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Reputational capital as factor for new ESG information

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TIIVISTELMÄ:
Sidosryhmien kiinnostus yritystoiminnan vastuullisuutta kohtaan on kasvanut. Myös uutisointi yritysten yhteiskuntavastuuseen (CSR) liittyvistä asioista on valtavirtaistunut, mikä osaltaan painostaa yrityksiä toimimaan yhä vastuullisemmin. Tämä pro gradu-tutkielma käsittelee tapahtumatumatutkimuksen keinoin, miten yhtiösektorien ympäristötekijöihin, yhteiskuntavastuuseen ja hyvään hallintotapaan eli niin sanottuihin ESG-tekijöihin liittyvä maine vaikuttaa osakkeiden lyhyen aikavälin kurssikehitykseen uuden markkinainformaation tullessa julki. Maine on yritysten uskottavuuden ja päivittäisen toiminnan kannalta tärkeää ja suuri osa yrityksen kokonaismaineesta onkin riippuvaista vastuullisuustekijöistä ja -maineesta.

ESG-tekijöiden nousun taustalla ovat muun muassa poliittinen paine, kansainväliset sopimukset ja sidosryhmien tiedon kasvu aiheesta, mitkä kaikki osaltaan painostavat yrityksiä toimimaan yhä vastuullisemmin. Tämä tutkielma antaa kattavan katsauksen ESG-tekijöihin liittyvistä seikoista ja tutkii, mahdollisia eroja riippuen yritysten ESG-maineesta sekä muista tekijöistä markkinareaktiolla mitattuna. Tutkielma vertailee positiivisten ja negatiivisten uutisten markkinareaktioiden eroja sekä hyvä- että huonomaineisten yrityssektorien osalta. Tutkielman toinen tavoite on selvittää miten yrityssektorien sisällä erottautuminen, joko huonosti tai hyvin, vaikuttaa kurssireaktioon kun uutta ESG informaatiota julkaistaan. Tutkielma pohtii myös muita aiheeseen liittyviä pienempiä kysymyksiä, kuten miten uutisten arvaamattomuus vaikuttaa osakkeen kurssimuutokseen sekä kuinka toimialan sisällä kilpailijoista positiivisesti tai negatiivisesti erottautuminen vaikuttaa kurssireaktioon uuden informaation julkistamisen jälkeen.

Kvantitatiivinen tutkimus vertailee Standard & Poor 500-indeksistä tammikuussa 2022 löytyvien yritysten kurssireaktioita, kun ESG:n osa-alueisiin liittyvää uutta informaatiota julkaistaan. Tutkimusmetodina sovelletaan tapahtumatutkimusta. Tutkielman uutiset on julkaistu vuosina 2015-2020 pääosin luetuilla talousalan uutissivustoilla kuten Financial Times ja Bloomberg. Empiiristen tulosten mukaan julkistettaessa positiivista uutta ESG informaatiota, osakkeiden markkinareaktio ei ole merkittävää. Uuden informaation ollessa negatiivista, markkinareaktio koko otoksella on taas selvästi negatiivista. Ottaen huomioon ESG-maineen vaikutuksen, tutkielman tulokset osoittavat, että positiivisen maineen rakentaminen kannattaa. Tarkasteltaessa otosta, ESG-positiivinen toimialamaine suojaa negatiiviselta markkinareaktiota yrityksen tai median julkistettua negatiivista informaatiota. Hyvämaineisilla toimialoilla toimivat yritykset myöskin palkitaan kurssinousulla, mikäli positiivista uutta ESG informaatiota julkaistaan, joskin kurssinousu ei tapahdu heti vaan kahden kauppapäivän kuluessa. Negatiivinen ESG-maine sen sijaan käyvän kalliiksi. Positiivisten uutisten tullessa julki kurssinousua ei tapahdu ja negatiivisten uutisten julkaisu aiheuttaa merkittävän osakekurssin laskun.

Edeltävä akateeminen kirjallisuus on osoittanut, negatiivisen uuden informaation vaikuttavanmarkkinoihin herkemmin kuin positiivinen uusi informaatio. Tämän tuktielman

tulokset osoittavat samoin. Toisaalta tuloksissa täytyy huomioida muita tekijöitä, mitkä vaikuttavat osakehintamuutoksiin. Esimerkiksi ennakko-oletukset ja -asenteet eri sektoreita kohtaan saattavat voimistaa tai lieventää markkinareaktiota, joista nyt mainetta tutkitaan tässä tarkemmin. Tulokset osoittavat myös, että mikäli julkaistu uutinen on markkinoille odottamaton, kurssireaktio on negatiivisten uutisten tapauksessa voimakkaasti osakekurssia laskeva. Mikäli uutista osattiin jossain määrin odottaa, ei reaktio ole merkittävä edes negatiivisten uutisten tapauksessa. Näin ollen uuden informaation yllätyksellisyys näyttäisi olevan myös oleellinen tekijä kurssireaktion muodostumisessa. Tutkimuksen neljäs löydös liittyy kilpailijoista erottautumiseen. Kilpailijoista erottautuminen ei näyttäisi olevan kurssireaktioilla mitattuna ratkaisevaa, sillä ESG-maineeltaan sekä kilpailijoitaan parempien että huonompien yritysten kurssireaktio on voimakkaan negatiivinen negatiivisen informaation tullessa julki ja merkityksetön positiivisen informaation tullessa julki. Negatiivisen informaation julkistuksesta aiheutuva kurssireaktio on kuitenkin voimakkaampi, mikäli yrityksen ESG-maine on negatiivinen. Varsinaisten löydösten lisäksi, tutkielmassa pohditaan muita tuloksiin mahdollisesti vaikuttavia tekijöitä sekä tuodaan esiin ESG-seikkoihin liittyviä ongelmakohtia. ESG-tekijöihin liittyvän uuden informaation vaikutuksia osakemarkkinoihin ei ole vielä tutkittu kovin kattavasti, mikä jättää auki mahdollisuuksia aiheen tutkimiselle tulevaisuudessa.

AVAINSANAT: ESG investing, Environmental, social corporate governance (ESG) news, Corporate reputation, Stock market reactions, Corporate social resposibiliy, Event study

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Kuviot

Taulukot

Abbreviations

AAR	Average Abnormal Return
APT	Arbitrage Pricing Theory
AR	Abnormal Return
CAAR	Cumulative Average Abnormal Return
CAPM	Capital Asset Pricing Model
CAR	Cumulative Abnormal Return
CSP	Corporate Sustainable Profitability
CSR	Corporate Social Responsibility
EMH	Efficient Market Hypothesis
ESG	Environment, Social, Governance
GICS	The Global Industry Classification Standard
IIRC	International Integrated Reporting Council
NGO	Non-Governmental Organization
S&P 500	Standard & Poor 500 Index
SASB	Sustainability Accounting Standards Board
SRI	Socially Responsible Investing

1 Introduction

> *"Reputation is an idle and most false imposition; oft got without merit, and lost without deserving." - Shakespeare (Othello)*

Nowadays, no company can ignore corporate social responsibility issues in their ways of operating. A well-denoted report published by IPCC in 2022 indicated that immediate action is needed to limit the average global warming to 1.5°C by 2030 (IPCC, 2022). Pressure toward firms has increased substantially as company stakeholders increasingly demand sustainable actions. Therefore, both positive and negative ESG related new information is published on markets daily. The media is reporting willingly about companies' ESG actions in addition to companies' reports about their sustainability. Effects of ESG performance is found to drive positive outcomes on various metrics (Eliwa, Aboud & Saleh, 2019; Wang, Dou & Jia, 2016; Chava, 2014; Edmans, 2011). However, markets are prone to psychological biases and often operate irrationally. Previous literature finds also corporate reputation to be an essential factor for sustainable operation (e.g. Roberts & Dowling, 2002). As stakeholders' legislative and moral expectations for sustainable actions seem only to grow, it is increasingly vital for companies to understand the outcomes of their CSR contributions.

Corporate reputation is defined as how stakeholders feel, think, and act towards companies (RepTrak, 2022). Academic literature mainly finds a well-established company reputation to lead to favourable stakeholder relations. Turban and Greening (1996) find that firms' corporate social performance measured on CSP ratings is positively related to good corporate reputation. Thus, a good reputation can provide competitive advantages in the markets. When reputation is discussed in a business context, a strong reputation is a fundamental resource and an asset that maintains competitive advantage (Bergh, Ketchen, Boyd & Bergh, 2010). According to Roberts and Dowling (2002), corporate reputation may be a source of competitive advantage as, due to its intangible nature, it is difficult to replicate. Hence, corporate reputation has considerable potential for value creation (Roberts & Dowling, 2002).

Intangible assets are highly valuable for companies. Therefore, sustainability and corporate responsibility as a factor for reputation can be expected to have real economic value. For instance, Quintana-García, Benavides-Chicón and Marchante-Lara (2021) find that sustainability is a significant factor for firms to guarantee their legitimacy and maintain a good reputation. Another paper by Gassenheimler, Houston and Davis (1998) shows social and environmental responsibility being vital parts of corporate reputation. This thesis focuses on industries' CSR reputation, which can be considered essential when markets evaluate companies' CSR actions. CSR already has a major emphasis when corporative operating methods are evaluated, and the trend suggests it will grow further in the future. To sum up, companies need to manage their corporate reputation, and a significant part of this is maintaining the ESG reputation.

In addition to financial numbers, investors are increasingly analyzing also ESG information. Furthermore, companies are legally obligated to immediately publish any information if it might affect the stock price. In the long run, if a company considers ESG factors in doing business, sustainability can be supposed to offer additional returns (Aouadi & Marsat, 2018). Still, a possible success in future should be priced on efficient markets already today. As responsibility is demanded increasingly from firms, the topic is highlighted, and the responsible ways of companies operating are assessed precisely. Thus, performing in terms of societal responsibility or how different unexpected events related to ESG affect stock prices is not researched extensively (Aouadi & Marsat, 2018).

According to academic literature, companies operating not sustainably can be considered to hurt their reputation. For instance, community pressure and unofficial sanctions can penalize companies for environmental violations (Pargal & Wheeler, 1996). The impact can be direct or indirect. For example, BP's Deepwater Horizon oil spill in 2010 resulted in the company losing approximately half of its market value just in 3 months after the incident (Smith, Smith & Ashcroft, 2011). The direct outcomes of catastrophes can often be conceived effortlessly. In case of the catastrophe of BP,

protests and boycotts against the company spread after the oil spill (Wang, Lee & Polonsky, 2018). However, industries and companies experience indirect CSR impact and reputational effects from CSR engagement (Yang and Stohl, 2020). Thus, the reputation accumulated beforehand might affect market reactions when new CSR events emerge. However, Reuber and Fischer (2010) find that negative behaviour and not answering investors' CSR expectations do not always lead to reputational consequences. This thesis examines the effects of CSR reputation empirically in recent years on the market of the U.S when new ESG information is published.

