2013) researched all publicly listed companies in the US that were covered by a positive or negative story in the Wall Street Journal in the sample period of 1980-2009 and found that shareholders care for the sustainable footprint and also argues that environmental CSR is a resource with decreasing marginal returns over time. News about sustainable actions was followed by a significant stock price increase, while news about unsustainable actions had the opposite effect. The results showing that environmental-work has decreasing marginal returns over time is something that could have effects on the data and the results of this thesis because it examines a much later period than Flammer did. This could mean that

the results will show that CSR disclosure has a small or no effect on the stock price today, but would have had a larger effect historically.

Nuzula & Kato (2011) researched partly the same event as this thesis, the publication of CSR reports, but in Japan instead of Europe. The research found no significant results regarding abnormal returns when examining the short event window of three days, but found small significant abnormal returns in the longer event window of 19 days. The research conducted by Nuzula & Kato (2011) is acting as a guide for the first part of our methodology, which will be described further.

As we mentioned in the introduction, some firms do not provide a separate report for CSR, the CSR communication is instead conducted through the annual report. Keeping in mind that this thesis's purpose is to analyze whether investors use CSR disclosure for decision making, we looked at previous research to understand how CSR disclosure can be extracted and measured through the annual report. Clarkson, et al. (2020) showed through their research that CSR performance can be rather accurately predicted by the number of words and sentences in the corporate responsibility report, with an accuracy of 81 %.

Since CSR-work is expected to be correlated with increased profitability, and shareholders both have knowledge and demand for disclosure of a firm's conducted CSR-work, the disclosure of information should logically have a positive effect on the stock price. Although previous research on the equity market reaction tells us that investors do not seem to value this information, at least not in the short term. Compared to the previous studies this thesis will examine not only the European market but it will also examine a different more recent time period. Additionally, the thesis evaluates different relationships between CSR reporting and stock market performance in a way that was yet to be explored.

2.3 HYPOTHESIS

Based on our literature study the following hypotheses were constructed to further examine the relationship between CSR disclosure and equity markets.

To determine how valuable it would be to analyze corporate responsibility reports we formulated hypothesis I to see if the stock market reacted to the reports at all. The null hypothesis predicts that the immediate and short-term effects of the publication of a corporate responsibility report will not affect the publishing firm's stock price.

H_1 = *The stock price for a firm will not change due to the release of a corporate sustainability report*

As with the corporate responsibility report, of interest is to examine if there is a market reaction to the annual report to determine whether the publication is worth researching further. The thesis null hypothesis II states the immediate and short-term effects of the publication of an annual report will not affect the publishing firm's stock price.

H_2 = *The stock price for a firm will not change due to the release of an annual report*

Since the stock market reaction to corporate responsibility reports was limited, which is later expanded upon, the thesis focuses on the publications of annual reports. The null hypothesis III tests if the area of which the CSR disclosure is focused on affects the firm stock price and states that the focus of CSR work communicated through the annual report will not have any immediate or short-term effect on a firm's stock price.

H_3 = *The stock price for a firm will not be affected by the CSR focus disclosed in the annual report*

Also of interest is if the amount of CSR disclosure influences the firm stock price. The amount is used to measure how intensely the firm focuses on CSR. The null hypothesis IV is formulated to see if the intensity of CSR disclosure in the annual report has any immediate or short-term effects on a firm stock price.

H_4 = *The stock price for a firm will not be affected by the CSR intensity disclosed in the annual report*

3. METHOD

To research whether CSR disclosure affects a company's stock price we use two different methods. First, an event study is carried out to examine whether the actual return differs from the expected return, in the chosen time intervals surrounding the release date of the given report, by using a sign test similar to the event study conducted by Nuzula & Kato (2011). Secondly, we apply a multivariate regression analysis to analyze whether focus or intensity of CSR disclosure, included in the annual reports, affects the equity markets.

3.1 THE EVENT STUDY

An event study is commonly used by researchers in the field of financial economics to find out how the equity market reacts to an event, such as the publication of a news article or press releases by firms. This method is built upon the semi-strong form of Efficient Market Theory that implies that all public information is incorporated into the stock price. In our case, the event is defined as the release of either the corporate responsibility report or the annual report. The event study is conducted to answer hypotheses I and II and to provide a foundation for the rest of the thesis.

Through our literature review, we found event studies using a variety of time intervals. For example, Lorraine, Collison & Power (2004) used a 21-day interval, including 10 days before, the day of, and 10 days after the event. Nuzula & Kato (2011) used two different time intervals to include both an immediate market reaction as well as a short term reaction, in their case the event windows were 3 days and 19 days. In our event studies, we use four time periods, firstly we examine the day before, the day after, and the day of the report and then also a 41-day interval (-10, 30). The event date is noted as day 0 and to both capture eventual leakage of information before the actual event, a period before day 0 is examined, and to capture the effects of more slowly incorporated information a period beyond day 0 is also examined. The reason for using different time intervals than the previously mentioned studies is that we believe that when accounting for the length of the reports and the density of information being disclosed, the market practitioners could require a longer time to price the disclosure provided. The longer time interval of 41 days proved to be a better model, exhibiting higher R-squared values in our initial testing, and is therefore included in this

thesis. In our initial testing, we tested several different time intervals and used metrics that determine the explainability of the model as guidance for what intervals to use for the thesis. Due to the importance of clarity all the time intervals that were examined are not included.

To capture the equity market's reaction to CSR disclosure we examine whether there is a difference between actual returns and expected returns. To do this we use a sign test to conclude whether the difference is statistically significant or not, showing if investors think that the release CSR-information is positive or negative to their valuation of the firm.

3.2 REGRESSION ANALYSIS

Due to the broad coverage of the annual report, covering areas such as yearly financial information, forecasts, and other MD&A, it is necessary for the regressions to quantify the amount of the report that is CSR related. To quantify the CSR disclosure we use a textual analysis approach, extracting and categorizing sustainability-related words in the annual reports. This is done with the help of a software called Atlas.ti and the adjusted sustainability dictionary created by Pencle & Mălăescu (2016) (see appendix 2). For each of the four categories in the dictionary the number of words is counted and used to form our "word count" variables. Through the word count, the fraction of the total report that focuses on the CSR categories is calculated creating a second variable of interest, "word fraction". The scaled word count and word fraction are then used as proxies for CSR disclosure intensity in our regression analysis which examines whether there are capital market effects explainable by the intensity of CSR disclosure.

As mentioned, there are four CSR word categories. The categories are as follows: Employee (EPM), Social & Community (SOC), Human Rights (HUM), and Environment (ENV). All with a word count and a word fraction, giving us a total of eight variables of interest so far. Further, a dummy is defined to reveal the CSR focus of a given company. Specifically, the dummy variable revealing focus is defined as being '1' for the relatively largest focus of the company and is always '1' for only a single category in both word count and word fraction. Explicitly the chosen category is the category achieving the highest value when dividing the category variable by the variable average in that category, for each company report. This focus test variable is used as a proxy for company CSR disclosure focus in the regressions, to

determine whether stock market effects can be explained by the focus of the CSR disclosure. Giving us a total of sixteen variables of interest so far.

Lastly, we also tested the change from one year to another where a scaled change of word count (defined as this year's word count minus last year's word count divided by last year's word count) and is used to determine if there is any causality between the CSR disclosure intensity and capital market effects. The total variables of interest used in the regressions thus add up to 20.

For our main analysis, multivariate OLS regressions are used to test the hypotheses. The models use the CSR categories as specified by our chosen dictionary (explained in the data section) in different ways as explanatory variables while stock market effects are the dependent variables. The control variables used in all regressions are the scaled measurements of the total words in the report, EBIT, total equity, total assets, market capitalization while also controlling for volatility, release year, and industry effects. The regressions shown in the empirical results are run on chosen capital market effects, specifically the stock volatility the day of the report as well as the abnormal return the day after the report and cumulative abnormal return in the time interval of 41 days (-10, 30) relative to the release of the report).

All regression models are a version of the following:

$$CME_{it} = \beta_0 + \beta_1 ENV_{di} + \beta_2 EMP_{di} + \beta_3 SOC_{di} + \beta_4 HUM_{di} + \beta_5 EBIT_{di} + \beta_6 EQUITY_{di} +$$
$$+ \beta_7 ASSETS_{di} + \beta_8 MARKET\ CAP_{di} + \beta_9 VOLATILITY_{di} + \beta_{10} TOTAL\ WORDS_{di} +$$
$$+ \beta_{11} CONTROL_{di} + U_{di}$$

With the following definitions, appropriately scaled for clarity:

CME = Capital Market Effect, either CAR, AR or VOLATILITY

$CAR = Cumulative\ Abnormal\ Return$

$AR = Abnormal\ Return$

$VOLATILITY = stock\ volatility$

$d = Date\ of\ the\ report$

t = What time interval analyzed

i = The firm analyzed

ENV, EMP, HUM, SOC = Focus variable, word count, word fraction or the year to year change in word count or fraction, related to Environment, Employee, Human rights and Social & community respectively

TOTAL WORDS = Total number of words in the report or the year to year change in the total number of words in the report

EBIT = Earnings before interest and tax

ASSETS = Total assets

EQUITY = Total equity

MARKET CAP = Market capitalization

CONTROL = The Model is also controlling for year and industry

3.3 DEPENDENT VARIABLES

The dependent variables are the abnormal return and cumulative abnormal return (CAR) as well as volatility. The abnormal return is the actual return minus the expected return on a single day, while CAR is the sum of abnormal return in a time interval (more precise equations are presented and explained below). CAR is commonly used in event studies and research to determine how the equity markets respond to information (Lorraine, Collison & Power, 2004; Brammer, Brooks & Pavelin, 2009; Martin Curran & Moran, 2007; Flammer, 2013). The CAR shows how the return deviates from the expected return in an interval and violates the CAPM. Volatility is used both as a control variable and as a dependent variable (not at the same time for obvious reasons) and is calculated through taking the sample standard deviation of the daily data for the two most recent years (504 trading days) to the day of the report and annualizing it through multiplying it with the square root of 252.