1.1 Purpose of the study

The purpose of the thesis is to find if companies' previous ESG performance and their industry reputation affect the stock price reaction when new ESG related information becomes public. As Godfrey, Merrill and Hansen (2009) find that if company-related negative events are published, stakeholders' response is projected through the disclosed act. However, stakeholders' reactions are also under the influence of company's previous actions and the intentions of the party involved with the event (Godfrey et al., 2009). Intuitively, good news should lead to positive reactions, and negative news should lead to negative market reactions. However, previous literature finds only negative news to influence stock prices (e.g. Capelle-Blanchard & Petit, 2019). Other considerations in this thesis are how anticipation of the published news and the peer group's performance affects the stock price reaction.

Yang and Stohl (2020) identify in their paper two factors that derive from CSR engagement: direct CSR impact and reputation. The effect of reputation and other indirect effects in forming the price change when new info is published is not as unequivocal as direct effects. The thesis finds the abnormal returns of ESG events and compares the price change reactions of S&P 500 companies depending on their CSR reputation. In this thesis, both direct and several indirect effects are examined.

1.2 Research hypotheses

According to the efficient market hypothesis, markets should always reflect the correct price of the stock based on all available information. Therefore, stock price reactions to new information should be settled immediately on a correct level and represent the new correct price. However, as stated previously, markets are not efficient. Furthermore, there are several factors, such as psychological constraints, affecting the price movements. As this thesis considers ESG related news announcements, for example, Doh, Howton, Howton and Siegel (2010) suggest that the returns of the announcement day are influenced by prior CSR reputation. They find that firms with better CSR reputations are not penalized as much as companies without reputation shields when negative ESG related news emerges.

The way certain companies' CSR looks to investors also depends on how the industry peers are contributing to CSR on their end (Bertels & Peloza, 2008). Therefore, to extensively review a specific company's CSR, the competitors of the examined company must also be reviewed. For this reason, the industry CSR reputation is focused in this thesis and operates as the independent factor. In addition, a peer group evaluation is conducted.

Academic literature finds that it is possible to gather a reservoir of good CSR buffer when successfully practising CSR (Godfrey 2005; Godfrey et al., 2009; Koh, Qian & Wang, 2014). Good CSR reputation support companies in retaining company stock price if adverse events occur. However, stakeholders are subject to cognitive constraints that may prevent rational decision-making when reviewing firms' positive or negative actions (Barnea & Rubin, 2010; Barnett, 2014). Moreover, it is good to note that companies in different industries may not have similar ESG concerns. Stakeholders might also value dimensions of ESG differently. Performing well in sustainability builds a reputation for CSR and helps companies maintain company value in challenging times (Godfrey et al., 2009). Thus, as this thesis examines the sector ESG reputation affecting the market reaction after publishing new information, the following hypothesis is formed.

H1: There is no difference in short-term stock price reaction between companies operating in industries with positive and negative ESG reputation after positive ESG news are announced.

Next, the price reaction to negative news is examined. Stock price reaction difference between a CSR negatively associated company and a company not carrying a negative ESG reputation is examined. Previous academic literature finds that markets punish companies for unethical behaviour (Gunthorpe, 1997; Byun & Oh, 2018). On the contrary, Aouadi and Marsat (2018) show that controversies related to ESG have a significant positive effect on the market value of firms. So-called sin stocks, companies operating in industries not considered responsible, may outperform the market (Hong & Kacperczyk, 2009). Likewise, Lin-Hi and Blumberg (2018) find that companies operating in industries associated CSR negative can differentiate by not performing very poorly and only by avoiding incidents. Nevertheless, Arora and Dharwadkar (2011) note that corporate social responsibility cannot be interpreted as the exact opposite of corporate social irresponsibility. For these reasons, companies and industries with previous negative performance in CSR are tested. The second hypothesis is formed as follows.

H2: There is no difference in short-term stock price reaction between companies operating in industries with positive and negative ESG reputation after negative ESG news are announced.

In addition to other factors, the timing of the news affects the market reaction. Graham, Koski and Loewenstein (2006) present that information published in markets is deeply dependent on whether the timing of the news was known beforehand. Therefore, Graham et al. (2006) suggest splitting events into the ones that market anticipated and events completely unanticipated. In addition to, for instance, regularly published reports, companies publish unexpected news about business-related ESG issues. The media is another source for disclosing unexpected news. Furthermore, companies might discover

CSR issues they have not earlier thought of being part of their business responsibilities before it receives public attention (Porter & Kramer, 2006). Companies might publish CSR investments for example as part of scheduled sustainability reports when the news can be anticipated or mutually, the news might be published surprisingly. Unexpected news related to CSR is often published in media, discussed more in chapter 2.4. Cahan, Chen, Chen and Nguyen (2015) finds media to have a significant role in establishing company reputation. In addition to two hypotheses considering detailly the reputation factor, I examine the stock market reaction depending on the surprise element. Anticipation factor's effects are formed as a hypothesis as follows.

H3: The stock price reaction is equal regardless of publishing unexpected or anticipated CSR news.

CSR is a multidimensional concept. This thesis focuses highly on the industry ESG performance and considers the actions taken inside industries. Next, I examine how diverging from the peer group in terms of ESG reputation affects the market reaction. In other words, is it beneficial for companies to separate positively from the peer industry companies for instance, if they operate in an industry with a negative overall ESG reputation. Capelle-Blanchard and Petit (2019) find that if a company has previously highlighted ESG in their operating more than their peers, a negative effect on markets is mitigated if negative news are published. Findings of Capelle-Blanchard and Petit (2019) suggest separating positively from the peer group inside the industry to lead to good results. This claim is tested with the following hypothesis.

H4: The stock price reaction does not differ between peer industry companies with best ESG reputation and worst ESG reputation.

1.3 Limitations and assumptions

Data related limitations might be argued to exist in this thesis. When collecting a dataset by hand, selection bias might affect a collector. Selection bias in this context refers to the

possibility of sample events not being completely randomized. In this instance, the sample might not perfectly reflect the population. Godfrey et al. (2009) presents that credulity problems can emerge as data might be modified slightly to meet researchers' objectives. Also, the number of events is challenging to evaluate when they support the population adequately, as there are extremely many news events available online. Due to collecting data case-by-case, the sample might be argued to be limited. Moreover, other events might occur simultaneously, causing reactions in stock prices.

A limiting constraint related to data might also be that by collecting historical data by hand, it might be challenging to estimate if the ESG related news are published before the trading day, during the trading day or after the market has closed. In case of news have been published for example, after the closure of exchanges, it might lead to a false event day when estimating the stock price reactions to the news. However, by considering cumulative abnormal returns and examining following and previous trading days, this constraint does not significantly limit the results.

As previously discussed, markets are also prone to psychological biases affecting reactions. For instance, academic psychological literature has documented the tendency of negative information to cause more dramatic effects than positive events (Rozin & Royzman, 2001; Peeters & Czapinski, 1990; Kahneman & Tversky, 1979).

Other limitations could be argued to be related to the general limitations of event studies. Also, critique towards ESG scoring system, used as a benchmark for company reputation in this study, has been discussed more detailly in chapter 2.1.1. Nonetheless, these challenges and limitation are acknowledged when conducting the study. More discussion about the limitations and possible other conflicts are examined in the discussion chaper. Nonetheless, as limitations exist in this study, it leaves room for further studies with larger datasets and improved methods.

2 Theoretical background

The occurrence of news related to ESG has risen significantly. Legal requirements obligate companies to announce company related new information in case the news might affect the price of the company's stock. In addition to compulsory information, various sources publish voluntarily information about companies. Social pressure is forcing companies to act responsibly in their daily operations. From a moral aspect, Soppe (2004) points out that in general, sustainable finance is a tool for more righteous intergenerational justice. The information offered by the company in its statements is often not as easy to approach as the same information told by media and it is why news about the responsibility of firms receive remarkable attention (Capelle-Blanchard & Petit, 2019). The rise of CSR can be discerned from the growth of numerical data appearance of words "corporate social responsibility" in the major newspapers in the United States (Capelle-Blanchard & Petit, 2019). According to Dow Jones Factiva, that takes over 10 000 newspapers in account, words became almost tenfold more common when comparing the years 2000 and 2010 (Capelle-Blanchard & Petit, 2019).

This chapter introduces previous studies and essential theories in relation to the topics of this thesis. First, basic information about ESG and ESG scoring systems are discussed. Secondly, socially responsible investing and its rise and key factors are described. Then following chapters introduce the effects of corporate reputation and also how stock prices tend to react to new information.

2.1 ESG

The letters E, S and G refer to companies' impact on factors related to environment, social responsibility and governance issues. With the help of dividing responsibility issues into the three ESG factors, investors can evaluate firms better, and companies can work efficiently on corporate social responsibility. Environmental factor represents, for instance, how firms manage carbon dioxide emissions and how recycling of waste is operated in the firm. The factor of social responsibility aspects may consist of, for

example, how a company carries out safety issues inside the company, operates with personnel and considers the local community. Governance factor consists of, for example, corruption and the strategies for legal issues such as annual reports. McWilliams and Siegel (2001) define CSR as going beyond the minimum required level of regulation. Such ESG actions are increasingly demanded from companies.

The debate about CSR has been occurring for many years already, but only in the recent decades it can be seen to have gaining popularity. Already in the 1970's Milton Friedman famously stated that the social responsibility of business would only to be increase profits (1970). Friedman's statement has been later criticized and many conflicting researches have been presented and generally accepted (Mulligan, 1986). It is not only about what the companies are doing but also how they do it. Porter and Kramer (2006) present that there are four reasons for companies to contribute to sustainability. The reasons are moral obligation for committing in CSR, helping in securing ability for future performance via sustainability, approval of stakeholders and improved circumstances for operating gained via reputational capital (Porter & Kramer, 2006). Lin-Hi and Blumberg (2018) find that between companies' CSR performance, there are major differences. They also distinguish that corporations have two main ways of operating when considering CSR. One dimension of CSR practice is doing good and another one just avoids doing bad (Lin-Hi & Blumberg, 2018).

ESG investing has gained popularity among investors, along with the rapid rise of responsibility as one criterion of the investing process. ESG investing denotes integration of non-financial dimensions along with the fundamental factors of companies into the investing process (van Duuren, Plantinga, Scholtens, 2016). According to Berry and Junkus (2013), for investors, environmental issues are the most significant when all three dimensions of ESG are compared with each other. Hartzmark and Sussman (2019) present similar findings of the tendency of people to associate for example Morningstar's sustainability rating and even CSR based only on environmental factors. If positive effects of positive investments and negative effects of negative incidents and

policies are compared, among investors favourable social policies are weighed and valued more compared with excluding companies based on specific products or other harmful policies (Berry & Junkus, 2013). In contrast, according to van Duuren et al. (2016), governance is the most focused dimension of ESG. They also present that corporate governance issues are closely related to the quality of management. When these results are compared, the difference is due to the type of investor: professional asset managers seem to highlight the governance issues whereas retail investors underline the significance of environmental issues (van Duuren et al., 2016; Berry & Junkus, 2013).

Amel-Zadeh and Serafeim (2018) find also that ESG information offers material for investors in their investment decisions. As it appears to be beneficial, investors are indeed using the available information. Yet, this material varies systematically between countries and cultures. Coval and Moskowitz (1999) find that investors are typically overweighting domestic firms in their portfolios and the so-called home bias directs the behaviour of investors. Based on this finding, it can be deduced that ESG news may have a cultural connection to the effects of stock prices as well. In one country where data security is considered a problem, typically questions related to this influence more the investment decisions than compared with another culture with main problems related to environmental issues (Amel-Zadeh & Serafeim, 2018). For instance, violations regarding the environment in China show a lower reduction in market value compared with other countries (Xu, Zeng & Tam, 2012). Differences that can be observed as material for the investments' cannot only have differences between business cultures but may also be distinguished between industries and company strategies (Amel-Zadeh & Serafeim, 2018; Capelle-Blanchard & Petit, 2019).

There are also studies that find ESG to have neutral or even negative effect on earnings and financial performance. For example, McWilliams and Siegel (2001) show in their paper that investing in ESG does not automatically add nor however, does it reduce value when results are reviewed on rates of profits. Findings suggests a neutral outcome of conducting CSR or not. Boulouta and Pitelis (2014) point out that firms can differentiate

their products or services through conforming with CSR principles. Additionally, it may typically not even require costly activities from the company. For instance, “Fair Trade” indicates paying slightly more for the often-vulnerable farmers, which is one way of differentiating the product with relatively low investment level (Boulouta & Pitelis, 2014).

CSR is not about avoiding scandals and other adverse singular events but should be successfully implemented in companies’ daily practices to gain a competitive and enduring advantage (Capelle-Blancard & Petit 2019). Keeping stakeholders in mind and performing well in CSR seems to benefit the company and the stakeholders. In previous academic literature, good CSR is generally recognized to lead in rewarding of the companies in the marketplace (Eliwa et al., 2019; Doh et al., 2010; Chava, 2014; Albuquerque, Koskinen & Zhang, 2019). Also, Edmans (2011) presents that satisfaction among the employees correlates positively with the long horizon returns. Still, on the whole, as CSR is not determined comprehensively, and different studies show that contradictory results exist, implying variance to continue in academic literature.

The so-called stakeholder theories emphasize slightly different aspects of stakeholder management. Donaldson and Preston (1995) have categorized different approaches based on descriptive accuracy, instrumental power, and normative validity that help to analyze stakeholder management. Stakeholders provide resources for the companies, influence the general business environment and influence companies efficiency and impacts (Donaldson and Preston, 1995). Thus, stakeholders are in the center of creating additional value and it is challenging to operate successfully without a positive relationship with stakeholders. Furthermore, it could be presupposed the ESG information to influence market price reactions as well.

ESG issues are strongly related to the company-stakeholder relationship. A commonly in academic literature used research firm Reptrak (previously Reputation Institute) has studied the effects of ESG extensively and finds it to be a major factor in forming the relationship between stakeholders and company. They illustrate and monitor companies’

ESG rating on a scale from 1-100. Reptrak (2022) shows several strong and statistically significant correlations between the companies' ESG scores and key activities. Reptrak's findings and statistical correlations are positive and strong. Statistical correlations are presented below in table 1 (Reptrak, 2022).

Factor that ESG Score is compared to	**Statistical correlation (R^2)**
ESG score – General reputation	0,86
ESG score – Purchase intent	0,90
ESG score – Talent acquisition	0,88
ESG score – Investment	0,88

Table 1. R-squared coefficients found between ESG score and certain fundamental that are statistically positive correlated (Reptrak, 2022)

According to RepTrak's (2022) research it can be seen that ESG actually does matter and it correlates stongly with many key metrics vital for successful operating. Another unequivocal finding shows a low ESG score resulting in a 20% willingness to buy, while a high ESG score resulting in a 60% willingness (RepTrak, 2022). RepTrak (2022) finds also in a study that over a third of public have felt betrayed by a company's values resulting in nearly half of them ending business relationship with such companies. Bénabou and Tirole (2010) argue that the responsible companies are intermediaries expressing the consumers' values and by supporting the company, a consumer is contributing positively through the company. Also, about two thirds of consumers prefer companies that reflect their values (RepTrak, 2022). Thus, disclosing company values and implementing the sustainability strategy is affecting the companies' operating directly and should be carefully conducted.

Byun and Oh (2018) find that publicized information about CSR improves companies' performance in the future. Similarly, Albuquerque et al. (2019) show CSR to help product

differentiation, which seems to strengthen the effects of firms to decrease systematic risk and to increase firm value (Boulouta & Pietelis 2014). Drempetic, Klein and Zwergel (2019) point out that by doing the reporting about responsible actions, actually increases the positive sustainability performance of the company. Also, better ESG performance and disclosures might help the companies to lower for example the costs of debt (Eliwa et al., 2019). Similarly, the US merger announcement returns are higher for high CSR acquirers than for low CSR acquirers (Deng, Kang, Low, 2013). Consequently, CSR investments can be expected to increase future cash flows and accordingly increase the firms' shareholder value as well (Boulouta & Pietelis 2014). Importance of social responsibility of companies cannot be ignored even when competitiveness is measured on a national level. Nonetheless, the impact of CSR to national competitiveness is stronger in countries where innovation level is relatively low, suggesting governments increasingly to support responsible ways of operating (Boulouta & Pietelis 2014).

2.1.1 ESG Scores

In order to quantitatively measure and compare the responsibility rate of companies and organizations better, firms are being rated according to ESG criteria (Drempetic et al., 2019). External sustainability rating agencies analyze the companies and assign an ESG score based on the sustainable practices. ESG score system makes socially responsible investing more easily available for anyone and companies easily comparable in ESG (Drempetic et al., 2019). In addition to ESG ratings, the highest CSR performing companies are also noted on lists such as the Global RepTrak 100-lists and Fortune's "world's most admired companies"-list. Lists are easily approachable and help stakeholders perceive the well-performing companies regarding CSR.

Nevertheless, there has been critic raised towards the organizations composing the ratings and the scoring system. As the investors are different, the essential criteria to different individuals may vary making fundamental valuation arduous. Soana (2011) points out that the ESG scores and ratings are merged from a variety of factors and are

based on subjective methodologies. This might result variation in the ethical ratings of the same companies when evaluations done by different companies are compared with each other (Soana, 2011). When considering if there are differences in the reactions depending on the dimension of ESG what the new information concerns, Capelle-Blanchard and Laguna (2010) find that negative incidents affecting the environment appear to impact stock prices more voluminously than negative incidents that are non-polluting. However, Capelle-Blanchard and Petit (2019) suggest that there is no significant difference in the reactions of negative environmental, social or corporate governance news when these three sectors are compared with each other. Most of the numbers used in responsibility analysis are from the past and analyzer should not completely trust the numbers to be the same in future (Drempetic et al., 2019). Furthermore, ESG scores may stand for information that is not significant for all sustainable and responsible investors and that the points measured to issue ESG scores should be regarded with criticism (Drempetic et al., 2019). Instead of the presented sustainable actions conducted, investors and stakeholders should focus more on the core business of the company (Drempetic et al., 2019).

ESG score has a direct effect on the behaviour of investors. A study by Hartzmark and Sussman (2019) present causal evidence on that for example funds with five globes from sustainability rater Morningstar receives remarkably more fund flows. This is suggesting that investors indeed value sustainability in their investment processes and that the companies doing ESG ratings have a considerable influence on market behaviour (Hartzmark & Sussman, 2019). Rating agencies are a notable impactor of the market's movements (Hartzmark & Sussman, 2019). Conversely, there has been criticism appointed towards the reliability of the rating agencies addressing the scores (Hartzmark & Sussman, 2019).

As it can be observed in figure 1, several sectors that should be out of the question for sustainable and responsible investors have better ESG scores than the group "other" presenting the other industries found in the database of ASSET4. Interpreting results

from this data brings up doubts towards the ESG scoring system. In the figure 1, there is a comparison of ESG scores between five controversial industries and the rest of the industries (other) found in the ASSET4 database (Drempetic et al., 2019). Data has been collected from the database of ASSET4 offered by mass media corporation Thomson Reuters (Drempetic et al., 2019). The y-axis provides mean values for the different dimensions of ESG. The number on the bottom presents the number of companies in the subset of the industry. The number on left, next to the diamond, presents mean value of the ESG score in that subset. The number on the right represents the median of that subset of the industry.

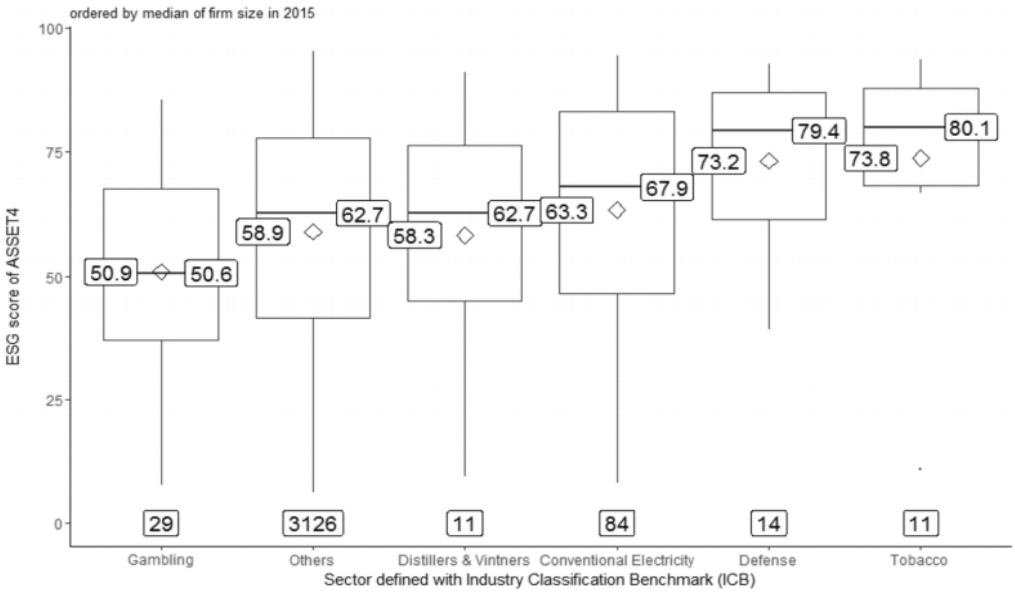

Figure 1. Comparison of ESG scores (Drempetic et al., 2019).

2.2 Socially responsible investing

An investing process that takes ESG dimensions in account has been universally called socially responsible investing (SRI). Despite the rapid rise of SRI recently, investors have no consensus on the precise meaning of the term SRI either (Berry & Junkus, 2013). As the responsibility of companies is increasingly demanded, one could consider that asset managers take ESG factors into account more than before. From an investor's

perspective, academic research is finding out if socially responsible investing is profitable not only considering the external consequences but also financially.

Socially responsible investing has gained popularity in recent decades as investors pay increasing attention to responsibility issues. Van Duuren et al. (2016) show that, ESG information indeed is a part of decision making among institutional investors and a widely considered tool for risk management. Likewise, Amel-Zadeh and Serafeim (2018) show that globally only approximately 16% of investors do not use ESG information in their investment process at all. Still, investors seem to focus more on individual companies than on entire industries (Van Duuren et al., 2016). It is required to realize the strategic plans of a company if willing to understand the long-term ESG processes with aim based on the directions of long-term investing (Van Duuren et al., 2016). By investing in companies promoting CSR, investors can convey their appraisal in social responsibility. Also, previous literature mainly shows that socially responsible investing is not conducted on the expense of returns which suggests it to be (Eliwa et al., 2019; Jeong, Seok, Woo and Bae, 2018; Cheng, Ioannou & Serafeim, 2014; Chava, 2014).