To calculate the CAR for each company, we relied on previous research by Curran & Moran (2007) and Nuzula & Kato (2011) who used a CAR calculation based on the market model. First, we calculate the actual return from a firm's historical share price through equation 1:

$$R_{jt} = LN(\frac{P_{jt}}{P_{jt-1}}) \quad (1)$$

Where R_{jt} is the actual return for firm j on the day t and P_{jt} is the price for firm j on the day. Then we calculate the expected return using the market model, equation 2:

$$E(R_{jt}) = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \quad (2)$$

Where α_j is the intercept for firm j and ε_{jt} is the error term for firm j on the day t, where α_j is assumed to be close to zero and ε_{jt} assumed to be zero. The R_{mt} term is the market return on day t. β_j measures the sensitivity of market risk for firm j. In turn, β was calculated using an equal-weighted index of the company sample. The reason for not using the STOXX 600 index is that many of the companies are not trading on all the days that the index is open and vice versa. Since we are using daily data we decided it is satisfactory to make an index and calculate β against it since an index is not specified in the capital asset pricing model. We used the following formula, equation 3, when calculating β:

$$\beta_j = \frac{Covariance(R_j, R_{mt})}{Variance(R_j)} \quad (3)$$

We calculate the abnormal return through equation 4:

$$AR_{jt} = R_{jt} - E(R_{jt}) \quad (4)$$

And CAR through equation 5:

$$CAR_j = \sum_{t-a}^{t+b} AR_{jt} \quad (5)$$

Where $t - a$ is the start for the time interval and $t + b$ is the end.

3.4 TEST VARIABLES

The first four variables of interest are the word count for each category which are calculated by adding the occurrence of each word in each category together. The second four are the fraction which is taking the word count and dividing it by the total words found in the report. Additionally, eight variables are included that are dummies based on the previously mentioned variables respectively. The dummies are defined as the relatively highest variable for each company. It takes the value of the variable, divides it by the average value, and then finds which of these values is highest as compared to the average for all the categories for a company, leaving zeros in all but one category. The last four variables of interest are the percentage word count change from one year to another, giving us as mentioned a total of 20 variables of interest.

3.5 CONTROL VARIABLES

Multiple control variables are used in the regressions, such as EBIT, total assets, total equity which all are taken from a database and divided by one million (to make the regression results clearer). Market capitalization is calculated through the number of shares in a company multiplied by the share price and then also divided by one million. The year is simply a variable with 1 representing the release year 2018 and 2 representing the release year 2019. The total words are calculated by adding up the total words recognized by the program Atlas.ti, with exceptions for the default stop list, and then divided by a million. The industry is also controlled for, by creating a dummy for each of the 55 industries.

3.6 HYPOTHESIS TESTING

Testing our hypothesis we rely on two methods. Our first two hypotheses are tested through a two-sided sign test and the second two through regressions. These methods produce statistics with which you can either accept or reject the null hypothesis.

3.6.1 SIGN TEST

First, to determine if the stock return is positive or negative in relation to the report the average is taken. However, this does not say very much about the reliability of the result. To ascertain the reliability of the results a two-sided sign test is used which produces a

probability, a P-value, which is used to see if the result is statistically different from a random input. A low P-value signifies an unlikely result and a high data reliability.

3.6.2 REGRESSION TEST VARIABLES

A regression produces a number of statistics which are of interest when trying to evaluate an hypothesis. The R-squared is used to see how much of the dependent variable is explained by the models in the given test. The R-squared is a statistic that quantifies how much of the model that can be explained by the variables of interest and the control variables in the regressions. Since the R-squared can be very high through just adding more variables the Adjusted R-squared is included, which penalizes the statistic for including extra variables with little explanatory power. R-squared and adjusted R-squared are provided by StataSE and not manually calculated.

The F-test is testing the entire model to see if the model collectively has predictive value. Put in another way the resulting probability value shown in the Empirical Results section shows how likely it is that the result is random. The F-test is used to assess the aggregate quality of the inputs to the regressions and determines if the results are different from that of a normal distribution. The F-test is another measurement of the model quality.

A T-test is used to determine the statistical significance of the variables of interest and their coefficients in the regressions. This test has a lot in common with the F-test but is based on another distribution, suitable for determining likelihood if a single variable differs from a normal distribution. In the regression tables these T-test probabilities are signified by asterisks and defined below the table.

4. DATA

4.1 THE DATA COLLECTION PROCESS

The majority of our data is gathered from Bloomberg and includes financial reports as well as specific company information for each stock. The biggest portion of data is the financial reports which were downloaded for each stock in the STOXX 600 index. All reports provided in English released in 2018, and 2019, which were tagged as an annual report or corporate

responsibility report are included in the raw sample. All the reports were also appropriately named with a ticker and a filing date which were used for the rest of the study. The specific stock information gathered through Bloomberg is the Last Price, which is the closing price for a certain stock on a specific day. The specific company financial information gathered through Bloomberg were total equity, total assets, Earnings Before Interest and Taxes (EBIT), and current shares outstanding. In addition to Bloomberg, we also used the stock function in excel to easily access an industry classification for each company. All the financial statement information is in millions of euros, converted by Bloomberg.

4.2 THE ORIGIN OF THE WORDLIST

We use the CSR dictionary that was constructed by Pencle & Mălăescu (2016), which is freely downloadable from **https://provalisresearch.com/Download/CSR.zip**. We decided upon the dictionary since it was constructed in a way that suits the purpose of this thesis and thoroughly reviewed by scholars with prior research done in the field of CSR reporting. The dictionary had to be modified through the removal of open compound words and the subsequent duplicates. Left is a total of 1,428 words, structured in four categories: Employee, Environment, Human Rights, and Social & Community (see appendix 2).

4.3 CLEANING THE DATA

From screening the collected reports we discovered that Bloomberg often had multiple copies of virtually the same report and many press releases were marked as annual reports. Companies file several editions of their reports with what we assume are corrections or small alterations. Since the goal is to determine if CSR disclosure has an effect on equity markets the reports had to be reduced to a single annual report for each company at any given year. To remove the noise we manually cleaned the data.

To remove press releases, larger reports were chosen over smaller reports and to remove refilings with minor changes, older reports were chosen rather over newer versions. Several reports were unreadable by the analysis software, often being from non-digital origin like scanned paper documents, these filings had to be removed as well. Lastly, some companies had an annual report for 2019 but not for 2018 or vice versa and were removed from the sample to be able to analyze the year-to-year effects. We decided against finding the missing

reports elsewhere since it was still problematic to find the publishing date. This process left us with 497 companies in the sample and a total of 994 reports. Because of the manual cleaning process, we decided against winsorizing the data since it had been examined thoroughly and outliers had already been removed. If we were to use the raw sample winsorizing would have made more sense. Looking at descriptive statistics in the next section also shows the min and max values are not alarmingly high or low. We also reasoned that the manual cleaning of the data removed more data than winsorizing would and additional exclusion could lower the sample quality.

The software Atlas.ti included a "stop list" that was automatically applied and excluded words such as "about", "it" and "because" (see appendix 1). These words were not included in the dictionary and were excluded from the total word count of the report. The economic impact of the usage of these words could be thought to have non-causal relationships with the stock return at most and will be considered unimportant in this thesis.

4.4 DESCRIPTIVE STATISTICS & PAIRWISE CORRELATION

The following tables provide information regarding our dataset with regards to the dependent variables, variables of interest, and control variables. With table clarity and readability in mind, some of the variables of interest were excluded from the pairwise correlation matrix, specifically those related to year change and focus.

Table 1 shows the descriptive statistics for the dependent variables, variables of interest, and control variables, stating the mean, standard deviation, minimum and maximum values in our dataset for each variable. The word fraction focus for each category and word count focus for each category are both dummy variables, which is why the table presents a maximum value of one and a minimum value of 0, when examining these two variables the mean might be of more interest. Our assumption was that these groups would change significantly between years, this was not the case. One could assume that most companies care about the same area while other areas go completely ignored. This was not the case. As shown in the table on the next page, there is certainly a skew but to us the similarities between the categories was surprising. We are unsure if this is due to the dictionary not being mutually exclusive or if this is due to a general sustainability interest of firms.