Contradictory findings of ESG's effects are presented as well. Duque-Grisales and Aguilera-Caracuel (2019) find in their paper that investing in ESG is decreasing companies' financial performance. On the other hand, Brammer, Brooks and Pavelin (2006) argue in their research that it is possible to find a positive, negative or neutral correlation between social performance and financial returns and Aouadi and Marsat (2018) present the correlation of CSR and financial performance to be inconclusive. In other words, there is not an unambiguous acceptance in the academic literature about this correlation. Still, it is comfortable to say that studies mainly display a positive correlation between the CSR score and financial performance. (Barnea & Rubin, 2010).

From the perspective of an investor, many organizations are helping to understand the responsibility issues and assisting in finding and comparing responsible investment targets. However, national standards are constructed differently, and ideologies about

what is considered socially responsible practice differ (Helms, Oliver & Webb, 2012). As the problem is identified, to mitigate the problem of variability, many organizations are working on to normalize companies' responsibility reporting, standardizing ESG issues and other responsibility related concerns. This also helps investors to invest more responsibly as for example EMAS certification or ISO 14001 is a clear signal for investors about firms' intentions to meet environmental expectations of stakeholders (Martín-de Castro, Amores-Salvadó, Navas-López, & Balarezo-Nuñez, 2017). To sum up, many organizations work on the standardization and other challenges of responsible investing.

To systematically develop ESG issues and to report about the process is a relatively diverse sequence of actions. As late as in 2013, the International Integrated Reporting Council (IIRC) released the first internationally recognized framework for integrated reporting. IIRC's mission is to promote integrated reporting and introduce it in every sector of business practice. According to Koerber (2010), all different standards are designed to respond to a specific stakeholder group demands. After all, the different standards might still overlap (Koerber, 2010). The reports about strategy, past and future predicted performance and ways of acting should be published in a comparable and unambiguous way. However, when ethical thinking is wanted to incorporate in a company's business culture and disclosed to stakeholders, a stand-alone ESG report seems to be more effective than integrated reporting. As in integrated reporting, the ESG issues and financial information are considered equally significant. Stakeholders tend to focus more on the financial information than on the non-financial information suggesting stand-alone ESG reporting to be better on increasing the ESG awareness among the company's shareholders. (Maniora, 2017).

To further understand the role of ESG in the process of making investment decisions or acting responsibly, parties should first recognize the minor details within the different dimensions of ESG. Sustainability Accounting Standards Board (SASB) is an organization composing a relatively brief but effective questionnaire trying to define the most significant concerns related to responsibility issues in particular sectors. As a result, SASB

can obtain the most recent views of different sectors firms' leaders about the ESG related challenges by not loading much work on the companies. Still, not having one specific language is a challenge for companies. SASB is one of the operators in the market, working on developing the standardization of sustainability reporting and has identified 26 separate sustainability topics from five different categories. With the help of the framework, it is easier to obtain a concrete picture of the multiple dimensions of ESG. These are shown in table 2.

Social capital:
• Human Rights & Community Relations • Customer Privacy • Data Security • Access & Affordability • Product Quality & Safety • Customer Welfare • Selling Practices& Product Labeling
Environment:
• GHG Emissions • Air Quality • Energy Management • Water & Wastewater Management • Waste & Hazardous Materials Management • Ecological Impacts
Leadership & Governance:
• Business Ethics • Competitive Behavior • Management of the Legal & Regulatory Environment • Critical Incident Risk Management • Systematic Risk Management
Business Model & Innovation:
• Product Design & Lifecycle Management • Business Model Reilience • Supply Chain Management • Materials Sourcing & Efficiency • Physical Impacts of Climate Change
Human Capital:

• Labor Practices • Employee Engagement, Diversity & Inclusion • Employee Health & Safety

Table 2. Framework for sustainability by SASB (SASB, 2022).

In Europe, in order to meet climate targets for 2030, EU has established a classification system called EU taxonomy that attempts to classify sustainable economic activities (European Commission, 2022). The main purpose is to help investors and policy makers to recognize with standardization environmentally sustainable companies and projects. With help of standardization, it is easier for investors to estimate the sustainability of companies. EU taxonomy is trying to answer this challenge in the business area of Europe. EU Taxonomy describes six environmental objectives that classify companies and projects being sustainable or not sustainable as companies should be making substantial contribution to at least one of them.

1. Climate change mitigation
2. Climate change adaption
3. The sustainable use and protection of water and marine resources
4. The transition to a circular economy
5. Pollution prevention and control
6. The protection and restoration of biodiversity and ecosystems

Table 3. Six environmental objectives of EU Taxonomy (EU Taxonomy, 2022).

Barnea and Rubin (2010) find in their paper that shareholders may not always have the same views about CSR actions leading to potential conflicts between shareholders. They also find contradictory results about the CSR from the perspective of investors. In the first place, companies tend to over-interest in CSR, which might not maximize the full potential and value of the firm (Barnea & Rubin, 2010). Yoon, Gürhan-Canli and Schwarz (2006) show that CSR activities as factors for affecting the image of a company are highly

dependent on the motives that consumers believe the company has. CSR activities considered to have sincere motives, improve companies' image. Unclear motives, however, are ineffective and insincere motives appear to damage the company's image. In the long run, the image of the company forms up the company's reputation (Yoon et al., 2006).

Amel-Zadeh and Serafeim (2018) present that there are regional differences in ESG investment styles. Globally the three most used methods of making responsible investments are being an active shareholder and engage with companies, secondly, integrating the ESG issues in personal stock analysis and thirdly, negative screening. Interestingly negative screening is the most used style of ESG investing in the US. (Amel-Zadeh & Serafeim, 2018). The future of ESG investing is presented by Amel-Zadeh and Serafeim (2018) that positive screening, denoting a strategy of investors to select companies with favourable activities in terms of ESG to their portfolios, will be the most popular method of responsible investing in five years. On the other hand, active ownership and engagement with companies as well as full integration of ESG issues in the stock analysis are the two most common ESG investment styles in Europe. Findings presents an example of regional differences in investors' mindsets. According to Van Duuren et al. (2016), the most common reason for using ESG information, in general, is to manage risks. To sum up, the methods of interpreting and using ESG information are not unambiguous for all investors. (Amel-Zadeh & Serafeim, 2018).

2.2.1 Sin stocks

Generally, there is acceptance in the academic literature that considering ESG factors in the investment process provides abnormal returns. However, there is also evidence of the abnormal returns found in investing in so-called sin stocks (Hong & Kacperczyk, 2009; Fauver & McDonald, 2014). Lobe and Walkshäusl (2016) have divided industries out of the question for responsible investors into six categories: adult entertainment, alcohol, gambling, nuclear power, tobacco, and weapons. These are the sectors that a sustainable and responsible investor avoids and, in contrast, industries that a sin stock seeking

investor would consider (Drempetic et al., 2019). To summarize, the sin stocks are operating in industries that are considered not responsible from the perspective of ESG's dimensions.

Sin stocks are treated with a few major differences compared to the more sustainable considered companies. Hong and Kacperczyk (2009) note that professional investor parties such as insurance companies or pension funds might avoid ESG negative companies due to their high reporting and sustainability requirements. Also, these companies are not as followed by analysts as other companies (Hong & Kacperczyk, 2009). Major investors' lower liquidity and interest might lead to lower prices and high returns (Hong & Kacperczyk, 2009).

Excessive returns from sin stocks are, however, not absolute. Fauver and McDonald (2014) note that cultural differences might affect the concept of a stock having a negative moral weight, which might affect the abnormal returns gained from sin industry stocks. Also, there might be definitive problems when considering if a stock could be argued to be a sin stock. Trinks and Scholtens (2017) propose the problem of defining companies sin stocks if for instance, only a minor proportion of a company's income is raised from negatively associated industries. ESG scoring system can be a simple guideline to evaluate the company's intrinsic sustainability but has its limitations discussed more detailly in chapter 2.1.1. The conflicting findings of the abnormally positive performance of sin stocks is considered in this thesis, and negatively associated industries are compared with companies from industries with a better reputation.

2.3 Corporate reputation

Reputation is conceptualized as a distribution of feelings toward an entity that produces a collective image of the actor (Bromley, 2001). Another definition of corporate reputation is more forward-looking and describes reputation to present companies' past actions, as well as prospects and appeal in the future, compared to its peers (Roberts & Dowling, 2002). RepTrak (2022) defines reputation as the outcome of two factors: The

company's known actions and initiatives and the narrative associated with the company (RepTrak, 2022).

Building a favourable reputation is a sum of several factors. When reputation is discussed in general, reputation can be perceived being closely related to the relationship between the stakeholders and the company. Despite of the traditional view of stakeholder engagement to enhance corporate responsibility, Greenwood (2007) finds that it is not always the case. However, when considering the reputation perspective, Greenwood (2007) finds that engaging with stakeholders increases the reputation and legitimacy of companies. This thesis supposes that the reputation is formed among all stakeholders and the stakeholder approach serves as the foundation for the thesis.

Reptrak (2022) define company reputation to be derived from two parts. The first part of company reputation is the known actions and initiatives the company takes. The other part of company reputation is developed from the company's communication about the done actions and from the narrative associated with the company (Reptrak, 2022). Previous CSR studies have showed that engagement in socially responsible activities is a significant factor bulding corporate reputation and hence, operates substantially between CSR and organizational performance (e.g., de Castro et al., 2006; Vallaster et al., 2012). Reputation research done by McKnight, Cummings and Chervany (1998) suggest that if firms are gaining positive reputation and are known to have positive elements in their value creation models, reputation is influencing the categorization process that generates additionally trust among stakeholder and cooperation. In this thesis, the focus is on the sustainability aspect of stakeholder-company relationship which receives increasingly attention among the other factors influencing this relationship.

Reputation can be a relatively challenging concept to define and measure in the framework of business. Still, according to Lange and Lee (2011), companies can establish over time a CSR reputation by performing well or poorly in corporate social activities. Corporate reputation can be seen as a foundation for resource-driven sustainable

competitive advantage (Krueger, 2015). However, due to its intangible nature and socially complex and ambiguous definition, it might be challenging to precisely measure its effects. (Barney, 1991). Also, Krueger (2015) points out that it might be difficult to comprehensively measure the effects of corporate actions on the welfare of stakeholders as overall metrics do not exist. For instance, community promoting corporate actions might turn out negative to employees or other stakeholders (Krueger, 2015). Bénabou and Tirole (2010) present an approach for creating good CSR reputation that in order to make a comparison between companies, also the poor performers regarding CSR are necessary on the market. They suggest that if all would perform well, no-one could deviate from the mass and reputational stealing would not occur (Bénabou & Tirole, 2010). They also show that operating sustainably helps companies to build brand trust and it can improve reputational capital among stakeholders which may produce long-term advantages for companies (Bénabou & Tirole, 2010).

Still, companies that have previously published comparatively more positive news than their peer companies or which operate in a sector considered to have positive ESG reputation are affected less when negative ESG events occur (Capelle-Blanchard and Petit, 2019). Miller et al. (2020) find that if a company CSR reputation is changing to average levels of compliance, either by ascending from below average compliance levels to average compliance or descending from above average compliance levels to average compliance levels, this seems not have significant effect on firm performance. However, in case a company is moving away from average corporate social compliance levels this seems to affect firm performance according to Miller et al. (2020). The effect was noticeable and positive when CSR reputation improved and significantly negative when CSR reputation weakened (Miller et al., 2020).

Previous studies have presented a theory about so-called moral reputation capital that suggest CSR activities to lead in building corporate reputation (Godfrey, 2005; Godfrey et al., 2009). This suggests that previously created good CSR reputation protects the firm value in occurrence of negative shocks coming to markets (Godfrey et al., 2009). When

new negative information is published, stakeholders are subject to both the actual new information but also the intentions of the designated company (Godfrey et al., 2009). Companies with no previously created CSR buffer, lack this mitigating effect (Godfrey et al., 2009).

Good corporate reputation is benefitting the companies directly. Positive corporate reputation seems to increase availability to better financial resources, employees or for instance technological solutions (Doh et al., 2010). Also, Roberts and Dowling (2002) find good corporate reputation to lead in ability of maintaining exceptional profit results. Miller et al. (2020) find in their paper that CSR reputation has a significant effect also measured economically. The paper shows positive CSR reputation to rise profits by over four percent and a negative CSR reputation to drop profits by almost eight percent (Miller et al., 2020). Also, measured on firm performance, changes in CSR reputation have significant impacts that are predictable, asymmetric, and sizeable (Miller et al., 2020). Lins Servaes and Tamayo (2017) show also that good CSR ratings protect companies especially in times of negative shocks. However, Strahilevitz (2003) finds CSR activities not to enhance the company reputation operating in negatively associated industries.

Miller et al. (2020) argue that firm performance is dependent on the firm's preceding reputation for CSR. Gallemore, Maydew and Thornock (2014) find that tax avoidance of companies or executives does not lead to significant negative reputational losses. In contrast, Luo and Meier (2012) show that negative events that involve companies with a good reputation and strong CSR record from past are are reported more often by the media, suggesting the good reputation actually having a negative effect in case of setbacks. I continue from these papers to find if there is dependency between industry CSR reputation and stock price reactions when new info emerges.

The views of operating responsibly are divided. Neoclassical economics presents that companies should only invest in projects that have a positive influence on the future

earnings of the company. However, for instance Martin and Moser (2016) find that investors are ready to actually compensate companies for disclosing corporate social responsibility information even if it is clear that no financial benefits are achieved. Similarly, Drempetic et al. (2019) show that if there is more data available, the CSR reputation is more positive. This indicates that just publishing about CSR helps to improve CSR reputation. If there is no information available, no trust on companies CSR consideration can be guaranteed and this seems to influence the rating agencies negatively resulting in lower ESG score (Drempetic et al., 2019). Another study presents that one reason for companies participating in CSR activities is to gain reputation that may lead to improved operation environment (Porter & Kramer, 2006). Doh et al. (2010) assert via institutional theory that authorities influence investors' and other stakeholders' impression about companies. Stakeholders' reputation conception is highly shaped by such credible third party sources (Doh et al., 2010). The academics speaking for responsible ways of operating are performing for keeping the stakeholders and societal aspect in mind with a long, sustainable perspective when doing business. Orlitzky, Schmidt and Rynes (2003) present that there is a positive correlation between corporate social and environmental performance and corporate financial performance. However, if a company is keeping the ESG rating high and ways of acting socially responsible, it may cause extra expenditures to the company which has raised a discussion about the purpose of the firm existing.

Good CSR reputation might have long lasting effects. Yoon et al. (2006) show that there may be differences in companies' image operating in same, negatively associated industries in terms of reputation. Godfrey et al. (2009) find in his paper that it is possible for companies to collect goodwill by conducting CSR that mitigates negative reactions towards the company if something negative occurs. Firms with no moral reputation capital accumulated from CSR do not have this alleviating buffer (Godfrey et al., 2009). Similarly, Capelle-Blanchard and Petit (2019) show, companies may collect CSR goodwill on the markets which might be an incentive for companies to present them as responsible as possible. For instance, companies in financial sector might want to

contribute extensively to improve their CSR reputation and image on markets as industry of financial companies in general, can be considered as an industry with room for possible improvements regarding ESG. Also, for instance oil and energy companies might brand themselves as renewable energy companies even if this is not their core business are (Aras & Crowther, 2009).

However, it can not be concluded that negative behavior would always lead to reputational damages. For instance, Baudot, Johnson, Roberts and Roberts (2019) find no major connection between tax behavior of the company and reputation. As presented earlier, Aouadi and Marsat (2018) find in their paper ESG controversies to have a significant positive effect on the market value of firms. However, firm's corporate sustainable profitability (CSP) score and controversies interact, the direct effect on firm value is no longer found (Aouadi & Marsat, 2018). Between CSP score and ESG controversies, there seems to be a significant and positive relationship (Aouadi & Marsat, 2018). Measuring with a forward-looking indicator of firm performance, Tobin's Q, CSP score affects the value of stock prices only in case of firms that are highly followed, located in countries with stronger press freedom, often searched on the Internet, drawing more attention among analysts, and have an improved corporate social reputation (Aouadi & Marsat, 2018).

Society's moral standards are not met along with this phenomenon, as markets have no internal intention to act responsibly and fulfil moral demands (Bénabou & Tirole, 2010). One point of view suggests that responsibility in business is reflecting just the managers' preferences and identifies an agency problem (Masulis & Reza 2015). Opposite arguments are claiming that operating responsibly builds trust in brands and creates reputational capital to stakeholders, that may produce a long-term advantage. (Bénabou & Tirole, 2010). Reputational capital is one reason why firms are using substantial resources on CSR and keeping their reputation in terms of responsibility satisfied (Foote, Gaffney, Evans 2010). Overall, corporations can no longer ignore sustainable environmental, social and governmental points of view (Foote et al., 2010).

2.4 Stock market reactions to new information

As markets and stock prices are prone to react to all hints of possible changes, new and published information about ESG issues should be reflected promptly in the share prices as the price adjusts accordingly. According to efficient market hypothesis, the market is pricing assets always correctly, yet empirical evidence exists that efficiency of all markets and stocks is not achieved (Fama, Fisher, Jensen & Roll 1969). For example, before a stock split, the share usually performs higher or lower returns, depending on if the forthcoming news is positive or negative long before the information or even news rumours are announced (Fama et al., 1969). After announcing information, markets seem to reward positive progress in responsibility as investors anticipate more substantial cash flows in the future (Shane & Spicer, 1983; Cordeiro & Tewari, 2015).

When considering the market's reactions to new information published, previous academic literature shows markets being influenced by psychological biases and seem not to act according to efficient market hypothesis. For instance, Capelle-Blanchard and Petit (2019) and Klassen and Mclaughlin (1996) find results that shareholders and stock prices react easier to negative news. Capelle-Blanchard and Petit's (2019) results measured as cumulative average abnormal returns around an ESG event are presented in figure 2 below. Solomon (2012) finds that positive news have wider coverage compared with negative news, suggesting that positive news are also financially more significant. Krueger (2015) finds likewise in his research that there are differences in the market reactions depending on whether the new information is positive or negative. Yet, for example McWilliams and Siegel (2001) find a neutral relation between CSR and market value and Byun and Oh (2018) argue that any published CSR activities have a positive effect on the market value. Thus, based on previous academic literature, an unambiguous agreement of what kind of relation there is between CSR and market value cannot be stated. However, new information – positive or negative – seems to affect stock prices differently as negative news seem to impact stock prices more substantially than the positive news.

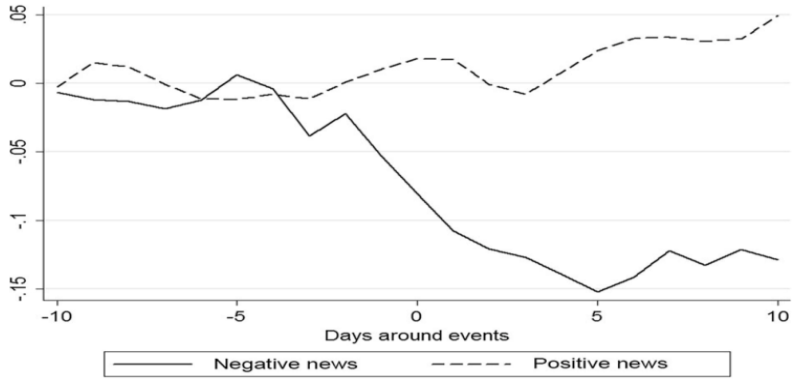

Figure 2. Cumulative average abnormal returns around publication of an ESG event (Capelle-Blanchard & Petit, 2019).

As there are masses of information available, it has been researched if there are differences in the reactions of the stock prices depending on the source of information. Byun and Oh (2018) find evidence that only the publisher might affect the reaction and that news published in major U.S. newspapers about firms' CSR activities are increasing the value of shareholders significantly**.** Similarly, Xu, Zeng and Tam (2012) review the differences in market prices depending on the source and show likewise that markets experience severer reactions when the disclosing source is media. After New York Times publishing a breakthrough in curing cancer by a company named EntreMed, news made the company's stock price to multiply in the morning after publishing the news (Huberman & Regev, 2001). However, the same news was released by several other sources five months earlier, suggesting only the source and coverage to cause such reaction on the stock price (Huberman & Regev, 2001). Shareholders could be expected to be most responsive to a neutral source of publishing information (Capelle-Blanchard & Petit, 2019). In other words, the source of the new information seems to influence the market reaction. Moreover, according to efficient market hypothesis, markets should reflect all available information and only unpredictable and previously unknown information regardless of the source should impact markets.

Information about companies' social practices may not be distributed to stakeholders equally. This may cause critical differences among the parties as information may not reach all stakeholders similarly or it might be difficult to evaluate social performance of

firms (Doh et al., 2010). Asymmetric information of socially responsible actions can be mitigated by several parties. Often information is published by companies themselves or it can be published for instance by media or an other intermediary (Doh et al., 2010). Large companies typically publish CSR reports annually and hence, attempt to disclose their done CSR actions. Doh et al. (2010) note that a few stakeholders might also interpret such information disclosed by the company itself biased, as it is processed also by company's senior management. According to Feddersen and Gilligan (2001) this prejudice is mitigated by activists and non-governmental organizations as the information can be trusted more on which companies to perceive as socially responsible.