Table 1 - Descriptive statistics

Dependent variables	Observations	Mean	Std. Dev.	Min	Max
Abnormal return the day after the report	740	-.000084	.0027	-.016	.016
CAR for the 41-day interval	994	.00074	.012	-.065	.082
Word fraction for each category (scaled)	**Observations**	**Mean**	**Std. Dev.**	**Min**	**Max**
Social & Community	994	.0028	.00062	.00026	.0053
Employee	994	.0032	.00065	.00017	.0052
Human Rights	994	.0023	.00046	.00014	.0038
Environment	994	.0027	.00066	.00015	.0056
Total word count for each category (thousands)	**Observations**	**Mean**	**Std. Dev.**	**Min**	**Max**
Social & Community	994	3.38	2.076	.094	13.9
Employee	994	3.88	2.293	.082	14.1
Human Rights	994	2.77	1.674	.056	10.2
Environment	994	3.19	1.964	.109	18.4
Word fraction focus for each category (scaled)	**Observations**	**Mean**	**Std. Dev.**	**Min**	**Max**
Social & Community	994	0.21	0.41	0	1
Employee	994	0.18	0.39	0	1
Human Rights	994	0.29	0.45	0	1
Environment	994	0.32	0.47	0	1
Word count focus for each category (scaled)	**Observations**	**Mean**	**Std. Dev.**	**Min**	**Max**
Social & Community	994	0.19	0.39	0	1
Employee	994	0.21	0.40	0	1
Human Rights	994	0.26	0.44	0	1
Environment	994	0.34	0.47	0	1
Year fraction change for each category (scaled)	**Observations**	**Mean**	**Std. Dev.**	**Min**	**Max**
Social & Community	496	0.011	0.095	-0.093	1.02
Employee	496	0.023	0.161	-0.094	1.80
Human Rights	496	0.012	0.120	-0.092	1.46
Environment	496	0.021	0.154	-0.092	1.67
Control variables	**Observations**	**Mean**	**Std. Dev.**	**Min**	**Max**
Total words (Million)	994	0.11802	0.06633	0.0033	0.5746
EBIT (Trillion)	994	0.00045	0.00010	-0.0045	0.0098
Total Assets (Trillion)	994	0.07791	0.23334	1.0e-06	2.2338
Equity (Trillion)	994	0.01056	0.01820	-0.0011	0.1696
Market Capitalization (Trillion)	978	0.00857	0.01925	1.1e-07	0.2040
Volatility	970	0.24475	0.08187	0.1114	0.8227

Table 2 shows the pairwise correlation matrix with the correlation between the dependent variables, some variables of interest, and control variables. Each variable has an assigned number that can be viewed on the left-hand side of the matrix which corresponds to the same number in the first row of the matrix. As expected the word count has a high correlation but

also shown is that category fraction also has a high correlation which might not be as expected. Firms that report on one sustainability category also seem to a large degree report on the other categories as well, however, the effect can also be explained by the fact that the words in the categories are not mutually exclusive. One word could be counted and included in multiple categories.

Table 2-Pairwise Correlations

		1	2	3	4	5	6	7
1	Abnormal return the day after the report	1.000						
2	CAR 41-day interval	0.137*	1.000					
3	Social fraction	-0.069	-0.073*	1.000				
4	Employee fraction	-0.065	-0.054	0.827*	1.000			
5	Human fraction	-0.059	-0.068*	0.820*	0.877*	1.000		
6	Environ fraction	-0.069	-0.022	0.735*	0.598*	0.556*	1.0000	
7	Social word count	0.015	-0.066*	0.483*	0.367*	0.437*	0.3037*	1.0000
8	Employee word count	0.019	-0.070*	0.413*	0.412*	0.440*	0.2420*	0.9745*
9	Human word count	0.020	-0.069*	0.406*	0.361*	0.466*	0.2304*	0.9787*
10	Environ word count	0.014	-0.049	0.432*	0.319*	0.378*	0.4456*	0.9507*
11	Total words	0.051	-0.060	0.083*	0.012	0.0875*	-0.0188	0.8701*
12	EBIT	0.070	0.014	0.058	-0.087*	0.0333	0.0251	0.1950*
13	Total Assets	0.020	-0.085*	-0.093*	-0.031	-0.0479	-0.1681*	0.4071*
14	Equity	0.057	-0.064*	-0.049	-0.088*	-0.0544	-0.0819*	0.4520*
15	Market	0.046	-0.047	0.045	-0.064*	0.0400	-0.0205	0.1875*
16	Volatility	-0.038	-0.199*	-0.067*	-0.017	-0.0442	-0.0356	-0.1106*

		8	9	10	11	12	13	14
8	Employee word count	1.000						
9	Human Word Count	0.985*	1.000					
10	Environ Word Count	0.921*	0.925*	1.000				
11	Total words	0.878*	0.885*	0.830*	1.000			
12	EBIT	0.141*	0.181*	0.189*	0.174*	1.000		
13	Total Assets	0.476*	0.451*	0.340*	0.559*	0.003	1.000	
14	Equity	0.466*	0.466*	0.422*	0.566*	0.330*	0.778*	10000
15	Market	0.153*	0.186*	0.150*	0.213*	0.334*	0.277*	0.456*
16	Volatility	-0.096*	-0.102*	-0.098*	-0.100*	-0.120*	-0.090*	-0.168*

		15	16
15	Market	1.000	
16	Volatility	-0.255*	1.000

*p<0.05

5. EMPIRICAL RESULTS

This section shows the results for the hypotheses. Each table is preceded by a short explanation and interpretation of the data.

5.1 SIGN TEST RESULT - HYPOTHESIS I & II

Table 3 is the compiled results of the two-sided sign test conducted on the abnormal return of the time intervals around the release date of the corporate responsibility report. When looking at the number of observations in the Day -1 and Day 1 time periods these differ greatly. This difference stems from weekends. When a report is published on a Friday, markets are closed the day after (Saturday) and therefore there is no price data for those companies and the same problem occurs in reverse when looking at Monday releases.

Focusing on the results, the row of P-values shows that none of the time intervals seem to have a statistically significant abnormal return. The results of table 3 do therefore not allow us to reject the null hypothesis of hypothesis I, which states that the immediate and short-term effects of the publication of a corporate responsibility report will not have any effects on the publishing firm's stock price.

Table 3 -CR reports

	Day -1	**Day**	**Day 1**	**41 Days**
Mean AR	0.00051	-0.00017	0.00090	0.02825
P-value	0.810	0.378	1.000	0.931
% AR-positive	49.3	48.0	49.90	56.20
Average CAR	0.00051	-0.00016	0.00090	0.0079
Number of reports	431	512	407	522

Table 4 presents a similar two-sided sign test of the abnormal return of the time intervals related to the release of the annual reports. Here we find statistical significance but only on the release day of the annual report, noticeably the column with the highest average abnormal return. Again, the number of observations is affected by the weekends and differs therefore between the tests. Noticeably there is an observation missing, caused by a change of ticker in one of the companies, dropping it from the test. Table 4 allows us to reject the null hypothesis for hypothesis II, which states that the immediate and short-term effects of the publication of an annual report will not change the publishing firm's stock price.

Table 4 - Annual reports

	Day -1	Day	Day 1	41 Days
Mean AR	-0.000794	0.002013	-0.000074	0,000776
P-value	0.065	0.019	0.091	0.849
% AR-positive	46.74	46.21	53.16	62.49
Average CAR	-0.000794	0.002013	-0.000074	0.030583
Observations	828	976	743	997

5.2 REGRESSION RESULTS - HYPOTHESES III & IV

The following tables all contain multiple regression results with one regression for each column. All regressions in a column are for a single period. The difference between the regressions is that the first regression to the left cross controls for all variables while the rest of the regressions only use a single variable of interest. Word category count is as mentioned on thousands of words while word category fraction is on a tenth of a fraction. If any of the control variables are missing the observation is dropped from the sample, an example of this is if a firm is not traded during the regressions period the price data is missing.

5.3 MULTIVARIATE REGRESSION MODEL

Table 5, displays the results from regressions using word fractions as the variables of interest on the CAR for the 41-day interval. The table consists of five different regressions, one where all variables are included in the regression and four where the variable of interest is run separately. The only variable of interest that shows significant results at $p<0,05$ or lower is Social & Community, telling us that when more information about this category is disclosed in the annual report it hurts the CAR in the 41-day interval. When looking at the cross controlled regression the result for Social & Community has an even higher statistical significance and the coefficient is even more negative. Noticeably all the other categories have negative coefficients even though no statistical significance is found. Table 5 supports us in rejecting the null hypothesis of Hypothesis III, which states that the focus of CSR

disclosed through the annual report will not have any immediate or short-term effect on a firm's stock price.