Several factors are influencing market reactions when new information emerge. A study performed by Reptrak (2022), shows that the public's perception of companies ESG efforts are not in line with companies actual ESG efforts in over 90% of the cases. This emphasizes the importance of communication. Furthermore, when planning communication, there is multiple factors to be considered. For example, Capelle-Blanchard and Petit (2019) find the tone and verbal output of ESG disclosures to be one affecting factor in the market reaction. Krueger (2015) presents that the reactions of investors are more radical if the CSR news includes strong economic or legal information. Moreover, the diffusion speed of the information has a significant role in the stock price reaction (Chen & Lu, 2017). Additionally, when evaluating returns, Nofsinger and Varma (2014) find that whether markets are in a crisis period or a non-crisis period, the market situation eventually impacts the returns in the long run. Thus, market reaction is influenced by several factor that might not all be in control of the firm. Eventually, in addition to done actions, communication seems essential and is something the company can influence but might also be difficult to disclose in such way that desired market reactions are achieved.

Recently, media has diversified as information spreads out fast and direct interactions between people have grown. Likewise, other media forms, for instance, social media platforms comprise a clear channel to influence the markets. In addition, different media

sources are supporting each other. For instance, Luo et al. (2013) show in their study that consumer interactions are one key factor in building market value. Yu, Duan and Cao (2013) find similarly that companies' short-term performance is highly dependent on both conventional media, such as major newspapers and business magazines, as well as on Twitter and other social media outlets. Yet, when social media and conventional media, are compared, social media shows a stronger relationship to the stock's performance than conventional media (Yu, Duan & Cao, 2013). Consumer interactions on social media related to companies' responsibility may cause even drastic stock price changes. An example of such incident spreading on social media was when Italian fashion brand Moncler's scandal caused a 6% decrease of market value, triggered by masses of negative tweets after a video of geese mistreated trended in media (Capelle-Blanchard & Petit, 2019). These are examples of the diversity of current media channels when considering media as a variable for the stock price changes.

A substantial argument in the value creation for shareholders is the stakeholders' awareness about the performed CSR investments (Byun & Oh, 2018). Furthermore, Cahan et al. (2015) show that overall media coverage is more beneficial for companies investing in CSR encouraging companies to report about it. However, as firms have own incentives to present information about themselves as politely as possible, people and stock markets tend to react more easily to external and independent sources presenting new CSR information (McWilliams & Siegel, 2001; Schuler & Cording, 2006). Capelle-Blanchard and Petit (2019) find similarly market to be more responsive to ESG news presented by media than to the information coming from alternative sources such as the company itself or the information to be coming from NGO's publications. Market reaction difference between two sources is presented in Figure 3 below where seems to be a discernible difference before and after publishing new information. News presented in media are drawing attention majorly as news in media are more easily approachable. Conversely, Demers and Vega (2010) show that news coming from media are demanding to process and take more time to be incorporated in the stock prices.

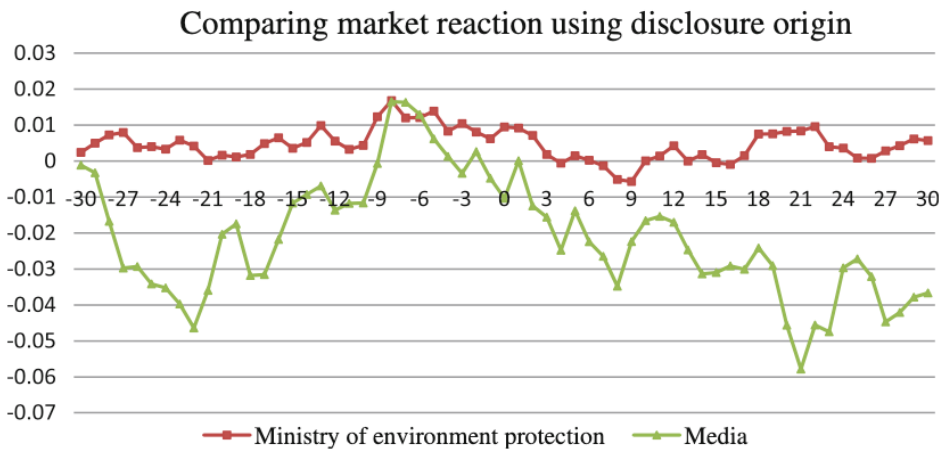

Figure 3. Comparison of market reaction differences using disclosure origin as a factor (Xu, Zeng & Tam, 2012).

Even though the news coverage about ESG has increased, it may not guarantee the news to contain a significant effect on the stock prices (Capelle-Blanchard & Petit, 2019). News related to ESG are regarded as so-called soft news (Capelle-Blanchard & Petit, 2019). As the soft news are easily approachable for everyone, in this manner, soft news reach a remarkable audience (Demers & Vega, 2010). On the contrary, according to Demers and Vega (2010) when considering from investors point of view, it takes longer for the soft news to be reflected in the prices of shares compared with hard information for example obtained from annual statements. Results exist due to soft information not to be as easily processable for all the parties of the market (Demers & Vega, 2010). However, Demers and Vega (2010) find that if the business models of companies are complex, hard earnings information is not interpreted by the market as well and market appears to react more to the additional soft information presented.

Media coverage about the companies' CSR related activities is in a crucial role when investments in CSR are wanted to produce future financial performance. Byun and Oh (2018) find that the CSR activities and news show a concentrated favourable effect on shareholder value if the activities are likely to generate benefits for the stakeholders of the company. Consequently, CSR activities focusing on a wider public, are not as significant factors on firm value. Cahan et al. (2015) show that performing positively in

CSR realizes higher firm value and lower costs of capital only if media coverage is favourable for the firm.

As incidents and scandals spread out in media are easily rememberable and may cause permanent harm for the image of the company, likewise, the lack of negative publicity can help to create value for the company. Media appears to be a significant component in the process of forming a reputation for companies (Cahan et al., 2015). Orlitzky et al. (2003) find the reputation of a company to be a remarkable factor when examining the relationship between a corporation's social and environmental performance and corporate financial performance. Capelle-Blanchard and Petit (2019) present similar results, finding that the reputation of a particular sector can moderate the negative reaction of stock market to announcements significantly. Result is found if companies are compared on a sectoral level, but not when companies are compared in the same industry (Capelle-Blanchard & Petit, 2019). In contrast, Byun and Oh (2018) show that a company's CSR investments may not always complement the reputational capital among stakeholders. Krueger (2015) points out that creating reputational capital for the company may result from the corporate's managers' objective as creating reputational capital for themselves as sustainable leaders and not fulfilling the targets of the company and the shareholders. To sum up, markets can remember past events and incidents, whether they have been positive or negative, and they might affect the future market reactions.

It might be difficult for investors and managers to distinguish, if companies are actually engaging in published CSR actions (Doh et al., 2010). In addition to external agencies' formed ESG scores, investors can use in the investment process reports about corporate social responsibility offered by the companies (Yoon, Gürhan-Canli and Schwarz, 2006). The form of CSR reports are not standardized, making it difficult to conduct comparing between companies. Drempetic et al. (2019) show that the available resources provide an advantage for large companies to report about ESG and thus puts companies in an unequal position. However, when stakeholders evaluate companies' motives to engage

in CSR Yoon et al., (2006) present that the in the optimal case, the company commits firmly in the responsible project itself and uses only a few resources to advertise about the actions completed. Thus, many projects might stay unknown, but the stakeholders are assured about the actual motives of the campaign (Yoon et al., 2006). Advertising expenditures are direct intermediaries for consumers' awareness about CSR contributions (Yoon et al., 2006). Still, only the fact that the information is coming from the company itself might have a negative effect on the company and especially in case, if the information would benefit the company (Yoon et al., 2006). In other words, firms can try to influence the direction of their image among stakeholders and through this, try to influence their stock price (Yoon et al., 2006).

Performing well in ESG related issues builds goodwill and markets tend to reward for good performance. Therefore, companies might deceivably highlight the done actions. Selective publishing of firms ESG issues is often referred to as greenwashing. Capelle-Blanchard and Petit (2019) find that firms themselves publish 16 times more positive news than negative news. However, it seems understandable as they also find that so-called greenwashing might actually guard companies when negative news come public (Capelle-Blanchard & Petit, 2019). Researchers show that companies that have more ESG communication, the lower the effect of negative news has on the company's market price (Capelle-Blanchard & Petit, 2019). Accordingly, Kim (2019) finds that if communication of CSR is done by the company itself with a self-endorsing tone, the impact on reputation is negative. Furthermore, if the communication has very high identification level with a company, the relation with reputation is positive (Kim, 2019).

Lyon and Maxwell (2011) note that greenwashing by promoting accomplishments in environmental issues and in reality not making sufficiently effort, might eventually result in aggressive negative attention among activists. In other words, if environmental reports are published, companies must sincerely engage with disclosed investments. Furthermore, Bénabou and Tirole (2010) present that CSR may support projects or

organizations' intentions that benefit the managers or board members of the company suggesting CSR to only be an emerging problem caused by parties inside the company.

It might be difficult for investors to distinguish the differences between the disclosed social practices and the actually done responsible actions. Thus, markets mostly depend on the institutional estimations of companies' socially responsible actions and based on this information, constitute evaluation of reputation (Doh et al., 2010). This indicates the major role of institutions in forming a general overview and hence, company reputations. Useful for noting is that for instance NGOs reveal almost 50% more negative than positive ESG news which makes them a significant party for presenting critics towards companies (Capelle-Blanchard & Petit, 2019). CSR reputation is something that is heavily influenced by previous CSR actions. Miller et al. (2020) find that gaining positive reputation reminds markets of company's positive ESG behavior and provided goodwill. However, when losing a negative reputation, company reminisces of previous negative actions (Miller et al., 2020). This thesis attempts to find answer to these questions.

3 Theoretical framework

This chapter introduces the basic theoretical models commonly used in academic literature which are relevant in order to analyze new information and its stock price reaction. The following subchapters introduce the efficient market hypothesis and models how to understand security's price assessment. Lastly basics of event study approach are presented.

3.1 Efficient market hypothesis

Considering the impact of a specific event on a security's price, information should be reflected in the price (Bodie, Kane & Marcus, 2018). In the fifties, Kendall (1953) was first to identify that stock prices are not predictable in advance from their past performance and that the stock prices are developing randomly. This so-called random walk is present in an efficient market. On markets where prices of stocks are rational, the prices reflect all available information and only new, unpredictable information can change the price of a stock (Bodie et al., 2018). As new information comes randomly to markets and the stock market already reflects all possible available information, the market is efficient (Bodie et al., 2018). This feature of markets is referred to as the efficient market hypothesis (Bodie et al., 2018).

Fama (1970) defined an ideal market as when prices of stocks would always provide accurate signals for allocating resources effectively. In reality, all markets and stocks are not efficiently priced, and investors can exploit inefficiencies to beat the market (Bodie et al., 2018). For example, a few market participants can benefit from noticing arbitrage opportunities and quickly balance the momentary inefficiency of the market. Still, excess profits should always be compared with the taken risks (Bodie et al., 2018). It also takes time for the market to settle the stock price on a correct level. The faster the price adjusts, the more efficient the market is (Bodie et al., 2018). If markets would represent all available relative information, for example analysts would also be unnecessary, since the market price would always be the correct price of the share (Bodie et al., 2018). In reality,

analysts are a significant part of the markets and are helping markets actually to include all information in the prices of the shares. However, investors can find shares priced with different degree of efficiency. For example, stock markets of emerging areas may have not been analyzed as thoroughly and are probably not priced as efficiently as highly followed markets (Bodie et al., 2018).