Table 5 - Regression results

	Regressing word fraction on the CAR of the 41-day interval (-10,30).				
Social & Community	-0.4562***	-0.1635**			
	(0.1574)	(0.0677)			
Employee	0.1226		-0.0914		
	(0.1651)		(0.0639)		
Human rights	0.0645			-0.1309	
	(0.2053)			(0.0895)	
Environment	0.1874*				-0.0393
	(0.1031)				(0.0682)
Total Words	-0.0065	-0.0083	-0.0109	-0.0099	-0.0111
	(0.0079)	(0.0077)	(0.0076)	(0.0077)	(0.0077)
EBIT	0.1534	0.0496	0.0137	0.0633	0.0403
	(0.4953)	(0.4886)	(0.4904)	(0.4896)	(0.4906)
Total Assets	-0.0026	-0.0027	-0.0023	-0.0025	-0.0026
	(0.0033)	(0.0033)	(0.0033)	(0.0033)	(0.0033)
Total Equity	0.0047	0.0057	0.0081	0.0072	0.0119
	(0.0462)	(0.0462)	(0.0463)	(0.0464)	(0.0463)
Stock Volatility	-0.0281***	-0.0282***	-0.0275***	-0.0276***	-0.0271***
	(0.0051)	(0.0051)	(0.0051)	(0.0051)	(0.0051)
Market Capitalization	-0.0354	-0.0394	-0.0420	-0.0414	-0.0416
	(0.0270)	(0.0269)	(0.0270)	(0.0270)	(0.0270)
Constant	0.0180**	0.0192**	0.0162*	0.0161*	0.0135
	(0.0090)	(0.0090)	(0.0090)	(0.0089)	(0.0088)
Observations	990	990	990	990	990
R-squared	0.150	0.146	0.142	0.142	0.141
Adjusted R-squared	0.0927	0.0907	0.0870	0.0871	0.0853
F-test	7.82e-10	8.70e-10	2.89e-09	2.81e-09	4.96e-09
Controlling for industry	Yes	Yes	Yes	Yes	Yes
Controlling for year	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6, shows results from the regressions on abnormal returns of the day after the release of the report, using the word fraction of each category as the variables of interest. The table consists of five different regressions, again one where all variables are included and four where the variable of interest is run separately. The first regression shows that the market has a hard time differentiating between the categories and shows no statistical significance, however, the rest of the regressions show statistically significant results. In the regressions where the variables of interest are run separately the categories Social & Community and

Environment are significant at p<0.05 and for the Employee and Human rights categories we find p<0.1. All showing a negative relationship to abnormal return for the period. With that said the low Adjusted R-squared and the F-test just barely under p<0.1 suggests that the model is not very good. Table 6 only mildly supports us in rejecting the null hypothesis of Hypothesis IV, which states that the intensity of CSR disclosed through the annual report will not have any immediate or short-term effect on a firm's stock price.

Table 6 - Regression results

	Regressing word fraction on the abnormal return of the day after the release of the report				
Social & Community	-0.0072	-0.0383**			
	(0.0421)	(0.0184)			
Employee	-0.0014		-0.0329*		
	(0.0442)		(0.0174)		
Human rights	-0.0103			-0.0444*	
	(0.0556)			(0.0247)	
Environment	-0.0320				-0.0427**
	(0.0274)				(0.0184)
Total Words	0.0046**	0.0046**	0.0040*	0.0043**	0.0044**
	(0.0023)	(0.0022)	(0.0021)	(0.0022)	(0.0022)
EBIT	0.1165	0.1301	0.1176	0.1354	0.1140
	(0.1308)	(0.1284)	(0.1290)	(0.1284)	(0.1287)
Total Assets	-0.0008	-0.0007	-0.0007	-0.0006	-0.0009
	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0010)
Total Equity	0.0029	0.0022	0.0025	0.0015	0.0038
	(0.0130)	(0.0129)	(0.0129)	(0.0130)	(0.0129)
Stock Volatility	-0.0013	-0.0013	-0.0012	-0.0012	-0.0012
	(0.0014)	(0.0014)	(0.0014)	(0.0014)	(0.0014)
Market Capitalization	0.0026	0.0028	0.0022	0.0024	0.0024
	(0.0069)	(0.0069)	(0.0069)	(0.0069)	(0.0069)
Constant	-0.0011	-0.0014	-0.0017	-0.0016	-0.0013
	(0.0022)	(0.0022)	(0.0022)	(0.0022)	(0.0022)
Observations	737	737	737	737	737
R-squared	0.105	0.103	0.102	0.102	0.105
Adjusted R-squared	0.0228	0.0251	0.0240	0.0235	0.0266
F-test	0.0809	0.0593	0.0667	0.0703	0.0501
Controlling for industry	Yes	Yes	Yes	Yes	Yes
Controlling for year	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7 shows the results from regressions run on the abnormal return, using the change in the word count for each category between 2018 to 2019 as the variables of interests. Here we seem to have found a causal relationship between an increase of CSR disclosure intensity and

negative abnormal return for all categories with a statistical significance of $p<0.05$ in all but the Human rights category where it was found at $p<0.1$. Regression on the interval of 41 days was also run but showed no significant results. Again the adjusted R-squared is very low and the F-test does not reach $p<0.1$. Table 7 supports us in rejecting the null hypothesis of Hypothesis IV, which states that the intensity of CSR disclosed through the annual report will not have any immediate or short-term effect on a firm's stock price.

Table 7 - -Regression results

	Regressing the word count compared to the previous year on the abnormal return the day after the release of the report				
Social & Community	-0.0052	-0.0028**			
	(0.0071)	(0.0013)			
Employee	-0.0028		-0.0016**		
	(0.0062)		(0.0008)		
Human rights	0.0041			-0.0021*	
	(0.0065)			(0.0011)	
Environment	0.0014				-0.0016**
	(0.0061)				(0.0008)
Total Words	0.0015	0.0027*	0.0022	0.0028*	0.0020
	(0.0034)	(0.0015)	(0.0013)	(0.0017)	(0.0013)
EBIT	0.1287	0.1278	0.1281	0.1281	0.1293
	(0.1368)	(0.1362)	(0.1363)	(0.1364)	(0.1363)
Total Assets	-0.0002	-0.0001	-0.0001	-0.0001	-0.0001
	(0.0011)	(0.0010)	(0.0010)	(0.0010)	(0.0010)
Total Equity	-0.0032	-0.0022	-0.0024	-0.0020	-0.0022
	(0.0153)	(0.0152)	(0.0152)	(0.0152)	(0.0152)
Stock Volatility	-0.0006	-0.0005	-0.0005	-0.0005	-0.0005
	(0.0015)	(0.0015)	(0.0015)	(0.0015)	(0.0015)
Market Capitalization	0.0061	0.0060	0.0061	0.0060	0.0060
	(0.0074)	(0.0074)	(0.0074)	(0.0074)	(0.0074)
Constant	-0.0015	-0.0016	-0.0016	-0.0016	-0.0016
	(0.0024)	(0.0024)	(0.0024)	(0.0024)	(0.0024)
Observations	375	375	375	375	375
R-squared	0.188	0.186	0.185	0.183	0.184
Adjusted R-squared	0.0292	0.0363	0.0353	0.0333	0.0345
F-test	0.180	0.125	0.132	0.144	0.137
Controlling for industry	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

5.4 COMPANY FOCUS DUMMIES

In the regressions on table 8, it is shown that when looking at the highest CSR disclosure focus of each firm there is a significant difference between the categories. Namely that all categories seem to have a higher CAR than Social & Community in the 41-day interval. When regressing on the categories separately, only Social & Community is statistically

significant, supporting the results of the combined regression. Additionally, an Adjusted R-squared reaching for 0.1 and an F-test approaching 0 gives additional weight to the result. Table 8 supports us in rejecting the null hypothesis of Hypothesis III, which states that the focus of CSR disclosed through the annual report will not have any immediate or short-term effect on a firm's stock price.

Table 8 - Regression results

	Regressing the word fraction focus variable on the CAR of the 41-day interval (-10,30 days).				
Social & Community	*Omitted*	-0.0027**			
		(0.0011)			
Employee	0.0032**		0.0011		
	(0.0014)		(0.0011)		
Human rights	0.0022*			-0.0000	
	(0.0012)			(0.0009)	
Environment	0.0030**				0.0012
	(0.0012)				(0.0009)
Total Words	-0.0044	-0.0047	-0.0072	-0.0082	-0.0080
	(0.0077)	(0.0077)	(0.0076)	(0.0076)	(0.0076)
EBIT	-0.3046	-0.3442	-0.3819	-0.4017	-0.3523
	(0.5287)	(0.5263)	(0.5278)	(0.5290)	(0.5286)
Total Assets	-0.0024	-0.0024	-0.0022	-0.0018	-0.0016
	(0.0033)	(0.0033)	(0.0033)	(0.0033)	(0.0033)
Total Equity	-0.0462	-0.0447	-0.0452	-0.0442	-0.0453
	(0.0505)	(0.0504)	(0.0506)	(0.0506)	(0.0505)
Stock Volatility	-0.0320***	-0.0321***	-0.0311***	-0.0311***	-0.0314***
	(0.0056)	(0.0056)	(0.0056)	(0.0056)	(0.0056)
Market Capitalization	0.0369	0.0372	0.0352	0.0343	0.0336
	(0.0271)	(0.0271)	(0.0271)	(0.0272)	(0.0271)
Constant	0.0143*	0.0170**	0.0144*	0.0144*	0.0144*
	(0.0085)	(0.0085)	(0.0085)	(0.0085)	(0.0085)
Observations	990	990	990	990	990
R-squared	0.153	0.152	0.147	0.146	0.148
Adjusted R-squared	0.0964	0.0975	0.0921	0.0911	0.0928
F-test	1.92e-10	8.78e-11	5.35e-10	7.60e-10	4.33e-10
Controlling for industry	Yes	Yes	Yes	Yes	Yes
Controlling for year	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.5 REGRESSIONS ON VOLATILITY

Table 9 displays the regressions run on volatility when using word category counts as variables of interest, including all other control variables. From the first regressions on the left, we see that there does not seem to be a difference between categories when looking at volatility but in the following regressions, we see that there is a negative relationship between

all categories of CSR disclosure and volatility significant at the at p<0.05 or lower. Furthermore, the models have an acceptable adjusted R-squared and an F-test firmly at 0. Table 9 supports us in rejecting the null hypothesis of Hypothesis IV, which states that the intensity of CSR disclosed through the annual report will not have any immediate or short-term effect on a firm's stock price.