In academic literature, efficient market hypothesis (EMH) is discussed and found to have various perspectives. For example, Grossman and Stiglitz (1980) point out a contradictory view of the efficient market hypothesis. If markets would be completely efficient, information is reflected immediately in the stock price, and professionals would not spend resources on searching new information since the incentive would be too low (Grossman & Stiglitz, 1980). Malkiel (2003) also argues in his paper against the efficient market hypothesis. He indicates that as all market participants are not rational and public opinions of investors are not always right, mispricing of stocks occur and predictable patterns in returns that persist for short periods may emerge (Malkiel 2003).

In reality, the information is not coming always completely randomly to markets. For instance, macroeconomic news announcements in the United Stated and other scheduled information are predictably expected to be announced at a certain time. Nikkinen, Sahlström and Äijö (2007) explain in their paper that calendar anomalies such as turn-of-the-month and intraday anomaly are causing different intramonth risk and return patterns. Still, the content of the expected information is the unpredictable part of the information coming to markets (Nikkinen et al., 2007).

Edmans (2011) finds in his study that the market cannot price intangible assets in the stock valuations. Only commonly valued tangibles such as earnings announcements are incorporated in the stock prices (Edmans, 2011). It is challenging for markets to value the investments to intangible assets even if trustworthy information is distributed (Edmans, 2011). When considering responsibility issues, socially responsible investments are often regarded as long-term investments, and Edmans (2011) suggests

that investors are not valuing long-run investments. Results are supported by managerial myopia theories, predicting corporate managers to provide asymmetrical information about short-term decisions cause underinvesting in long-term projects (Holden & Lundstrum, 2009).

3.1.1 Three forms of efficient market hypothesis

Fama (1970) distinguished three different versions of EMH: weak form, semi-strong-form and strong-form of the efficient market hypothesis. The three forms of efficient market hypothesis are being analyzed with empirical tests. All forms of the efficient market hypothesis are expecting markets to reflect available information (Fama, 1970).

The weak form hypothesis argues that the market prices include all information interpreted from previous trading information and past data such as stock prices and trading volume (Fama, 1970). Therefore, using technical analysis as part of investment decisions is useless under the weak-form hypothesis of market efficiency (Bodie et al., 2018). The weak form can be tested by trying to find patterns in stock returns (Bodie et al., 2018). The weak form was tested by Kendall as he tried to find patterns in the past stock prices in the '50s. Yet, he failed and excogitated that the price movements are random due to efficient market (Kendall, 1953). Furthermore, Fama and French in 1988 and Campbell and Shiller in 1988 as well as several other researchers find controversial evidence for predicting the future market returns from securities' past performance (Fama & French, 1988; Campbell & Shiller, 1988). Jegadeesh and Titman (1993) find momentum effect anomaly suggesting a specific asset's positive or negative performance to continue over time (Jegadeesh & Titman, 1993). If the stock prices would not react immediately to widely known negative or positive signals, market participants could act accordingly, as data from the past can be acquired effortlessly (Bodie et al., 2018).

The hypothesis of semi-strong form states that the prices of securities of a semi-strong market include all publicly available information (Fama, 1970; Fama et al., 1969). This

includes for example data from the past, patents, annual reports and stock splits. Semi-strong form of market efficiency tests are examining how quickly the security price is reflecting the publicly announced information (Fama, 1970; Fama et al., 1969). Fama (1991) later proposed to change the title semi-strong-form tests of the adjustment of prices to public announcements to more simple event studies. In other words, testing semi-strong form of market efficiency examines if the price reactions are efficient and reaction occurs immediately or are the markets not efficient when the price reaction is taking time (Fama 1970; Fama et al., 1969).

In case of a company's leaders or major stockholder is trading the company's own share voluminously, an outsider can raise a question, if the insiders know something that is not commonly recognized. Fama (1970) determines strong-form efficient markets as that they reflect all, also unpublished and the insider information. However, trading based on inside information is regulated and limited, in order to prevent company insiders from exploiting their positions (Bodie et al., 2018). Furthermore, markets are not expected to be strong-form efficient (Fama, 1970; Bodie et al., 2018). All the same, Jaffe (1974) finds in his study that stock prices tend to rise after insiders have bought the company's shares and tend to fall after insiders have sold the shares (Jaffe, 1974).

3.2 CAPM

Capital asset pricing model or CAPM is a widely used model for predicting the relationship between the risk of an asset and the expected return of the asset (Bodie et al., 2018). The model provides an estimated rate of returns for security (Bodie et al., 2018). Also, the model provides a basis for evaluating possible returns on securities with no trade history yet in the stock market (Bodie et al., 2018; Hull, 2015). In the '50s, Markowitz (1952) researched modern portfolio theory that was a foundation for later building up financial theories. Later, Sharpe (1964), Lintner (1965) and Mossin (1966) published papers about the pricing of assets and their valuation and eventually CAPM. Relationship between the asset's risk and return, the CAPM's formula is presented in equation below (Bodie et al., 2018; Hull 2015).

$$E(R) = R_F + \beta*(R_M - R_F) \quad (1)$$

E(R) is the expected return on an asset. Return on a risk-free investment, the systematic risk, is presented in the formula as R_F that, as mentioned earlier, is market risk and cannot be diversified away (Hull, 2015). This is why CAPM considers parameter measuring systematic risk, beta (β). It measures the sensitivity of returns between an asset and the returns of the market (Hull, 2015). R_M notes the return of the market portfolio. Usually, a well-diversified stock index, such as S&P 500, is supposed as a market portfolio (Hull, 2015).

According to CAPM, returns should only be dependent on systematic risk, since the nonsystematic risk is possible to diversify away from the portfolio (Bodie et al., 2018). For higher risk in a portfolio, investors demand higher expected returns. However, the model is not precise estimator of actual individual stock returns and provides better results when it is used to estimate returns on a diversified portfolio (Bodie et al., 2018). In reality, there are several other factors explaining returns as well, limiting the interpreting the results provided by CAPM only theoretical (Bodie et al., 2018). For example, the liquidity of the security is affecting security's value and returns. Furthermore, to examine a market portfolio, including all possible risky assets is significantly challenging. In addition, CAPM cannot be trusted completely, since it is based on several assumptions, that needs to be taken into account when using the model (Bodie et al., 2018). The assumptions of CAPM are presented in table 2 below. Still, as mentioned earlier, CAPM simplified Markowitz' modern portfolio theory and was a foundation for all modern financial economic theories (Bodie et al., 2018).

Individual behaviour:
1. Investors are rational, using Markowitz' portfolio theory and consequently optimize only mean-variance
2. All Investors' time-horizon for investments is identical
3. Investors use homogenous expectations and all relevant information is available. All investors analyze securities in the same way
Market structure:
4. All assets available are publicly traded and can be in investors' portfolios
5. Investors are borrowing and lending at a common risk-free rate. Also, short positions can be taken
6. In the markets, there are no taxes that would normally affect investors' behaviour
7. Transaction costs are ignored as well in the CAPM

Table 4. The assumptions of CAPM (Bodie et al., 2018; Hull, 2015).

3.3 APT

Arbitrage pricing theory (APT) is likewise the CAPM predicting the returns of the stock market by combining expected returns and the risks. APT was developed and first introduced by Stephen Ross in 1976. APT is relying on three suppositions about investors and the markets (Ross, 1976). To start with, returns of a security can be explained with a factor model (Bodie et al., 2018; Ross, 1976). The second assumption is that investors can diversify the unsystematic risk away as there are sufficiently securities available in the markets (Bodie et al., 2018; Ross, 1976). Thirdly, APT supposes that markets are effective and there are no arbitrage opportunities available (Bodie et al., 2018; Ross, 1976).

If markets are not completely effective and securities are mispriced, the arbitrage situation can be exploited to gain risk-free returns (Bodie et al., 2018). Conversely, as

markets are prone to equilibrate, arbitrages do not exist for a long time and widescale availing is not possible (Bodie et al., 2018; Nikkinen, Rothovius, Sahlström, 2002). Accordingly, the law of one price states that if two assets have an exact same economic profile, they must be priced equivalently (Nikkinen et al., 2002). Still, as arbitrages may exist and APT supposes that these situations will be exploited since the risk-free profits are utilized among investors (Bodie et al., 2018; Nikkinen et al., 2002).

Compared with CAPM, arbitrage pricing theory does not determine the factors of the model in advance (Bodie et al., 2018). As a matter of fact, there are several factors affecting stock returns. Multifactor models are observing both macroeconomic and firm-specific events and are used in risk management applications (Bodie et al., 2018; Brealey, Myers, Allen, 2014). For example, inflation rates and interest rate fluctuations are significant factors affecting the risk of a stock and therefore, also affect its expected returns (Brealey et al., 2014). In other words, APT is considering all the risks that the particular stock is facing. As mentioned, the model also recognizes the firm-specific variable (Bodie et al., 2018; Brealey et al., 2014). The formula of the common multifactor model is presented below in equation (2).

$$R_i = E(R_i) + \beta_{i1}F_1 + \beta_{i2}F_2 + \ldots + e_i \qquad (2)$$

$E(R_i)$ notes the expected excess return on stock i. β_i presents the so-called factor-beta of stock i, the sensitivity for this factor (Bodie et al., 2018; Brealey et al., 2014). F_n notes an actual macroeconomic factor and e_i is presenting the nonsystematic component of return, unique for particular companies (Bodie et al., 2018; Brealey et al., 2014).

APT is not the model for pricing single securities but suits better for applying on well-diversified portfolios (Bodie et al., 2018). Furthermore, for APT, a diversified index portfolio is sufficient, compared with CAPM's demand for a market portfolio including all possible assets (Bodie et al., 2018). If arbitrage opportunities are excluded, a well-diversified portfolio's expected excess return is corresponding to its beta (Bodie et al.,

2018). Yet, according to APT, all securities may not always be on the security market line (SML). Compared with CAPM, APT frees us from the supposition of investors being mean-variance optimizers (Bodie et al., 2018). APT also supposes that short-selling is possible, and as a result, the theory requires zero-net-investment (Bodie et al., 2018). However, as mentioned earlier, one of APT's assumption is that investors can diversify the unsystematic risk away. For systematic risk, a premium is required. After considering all this, the equation (3) for a well-diversified portfolio's expected return is described below (Bodie et al., 2018).

$$E(R_P) = \beta_P E(R_M) \qquad (3)$$

$E(R_P)$ presents expected excess return on portfolio P, B_p notes beta of the portfolio P and $E(R_M)$ displays the risk premium of the market index (Bodie et al., 2018).

3.4 Psychological review

There are several factors affecting the market price reaction that psychological literature can help to explain. When considering psychological evidence on the differences between positive and negative news, the anticipations of investors are affecting the actual stock price reaction to the new information. Psychological research also presents a behavioral concept negativity bias, outlining human behavior of emphasizing negative events, thoughts and information over positive ones (Rozin & Royzman, 2001; Peeters & Czapinski, 1990). Moreover, according to Bigne, Currás-Pérez and Alvarado-Herrera (2009), consumers tend to develop relationships with companies where they can psychologically define themselves as a member of that company. Consumers might associate companies' stereotypical norms as personal norms leading to for instance, positive CSR image, enhanced brand image and overall positive attitude toward the company (Bigne et al., 2009).