Table 9 - Regression results

	Regressing the word category counts on the volatility the day of the report release.				
Social & Community	-0.0083	-0.0071***			
	(0.0085)	(0.0026)			
Employee	0.0108		-0.0053**		
	(0.0080)		(0.0023)		
Human rights	-0.0118			-0.0088***	
	(0.0108)			(0.0033)	
Environment	-0.0016				-0.0064**
	(0.0049)				(0.0026)
EBIT	-2.1981	-2.7586	-2.9974	-2.6153	-3.0569
	(3.1953)	(3.1562)	(3.1601)	(3.1585)	(3.1585)
Total Assets	0.0254	0.0317	0.0369*	0.0349	0.0271
	(0.0224)	(0.0214)	(0.0214)	(0.0213)	(0.0216)
Total Equity	-0.7616**	-0.7766***	-0.7945***	-0.8035***	-0.7307**
	(0.3004)	(0.2971)	(0.2977)	(0.2975)	(0.2976)
Market Capitalization	-0.2451	-0.2608	-0.2785	-0.2708	-0.2801
	(0.1754)	(0.1738)	(0.1741)	(0.1738)	(0.1739)
Constant	0.0830	0.0858	0.0805	0.0799	0.0789
	(0.0554)	(0.0551)	(0.0551)	(0.0550)	(0.0550)
Observations	990	990	990	990	990
R-squared	0.312	0.310	0.308	0.310	0.309
Adjusted R-squared	0.2658	0.2666	0.2646	0.2662	0.2655
F-test	0	0	0	0	0
Controlling for industry	Yes	Yes	Yes	Yes	Yes
Controlling for year	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In the last table, Table 10, the results again show a difference between Social & Community and the other categories but now on volatility. When running together, the volatility of all other categories is significantly different from the Social & Community category but when to run separately neither category focus shows any statistically significant effect, even though they all have positive coefficients. Again the R-squared of the models are acceptable and have an F-test at 0. Table 10 supports us in rejecting the null hypothesis of Hypothesis III, which states that the focus of CSR disclosed through the annual report will not have any immediate or short-term effect on a firm's stock price.

Table 10 - Regression results

	Regressing the word fraction focus on volatility on the day of the report release.				
Social & Community		-0.0144**			
		(0.0060)			
Employee	0.0137*		0.0027		
	(0.0080)		(0.0065)		
Human rights	0.0126*			0.0019	
	(0.0069)			(0.0053)	
Environment	0.0166**				0.0078
	(0.0070)				(0.0054)
Total Words	-0.0079	-0.0077	-0.0243	-0.0263	-0.0242
	(0.0450)	(0.0448)	(0.0446)	(0.0442)	(0.0442)
EBIT	2.4739	2.3405	2.1118	2.0157	2.3682
	(3.0901)	(3.0792)	(3.0876)	(3.0912)	(3.0899)
Total Assets	0.0145	0.0139	0.0169	0.0176	0.0187
	(0.0195)	(0.0194)	(0.0195)	(0.0194)	(0.0194)
Total Equity	-0.0160	-0.0127	-0.0338	-0.0282	-0.0322
	(0.2955)	(0.2951)	(0.2959)	(0.2961)	(0.2956)
Market Capitalization	-0.8630***	-0.8589***	-0.8706***	-0.8694***	-0.8772***
	(0.1561)	(0.1559)	(0.1563)	(0.1564)	(0.1561)
Constant	0.1670***	0.1811***	0.1682***	0.1678***	0.1682***
	(0.0494)	(0.0496)	(0.0495)	(0.0495)	(0.0494)
Observations	990	990	990	990	990
R-squared	0.350	0.350	0.346	0.346	0.348
Adjusted R-squared	0.3077	0.3088	0.3047	0.3047	0.3061
F-test	0	0	0	0	0
Controlling for industry	Yes	Yes	Yes	Yes	Yes
Controlling for year	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6. DISCUSSION

In this section, we will interpret and discuss our findings that are presented above in the empirical results, but first, we shed some light on the limitations and shortcomings of this thesis by conducting a critical discussion regarding both our methodology and the data sample.

6.1 CRITICAL DISCUSSION

Since we are analyzing the European equity market we chose the STOXX600 index to get a large sample that covered the entire EU. A problem with covering a large geographical area with different countries and laws is that the stocks in the sample are not always traded simultaneously due to for example holidays. This problem of different trading days became

apparent when we tried to calculate our beta variable for each firm, resulting in the need to create a new index to find a reasonable beta variable. This could have had negative effects on our results.

The sample period used is two years, this could be viewed as a short and it is also possible to argue that a study examining the effects of CSR disclosure in the period before the directive as well as after would entail a more comprehensive result of the legislative effect from the directive. Although our results show that the sample period is sufficient for this thesis' outset purpose, a longer sample period could provide more clarity.

In hindsight, it would have been interesting to analyze corporate responsibility reports in the same way we did annual reports. If the regression models were conducted in the same fashion on corporate responsibility reports it might have yielded additional insights into CSR disclosure through the corporate responsibility report as well.

Eventual bias could also be discovered since the samples for the day before and the day after are smaller than the other samples in the regressions on abnormal return. A relationship between the release of the report and the weekday of release was not controlled for and should have been explored. However, the conclusions of the study do not lean too heavily on these results that would be affected by this potential bias.

We also decided to not winsorize our data, which could be viewed as a weakness in our results. However, as previously argued, to winsorize our data could weaken our results because we examine whether the focus of CSR disclosure is considered by actors in capital markets. Winsorizing in this situation would cut off the firms that are heavily focused in one area while not mentioning another, making our dataset centered only on firm's that are diverse in their CSR disclosure, which would mean losing valuable insights in whether the focus is a factor that affects capital markets or not. Furthermore, cleaning the data manually made us confident in its quality.

6.2 HYPOTHESIS I & HYPOTHESIS II

Our first two hypotheses examine whether investors react at all to the release of the corporate responsibility report (I) and the annual report (II). These are tested by looking at the abnormal returns using a sign test to conclude whether the abnormal return differs from zero.

Table 3 shows that no significance in abnormal return is found, indicating that investors do not interpret the disclosure in the corporate responsibility to be positive or negative. We can therefore not reject the null hypothesis of Hypothesis I. The results of our sign test do partially concur with the results from Nuzula & Kato (2011) by showing the same insignificant result in the immediate period, but different results in that they found significance in their period for examining the short-term effects. An explanatory theory for our insignificant findings could be what flammer (2013) found in her research, i.e. that Environmental CSR work exhibits decreasing marginal returns. Our sample takes place in a later sample period than both Nuzula & Kato (2011) and Flammer (2013), and if investors view Environmental CSR work as a type of insurance for future environmental costs, as argued by Flammer (2013), the investors might think that the European market is sufficiently insured against those future costs.

The Table 4 results show that investors do respond to the publication of the annual report, by showing a significant Average-CAR value of +0.0020 on the publishing day, and we can, therefore, reject the null hypothesis of Hypothesis II. As previously mentioned the annual report consists of an array of topics and is not only focused on CSR like the corporate responsibility report, this means that we cannot really interpret anything regarding investors' reaction to CSR disclosure but this is further examined in the following hypotheses.

6.3 HYPOTHESIS III

To answer whether investors respond to the sustainability focus that is disclosed in the annual report we conducted several regression models that were presented in Empirical Results. The results are somewhat inconclusive, not all categories show significant results in all regressions, but the results in table 8 that is using the focus dummies as test variables show that investors seem to use the disclosure of CSR focus, supporting rejection of the null hypothesis of hypothesis III. Furthermore, one category is consistent throughout all

regressions, and we argue that it is rather clear, in table 5 and 8, that firms who focus and report a majority on CSR that is categorized as Social & Community achieve lower abnormal return when compared to the three other categories. Previous research by Epstein & Freedman (1994) shows that investors care more for CSR that is correlated with higher profitability, a way of interpreting the negative market reaction to Social & Community focus could, therefore, be that this type of work is less correlated or believed by investors to increase profitability for the firm.

In table 10 we find statistical significance in two out of three categories when running all the focus test variables in a regression on volatility. The regression suggests that companies that focus on the Employee ($p<0.1$), Human rights ($p<0.1$), and Environment ($p<0.05$) categories in their annual reports have higher volatility than companies with a focus on Social & Community. However, when the regressions are run on a single dummy only the Social & Community focus is significant, telling us that the only thing we know with high significance is that Social & Community focused companies have lower volatility than companies focused on another of our categories. Nevertheless, we get additional support in rejecting the null hypothesis of Hypothesis III concluding that CSR focus does affect the stock price.

6.4 HYPOTHESIS IV

To answer whether investors consider the CSR disclosure intensity in the annual reports, we used another group of regression models that were presented in the Empirical Results. The results are not all conclusive, again not all categories show significant results in all regressions and time intervals. Looking at table 6 regressing word category fraction on the abnormal return, we can see that a relatively high number of CSR related words have negative effects on abnormal returns the day after the release of the report for all categories. While not as conclusive in the short term, table 5 shows that the same is true for at least the Social & Community category. Nevertheless, there were two statistically significant reactions in table 6 at $p<0.05$ and one statistically significant reaction at $p<0.05$ in Table 5 when running the variables separately, supporting the rejection of the null hypothesis of hypothesis IV. Noting that not all types of CSR disclosure have a statistically significant effect at all time intervals. Table 7, regressing yearly change of category word count on abnormal return

tells the same story in the immediate term with three variables at $p<0.05$ and it is also a sign of a causal relationship because of the variable independence.

A stronger relationship is also shown through the regressions on volatility where companies with high CSR disclosure intensity are shown to have lower volatility for all categories. In table 9, regressing the word category count on the stock volatility, a statistically significant relationship between volatility and the intensity is shown in all of the CSR categories at $p<0.05$. Even though the results of the regressions on the abnormal returns are quite clear, the relationship between CSR disclosure intensity and volatility seems to be even stronger. The fact that companies with a lot of CSR disclosure have lower volatility in the equity markets could be explained with what was argued by Flammer (2013). She argues that CSR can, from an investor's point of view, be classified as a type of insurance from for example future misconduct, fees from environmental crime or mishappenings, and faulting product safety. The fact that CSR disclosure lowers volatility while paying for it with a lower abnormal return supports that the argumentation made by Flammer (2013) could be correct in the EU.

7. CONCLUSION

This thesis focuses on whether equity markets react to CSR disclosure and how it is interpreted by investors. Previous research exists regarding events connected to CSR-performance, -news, and similar types of information, although research purely examining the effects of corporate responsibility reporting and CSR disclosure is limited. Furthermore, the thesis uses more recent data compared to previous research which provides more insight in a time where sustainability and environmental effects are of more concern to companies and the general public (McPherson 2020). We argue that this thesis informs both unaware investors and other stakeholders of the connection between CSR disclosure and stock prices as well as shed a light on the value of this type of information. Stakeholders such as legislative entities could benefit from research such as this to formulate regulations like the Directive 2014/95/EU, which can render CSR a more useful metric.

First, through the event study, we discover a statistically significant abnormal return of $p<0.05$ on the day the annual report is released, allowing us to reject the null hypothesis of hypothesis II, while finding no similar effects on the corporate responsibility report, making

us unable to reject the null hypothesis of hypothesis I. Secondly we find a relationship between CSR usage and abnormal return as well as volatility. The results indicate a relationship between all the categories of CSR disclosure and lower abnormal returns in the immediate term but only found a strong connection to lower abnormal returns in the short term for the Social & Community category. This is especially clear when regressing on the company focus dummies where Social & Community focus companies had significantly lower abnormal returns than the other categories. These findings give us support in rejecting the null hypothesis of Hypothesis III and IV. Thirdly we found a strong relationship between volatility and CSR disclosure, showing that there is a relationship between volatility and word count as well as category focus in the examined categories, thus letting us more firmly reject the null hypothesis of Hypothesis III and IV.

For further studies, we suggest the study is carried out with a larger sample, both in terms of sample period but also in terms of the number of companies. This to capture the long-term effects of year-to-year changes and differences in reaction in a distressed market environment. A study like this could also examine what relationships are the most stable across countries and industries as well as examine more casual relationships. We also suggest controlling for other known effects of contents in annual reports, such as management discussion and analysis as well as content specificity. Lastly, we realize that the four categories might be lacking in that it does not represent all the different focuses of which CSR can take and therefore suggest an expansion of these categories.

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APPENDIX

1. Atlas.ti DEFAULT ENGLISH STOPLIST

a	between	further	how's	myself	that's	until	whom
about	both	had	i	no	the	up	who's
above	but	hadn't	i'd	our	their	very	why
after	by	has	if	ours	theirs	was	why's
again	cannot	hasn't	i'll	ourselves	them	wasn't	with
against	can't	have	i'm	out	themselves	we	won't
all	could	haven't	in	over	then	we'd	would
am	couldn't	having	into	own	there	we'll	wouldn't
an	did	he	is	same	there's	were	you
and	didn't	he'd	isn't	shan't	these	we're	you'd
any	do	he'll	it	she	they	weren't	you'll
are	does	her	its	she'd	they'd	we've	your
aren't	doesn't	here	it's	she'll	they'll	what	you're
as	doing	here's	itself	she's	they're	what's	yours
at	don't	hers	i've	should	they've	when	yourself
be	down	herself	let's	shouldn't	this	when's	yourselves
because	during	he's	me	so	those	where	you've
been	each	him	more	some	through	where's	
before	few	himself	most	such	to	which	
being	for	his	mustn't	than	too	while	
below	from	how	my	that	under	who	

2. Wordlist Categories

1. HUMAN RIGHTS

ABORIGINAL
ABORIGINALS
ABUSE
ACCEPT
ACCEPTED
ACCOMMODATING
ACCOMMODATION
ACCOUNTABILITY
ACTIVITIES
ACTS
ADOPT
ADOPTED
CHARITABLE
CIVIL
CLAIMS
CLASS
COACH
COMMITMENTS
COMMITTEE
COMMUNITIES
COMMUNITY
CONSTITUTION
CONSTITUTIONAL
CORE
COVENANTS
CROSS
CULTURES
CUSTODIAN
ADVERSE
ADVERSELY
AFRICAN
AFRICANS
AGED
AGENT
AGES
AGREEMENTS
AIDS
ALASKA
ALASKAN
ALTERNATIVE
AVOID
AWARD
DEVELOPMENT
DIED
DIES
DISABILITY
DISABLED
DISADVANTAGE
DISADVANTAGED
DISADVANTAGEOUS
DISADVANTAGES
DISASTERS
DISCRIMINATING
DISCRIMINATION
DISCRIMINATORY
DIVERSE
DIVERSIFICATION
DIVERSIFIED
AWARENESS
BALANCING
BASELINES
BELONGING
BENEFICIALLY
BENEFICIARY
BENEFIT
BENEFITS
BYLAWS
CARE
CERTIFICATION
CERTIFICATIONS
CERTIFY
CERTIFYING
DIVERSIFY
DIVERSIFYING
DIVERSITY
DUTY
EDUCATE
EDUCATING
EDUCATION
EDUCATIONAL
ELECTED
ELECTION
EMPLOY
EMPLOYED
EMPLOYEE
EMPLOYEES
EMPLOYEES'
EMPLOYEES

EMPLOYING
EMPLOYMENT
EMPOWER
EMPOWERED
EMPOWERING
EMPOWERMENT
EMPOWERS
ENABLING
ENGAGE
ENGAGING
ENHANCEMENTS
ENHANCING
ENTITLED
EQUAL
EQUALITY
EQUITY
ERGONOMICALLY
ETHIC
ETHICAL
ETHICALLY
ETHNIC
ETHNICALLY
ETHNICITIES
ETHNICITY
EXERCISE
EYES
FACE
FAIR
FAIRNESS
FAMILIES
FAMILY
FEMALE
FIDUCIARY
FIRST
FREE
FREEDOM
GAY
GAYS
GENDER
GENDERS
GOD
GOVERNANCE
HABITAT
HAZARDOUS
HEALTHCARE
HEALTHCARING
HIRE
HIRING
HONEST
HONESTY
HUMAN
HUMANITARIAN
HUMANS
HUNGRY
IMPRISONMENT
INCLUSIVE
INCLUSIVENESS
INFRINGE
INFRINGEMENT
INFRINGING
INTERESTS
INVOLUNTARILY
INVOLUNTARY
INVOLVE
INVOLVED
INVOLVEMENT
LABOR
LAWFUL
LAWFULNESS
LAWS
LEGAL
LEGALITY
LESBIAN
LESBIANS
LIFE
LIFESTYLES
MATE
MEDICAID
MEDICARE
MEDICINAL
MINORITIES
MINORITY
MISSION
NATIONALITY
NATIONALIZATION
NATIONALIZE
NATIVE
NATIVES
NATURAL
OPPRESSIVE
ORIGINAL
OUTSIDERS
OUTSOURCE
OUTSOURCES
OUTSOURCING
OWNERSHIP

PARTIES
PARTNER
PARTNERS
PARTNERSHIPS
PAYROLL
PEER
PENSION
PEOPLE
PERFORMANCE
PERFORMERS
PERSON
PERSONAL
PERSONNEL
PERSONS
PHILANTHROPY
PHILOSOPHIES
PLURALITY
POOR
PREJUDICED
PREJUDICES
PRESERVATION
PRIVILEGES
PROTECTED
PROTECTIONS
RACE
RACES
RACIAL
RAPE
REALLOCATE
REALLOCATED
REBUILDING
RECOGNITION
REGULATE
REGULATIONS
REGULATORY
RELATIONS
RELATIONSHIP
RELATIONSHIPS
RELIGIOUS
RESERVATION
RESPECT
RETIREMENT
RIGHT
RIGHTS
SAFETY
SALARIES
SAME
SCHOLARSHIPS
SEXUALLY
SHARED
SICK
SOCIAL
SPOUSE
STRENGTHS
TALENTED
TEAMWORK
UNALIENABLE
UNBIASED
UNCONDITIONAL
UNDERREPRESENTED
UNEMPLOYABLE
UNEMPLOYMENT
UNETHICAL
UNFAIR
UNIONIZED
UNIONS
UNLAWFUL
VOTE
VOTING
VULNERABILITY
WELLNESS
WHEELCHAIR
WHEELCHAIRS
WOMEN
WORKDAY
WORKER
WORKERS
WORKFORCE
WORKFORCES
WORKPLACES
WORKSPACES

2. EMPLOYEE

ABUSE
ACCOMMODATING
ACCOMMODATION
ACCOUNTABILITY
ADOPTED
AFRICAN
AGED
ALCOHOL
ALTERNATIVE
AMERICANS
BALANCING
BATHROOMS
BELIEVING
BENEFICIALLY
BENEFICIARY
BENEFIT
BENEFITS
BLENDED
BODY
BONUS
BOUNDARIES
BYLAWS
CARE
CERTIFICATION
CERTIFICATIONS
CERTIFY
CERTIFYING
CIVIL
CLAIMS
CLASS
COLLECTIVE
CONTRIBUTION
CULTURES
CUSTODIAN
CUSTOMS
DEVELOPMENT
DIED
DIES
DIRECTOR
DISABILITY
DISCRIMINATING
DISCRIMINATION
DISCRIMINATORY
DIVERSE
DIVERSIFICATION
DIVERSIFIED
DIVERSIFY
DIVERSIFYING
DIVERSITY
DRUG
EDUCATE
EDUCATING
EDUCATION
EDUCATIONAL
ELECTED
EMPLOY
EMPLOYED
EMPLOYEES
EMPLOYEE'S
EMPLOYEES'
EMPLOYEES
EMPLOYER
EMPLOYERS
EMPLOYERS
EMPLOYING
EMPLOYMENT
EMPLOYS
EMPOWER
EMPOWERED
EMPOWERING
EMPOWERMENT
EMPOWERS
ENABLING
ENGAGE
ENGAGING
ENHANCEMENTS
ENHANCING
ENJOYABLE
ENVIRONMENT
EQUAL
EQUITY
ERGONOMICALLY
ETHIC
ETHICALLY
ETHNIC
ETHNICITIES
ETHNICITY
EVEN
EVENLY
EXERCISE
EXPERIENCE

EXPERIENCED
EXTENDED
FAIR
FAIRNESS
FAMILIES
FAMILY
FEMALE
FIDUCIARY
FREEDOM
GAY
GAYS
GENDER
GOAL
GOALS
GOVERNANCE
GREEN
HARD
HEALTH
HEALTHCARE
HEALTHCARING
HEALTHY
HIRE
HIRING
HUMANITARIAN
HUMANS
INCENTIVES
INDIVIDUAL
INDIVIDUALLY
INFRINGE
INFRINGEMENT
INFRINGING
INSURANCE
INTERNAL
INVOLVED
JOBS
KNOWLEDGE
KNOWLEDGEABLE
KNOWLEDGEBASE
LABOR
LABORERS
LAWFULNESS
LAWS
LEADER
LEADERS
LEADERSHIP
LEARNED
LEARNING
LEGAL
LESBIAN
LESBIANS
LIFE
LIFESTYLES
LIVES
LIVING
MANAGEMENT
MATE
MEALS
MEDICAID
MEDICARE
MEDICINAL
MINORITIES
MINORITY
MISSION
MORAL
MORTALITY
MULTINATIONAL
NATIVE
NONEMPLOYEE
NONRENEWAL
OCCUPATIONAL
OFFICER
OFFICERS
OUTSOURCING
PAID
PARTICIPANT
PARTICIPANTS
PARTICIPATING
PARTICIPATORY
PARTIES
PARTNER
PAYROLL
PEER
PENSION
PEOPLE
PERFORMANCE
PERFORMERS
PERSON
PERSONAL
PERSONNEL
PERSONS
PHILOSOPHIES
POSITIONS
PRACTICES
PREJUDICED
PRESCRIBED
PRINCIPLES

PRIVILEGES
PRODUCTIVITY
PROFESSIONAL
PROFESSIONALS
PROFIT
PROMOTION
PROTECTED
QUALITY
RACE
RAPE
RATE
REALLOCATE
REALLOCATED
RECOGNITION
RECOGNIZE
RECOGNIZED
REGULATE
REGULATIONS
REGULATORY
REIMBURSE
RELATIONS
RELATIONSHIP
RELATIONSHIPS
RELIGIOUS
RESPECTS
RESPONSIBILITY
RESPONSIBLE
RETIREMENT
RIGHT
ROLE
SAFE
SAFETY
SALARIES
SATISFACTION
SCHOLARSHIPS
SEASONAL
SELECTION
SENSITIVITY
SERVED
SERVES
SERVICE
SERVICES
SEXUALLY
SHARED
SICK
SIZE
SOCIAL
SOCIALLY
SPOUSAL
SPOUSE
STAKEHOLDERS
STRENGTHS
SUITABILITY
SUITABLE
SUSTAIN
SUSTAINS
TALENTED
TEAM
TEAMS
TEAMWORK
TENURE
TRAINED
TRUST
TRUTHFULNESS
TUITION
UNDERSTAND
UNDOCUMENTED
UNEMPLOYABLE
UNEMPLOYMENT
UNETHICAL
UNFAIR
UNION
UNIONIZED
UNIONS
UNPRODUCTIVE
UNSAFE
VACATION
VISION
WAGE
WEAR
WELFARE
WELLNESS
WHEELCHAIR
WHEELCHAIRS
WIFE
WOMEN
WORK
WORKDAY
WORKER
WORKERS
WORKERS
WORKFORCE
WORKFORCES
WORKING
WORKMEN
WORKPLACES

WORKS
WORKSPACES

3.**SOCIAL AND COMMUNITY**

ABUSE
ABUSED
ABUSES
ACCEPT
ACCEPTED
ACCOMMODATING
ACCOMMODATION
ACCOMPANIED
ACCOUNTABILITY
ACCOUNTANCY
ACTIVITIES
ADOPT
ADOPTED
AFFORDABLE
AGED
AGES
AIDS
AMERICAN
ARMS
BENEFICIALLY
BENEFICIARY
BENEFIT
BENEFITS
BRIBE
BUILDING
CERTIFICATION
CERTIFICATIONS
CERTIFY
CERTIFYING
CHARITABILITY
CHARITABLE
CHARITABLY
CHARITIES
CHARITY
CHILD
CIVIC
CIVIL
CLASS
CLEAN
CLEANED
CLEANER
CLEANING
CLEANLINESS
CLEANUP
COLLECTIVE
COLLECTIVELY
COMMITMENTS
COMMON
COMMUNAL
COMMUNITIES
COMMUNITY
CONCERN
CONFLICT
CONTRIBUTION
CORPORATE
COUNTRIES
COUNTRY
COUNTY
CSR
CULTURAL
CULTURES
CUSTODIAN
DELEGATION
DEMOGRAPHIC
DEVELOPMENT
DIET
DISABILITY
DISABLE
DISABLED
DISCLOSURE
DISCLOSURES
DIVERSE
DIVERSIFICATION
DIVERSIFIED
DIVERSIFY
DIVERSIFYING
DIVERSITY
DRINKING
EDUCATE
EDUCATING
EDUCATION
EDUCATIONAL
ELECTED
ELECTION
EMPLOY
EMPLOYED
EMPLOYING
EMPLOYMENT
EMPLOYS
EMPOWER

EMPOWERED
EMPOWERING
EMPOWERMENT
EMPOWERS
ENABLING
ENGAGE
ENGAGING
EQUAL
ETHIC
ETHICALLY
FAIRNESS
FAMILIES
FAMILY
FEMALE
FOOD
FOODBANK
FOODBANKS
FREEDOM
FUND
FUNDRAISING
FUNDS
FUTURE
GIVING
GOVERNMENT
GOVERNMENTS
GROUPS
HABITAT
HEALTHCARE
HEALTHCARING
HELP
HOPE
HUMAN
HUMANITARIAN
HUMANS
HUNGRY
IMPACT
IMPROVE
IMPROVEMENTS
INDIGENOUS
INNOVATION
INTELLIGENCE
INVOLVE
INVOLVED
INVOLVEMENT
JEOPARDIZE
JEOPARDIZED
JEOPARDIZES
JEOPARDIZING
JOB
LABOR
LAWFULNESS
LAWS
LEAD
LEADERSHIP
LEARNED
LEARNING
LEGAL
LESS
LIFE
LIFESTYLES
LIVES
LIVING
LOCAL
LOCALE
MEANINGFUL
MEDICAID
MEDICARE
MEDICINAL
MINIMIZE
MINORITY
MISSION
MORAL
MORTALITY
MULTINATIONAL
NATIVE
NATURAL
NATURALLY
NATURE
NOT
OPEN
OPPRESSIVE
ORGANIZATIONAL
ORGANIZATION'S
ORPHAN
ORPHANS
OUTPERFORM
OUTSOURCE
OUTSOURCES
OUTSOURCING
OWNERSHIP
OWNS
PARTICIPANT
PARTICIPANTS
PARTICIPATING
PARTIES
PARTNER

PARTNERS
PARTNERSHIPS
PARTY
PEOPLE
PERFORMANCE
PERFORMERS
PERSON
PERSONAL
PERSONS
PHILANTHROPIC
PHILANTHROPIES
PHILANTHROPY
PHILOSOPHIES
PLAN
PLURALITY
POOR
PREJUDICED
PREJUDICES
PRESERVATION
PRESERVE
PREVENTED
PRINCIPLES
PRIVILEGES
PROFIT
PROJECTS
PROTECTED
PROTECTIONS
PUBLICLY
RACE
RAPE
REBUILDING
RECOGNITION
RECOGNIZE
RECOGNIZED
RECOVERY
REDEEMABLE
REDUCE
REDUCES
REGULATE
REGULATIONS
REGULATORY
RELATIONS
RELATIONSHIP
RELATIONSHIPS
RELIABILITY
RELIGIOUS
RELY
RENEW
RENOVATION
RESPECT
RESPECTS
RESPONSIBILITY
RESPONSIBLE
ROLE
SAFE
SAFETY
SCHOLARSHIPS
SERVICE
SERVICES
SHARED
SICK
SOCIAL
SOCIALLY
SOCIETAL
SPONSORS'
SPONSORSHIP
STAKEHOLDERS
SUSTAIN
SUSTAINABILITY
SUSTAINABLE
SUSTAINED
SUSTAINING
SUSTAINS
SWEAT
TALENTED
TEAM
TEAMS
TRAINED
TRANSPARENCY
TRANSPARENT
TRUST
TRUSTEES
TRUTHFULNESS
UNCONDITIONAL
UNEMPLOYABLE
UNETHICAL
UNFAIR
UNFRIENDLY
UNIONIZED
UNIONS
UNITED
UNRESTRICTED
UNSAFE
UPROOTING
URBAN
URBANIZATION

VOLUNTARILY
VOLUNTARY
VOLUNTEER
VOLUNTEERISM
VOLUNTEERS
VOTE
VOTING
VULNERABILITY
VULNERABLE
WATER
WATERS
WELL
WELLNESS
WOMEN
WORK
WORLD
WRONGDOERS
WRONGDOING
WRONGFULLY
ZONE
ZONES

4. **ENVIRONMENT**

ABUSE
ACCEPT
ACCEPTED
ACCOMMODATING
ACCOMMODATION
ACCOUNTABILITY
ACID
ACTIVITIES
ADOPT
ADOPTED
ADVERSE
ADVERSELY
AFFLUENCE
AFFLUENCES
AGREEMENTS
AGRICULTURAL
AGRICULTURE
AGRO
AIDS
AIR
ALTERNATIVE
AMAZON
ANCIENT
ANIMAL
ANTI
ARMS
ASSURANCE
ATTENTION
ATTRIBUTABLE
AUDIT
AUDITOR
AUDITORS
AUTHENTICATE
AUTHENTICITY
AWARENESS
BALANCING
BARGE
BASELINES
BASIN
BEAUTIFUL
BEAUTY
BENEFICIALLY
BENEFICIARY
BENEFIT
BENEFITS
BIO
BIODIVERSITY
BOARD
BODY
BOUNDARIES
BRIBE
BROAD
BROMIDES
BROMINE
BROMINES
BUILDING
BULL
BURN
BYLAWS
CAGE
CAGED
CARBON
CARBONATE
CARBONATED
CARBONATES
CARBONS
CARRYING
CATASTROPHIC
CHEMICALS
CHLORIDE
CHLORINE
CITY
CIVIL
CLEAN
CLIMATE
CO2
CODE
COLLECTIVE
CONFLICT
CONSERVATION
CONSERVATIONIST
CONSERVATIONISTS
CONSERVATIONS
CONSERVE
CORN
CORPORATE
COUNTIES
COUNTRIES
COUNTRY
COVENANTS
CROPS
CRUD
CULTIVATION
CUSTODIAN

CUSTOMS
CYCLE
DELEGATION
DEMOGRAPHIC
DEPLETED
DEPLETES
DEPLETING
DEPLETION
DEPLETIONS
DESIGN
DIOXIDE
DIOXIDES
DISCLOSING
DISCLOSURE
DISPOSAL
DIVERSE
DIVERSIFICATION
DIVERSIFIED
DIVERSIFY
DIVERSIFYING
DOUBLE
DWINDLING
EASEMENTS
ECOLOGICAL
ECO
EDUCATE
EDUCATING
EDUCATION
EDUCATIONAL
EFFICIENCIES
EFFICIENTLY
EMISSION
EMISSIONS
EMPLOY
ENERGY
ENHANCEMENTS
ENHANCING
ENVIRONMENTAL
ENVIRONMENTALIST
ENVIRONMENTALISTS
ENVIRONMENTALLY
EPA
EQUIP
ESG
ETHIC
ETHICALLY
EVOLUTION
EXCEED
EXCEEDED
EXCEEDS
EXCESS
EXIT
EXPAND
FACILITY
FAIR
FAIRNESS
FARM
FARMER
FARMLAND
FARMLANDS
FLAMMABILITY
FLIES
FOODSERVICE
FOSSIL
FOSSILS
FREE
FREEDOM
FUNDRAISING
FUNDS
GENETICALLY
GLOBAL
GOLD
GOOD
GREEN
GRI
GROUNDWATER
GROVES
GROW
GUIDELINES
HARM
HARMONY
HARNESS
HAZARDOUS
HCFC
HISTORIC
HUMANITARIAN
HUMANS
HUNGRY
HYBRID
HYDROGEN
HYDRO
IIRC
IMPAIRMENTS
IMPLEMENTING
IMPROVE
IMPROVEMENTS

INCENTIVES
INDEMNIFICATION
INDEPENDENT
INDICATIONS
INFRINGE
INFRINGEMENT
INFRINGING
INNOVATION
ISO
KLD
LAND
LIFESTYLE
LIVES
LIVING
LOCALE
MAINTENANCE
MAPS
MATERIAL
MATERIALS
MAXIMUM
MEANINGFUL
MEMBERS
MIGRATION
MSCI
NATURAL
NATURE
NUCLEAR
ORGANIC
OVERCAPACITY
OXIDATION
OZONE
PETROLEUM
PIPELINES
PLANT
POLLUTANT
POLLUTANTS
POLLUTING
POLLUTION
POWER
PRACTICES
PRESERVATION
PRESERVE
PRESERVES
PREVENTION
PRO
PURIFICATION
QUALITY
RAINFOREST
REASONABLE
REBUILDING
RECOVERABLE
REDUCE
REDUCES
REGULATE
RENEW
RENEWABLE
RENEWAL
RENEWALS
RENEWED
RENEWING
REQUIREMENTS
RESEARCH
RESEARCHERS
RESERVE
RESERVES
RESERVOIR
RESOURCE
RESPECTS
RESPONSIBILITY
RESPONSIBLE
REUSABLE
REUSE
REUSES
RIGHT
RIVER
ROYALTIES
SAFE
SAFETY
SALTWATER
SCIENCE
SCIENTIFICALLY
SCIENTISTS
SEASONAL
SEASONALLY
SEED
SELECTION
SENSITIVITY
SHIPYARDS
SHORE
SHRINKING
SITE
SMART
SOLAR
SOLUBILITY
SOLVENTS
SOURCING

STAKEHOLDERS
STEWARDSHIP
SUITABILITY
SUITABLE
SULFUR
SURVEYS
SUSTAIN
SUSTAINABLE
SYMBIOTIC
TARGET
TECHNOLOGIES
TEMPERATURE
TERRORIST
THREAT
TORNADOES
TRADEOFFS
TRANSPARENCY
TRANSPARENT
TREE
TRIPLE
TRUTHFULNESS
TURBINE
UNAVOIDABLE
UNBIASED
UNDERUTILIZATION
UNDERUTILIZED
UNECONOMIC
UNECONOMICAL
UNECONOMICALLY
UNETHICAL
UNFAIR
UNPRODUCTIVE
UNPROFITABLY
UNRESTRICTED
UNSAFE
UNUSABLE
UPROOTING
URBANIZATION
VEGETABLES
VOLCANIC
VOLUNTARILY
VOLUNTARY
VULNERABILITY
VULNERABLE
WARM
WASTE
WASTELAND
WATER
WAVE
WEATHER
WETLAND
WETLANDS
WILDERNESS
WILDLIFE
WIND
WINDMILL
WOOD
WORLD
WRONGDOING
WRONGFULLY
YARD
YIELDS
ZONE
ZONES
ZONING