The complexity of companies considering CSR investments is likewise presented by Bénabou and Tirole (2010), who show that firms are suffering from short-term bias.

Finding suggests performance and objectives in the short-term to be weighed over the achievements in the long-term. Similarly, Krueger (2015) points out that for example, investments in environmental projects are often offering returns in long-run and may cause challenges in evaluating the advantages at the time of investing. As a result, long-term investments are not adequately rewarded, and stock price may decline on average (Krueger, 2015).

Recency bias suggests that all relevant information is considered, however recent events are weighed more than preceding events. Arnold, Collier, Leech and Sutton (2000) find decision making to be anchored to current beliefs which mentally slows down the shift to change mind when new information is published. Linking these findings to theme of this thesis, it can be supposed, if there are news being published shortly after earlier published news, the recency bias is expected to influence the stock price reaction. Furthermore, a shift to change company reputation can be perceived to be influenced by recency bias.

Negativity bias suggests for the tendency of weighing negative events over positive ones. This kind of negative effect given more emphasis compared to positive equivalent issue, has similarities with prospect theory presented by Kahneman and Tversky (1979). Rozin and Royzman (2001) find that negative events collect much more negativity than compared with positive events collecting positivity. Negativity bias might have an influence when companies' ESG reputation is compared. Rhee and Haunschild (2006) find in their study on U.S. markets, negativity bias effect to be stronger and market penalties being higher for companies with positive reputations. Negativity bias should be kept in mind when later looking at the results of this thesis.

4 Data

As the purpose of this thesis is to find if ESG reputation affects the price reaction when new ESG information is published, data for both the ESG reputation and the events are required. The following chapter introduces details about the data used in this thesis.

The new ESG information data for the study is collected by hand from online publications. As the pressure on companies to perform well on every part of ESG has risen, companies can be expected to publish news and improvements regarding sustainability issues. It should be noted that I use as the event date the day when news are spread widely and the news are published by the company or in the media, not the day the incidents actually occur.

The first step of collecting data is to define a timeframe from which the events are collected. As ESG related events are published regularly, the timeframe is between 2015 and 2020. During these six years, both positive and negative ESG related news are published sufficiently to form a set of data and perform an event study. When considering the publishing year, the dataset is skewed towards 2020. Skewness of the data corresponds to the trend of ESG news becoming more frequent in the media year by year (Capelle-Blanchard & Petit, 2019). The dataset of news events disclosed by publishing year and ESG categorization is illustrated below in table 4. Category “all” represents news specified to concern all three of the ESG categories.

	Postitive news	Negative news.	Proportion
2015	5	15	7,0%
2016	2	6	2,8%
2017	5	13	6,3%
2018	17	37	18,8%
2019	10	35	15,7%
2020	93	49	49,5%

Environmental	77	24	35,2%
Social	19	55	25,8%
Governance	13	40	18,5%
All	23	36	20,5%
Total	132	155	

Table 5. Distribution of published ESG events by year and their category.

The events are mostly collected from Financial Times, a widely distributed and well-known newspaper with sufficiently of readers to potentially influence market reactions. Financial Times also disclose information promptly, often on the same day as they occur. Major newspapers do not note a few events in the dataset despite being relevant factors in building the companies' ESG reputation and stock valuation. Typically, such news are published by companies themselves or a minor, ESG dedicated news source. As discussed previously in chapter 2.4., the media visibility factor plays a significant role in finding significant results (Cahan et al., 2015).

I defined companies under scrutiny as companies from the popular Standard & Poor's 500 index. The constituent companies have sufficient variation, and results can be generalized to represent a large-cap market. In addition, S&P 500 index companies have had sufficiently negative and positive ESG related events. For the historical stock prices, Yahoo Finance database is used. Furthermore, logarithmic returns are used to find the daily returns of the S&P500 index and the securities.

Companies can evolve in many parts of their operations. Serafeim and Yoon (2022) find in a recent study that company announcements about their ESG investments only affect stock values if the announcement made can be considered material for the company. Thus, this finding was acknowledged when collecting the data, and news not considered material was not collected. For instance, events like Bank of America announcing making

a broad solar power purchase agreement that cannot be considered directly related to the company's sector are discarded in event collection, despite it being related to ESG.

As the ESG issues of companies have risen, indices based on ESG principles have been launched. These ESG indices are rebalanced regularly based on recent ESG developments. Doh et al. (2010) find that good CSR reputation buffers price reaction when a company is announced to be deleted from the ESG index. However, companies with good CSR reputations are not rewarded as much as poor ESG performers if a responsibility index addition is announced (Doh et al., 2010). Furthermore, this implicates markets to compensate firms performing well in CSR and protect them in times of occurrence of negative events and encourages poor ESG performers to invest in CSR as markets reward for positive activities (Doh et al., 2010; Godfrey et al., 2009). As this thesis considers companies of S&P 500 index, thesis also covers company additions and deletions from the popular S&P 500 ESG index as a new information event. The S&P 500 ESG Index is a common benchmark index for sustainable index funds and thus, can be supposed to have high effects on global fund flows. S&P 500 ESG Index is an index formed from the companies of the regular S&P 500 but, in addition, considers sustainability topics while keeping the overall industry group weights similar to the benchmark index S&P 500 (S&P Dow Jones, 2021). Moreover, the S&P 500 ESG Index has over 8 per cent higher ESG score and 23 per cent higher ESG potential than the benchmark index S&P 500 (S&P Dow Jones, 2021). Thus, announcements of companies being deleted or added to the S&P 500 ESG are considered equal new information events as other news.

I split published news into two groups based on suggestions and findings of Graham et al. (2006). Firstly, a group involves ESG related news that are entirely unexpected for markets and can not be anticipated beforehand. The other group of news events are news that can be anticipated. Information published in a time fixed manner, is not as likely to cause strong reactions in price movements. Such information is analyzed and incorporated gradually, while stock price reactions might be more dramatic for markets

regarding unscheduled news (Graham et al., 2006). For instance, publishing investments as part of sustainability reports can be anticipated as the publishing date for the reports are usually known beforehand.

Furthermore, for instance, the announcement of adding Facebook to the S&P500 ESG index can be somewhat anticipated as they notably improved their corporate governance issues, which improved their S&P DJI ESG score. In addition, Facebook went through an industry reclassification that improved their performance meters relative to new industry peers (Naqvi, 2020). Hence, announcing the addition to the popular ESG index can not be considered an absolute surprise for markets resulting in potential for lower market reaction after publishing the news.

In this thesis, ESG score provided by Refinitiv (previously Thomson Reuters Asset4), is working as a proxy for the company ESG reputation. In other words, a company with a relatively high ESG score is supposed to have better ESG reputation than a company with a low ESG score, respectively. Turban and Greening (1996) also show the vital link between score metrics and reputation. Furthermore, Quintana-García et al. (2021) use scoring provided by Refinitiv as their proxy for reputation. Third-party calculated ESG scoring systems are widely used in academic literature (Quintana-García et al., 2021; Tetrault Sirsly & Levina, 2019; Cheng, Ioannou & Serafeim, 2014). Further discussion about ESG scores is discussed in chapter 2.1.1. The score is calculated by considering a wide range of factors which take all dimensions of ESG in account. The score considers over 630 ESG measures from all three dimensions collected from companies' public disclosures, and the score is annually updated (Refinitiv, 2022). This thesis considers each year separately and thus considers if companies improve their ESG actions. The subcategories and their weights in ESG score calculation is presented in figure 4 below.

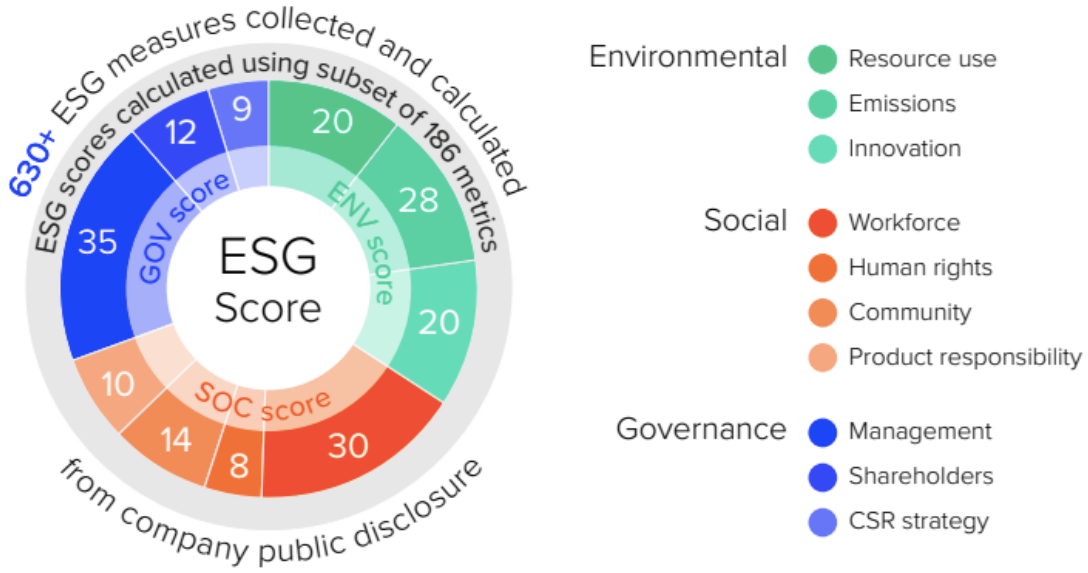

Figure 4. Refinitiv ESG score measures (Refinitiv, 2022).

Companies from S&P 500 are distributed to eleven different sectors according to the Global Industry Classification Standard (GICS). CSR reputation of each GICS sector is calculated by taking the average of each company's ESG score operating in that particular sector. Then, considering each year separately, I divide the eleven GICS sectors to three categories. First, the four worst ESG performer sectors are presupposed to be sectors with a negative ESG reputation. The next three sectors are considered as sectors with neutral ESG reputation. Lastly, the four best ESG rated sectors are supposed to have good ESG reputation. The table below lists the distribution of sample events based on the GICS sector and their proportions of the total sample events.

	Postitive	Negative	Total	Proportion
Industrials	11	9	20	7,0%
Health Care	12	17	29	10,1%
Information Technology	14	14	28	9,8%
Communication Services	6	18	24	8,4%
Consumer Discretionary	22	19	41	14,3%
Utilities	8	10	18	6,3%
Financials	27	39	66	23,0%
Materials	6	3	9	3,1%
Real Estate	2	2	4	1,4%
Consumer Staples	14	19	33	11,5%
Energy	10	5	15	5,2%
Total	132	155	287	

Table 6. GICS sector distribution of the news articles collected

5 Methodology

As the research questions review differences in stock price movement patterns, an event study approach is necessary to measure a particular event's impact on a stock. With the help of event studies, it is tested whether semi-strong rules of the efficient market hypothesis are met. In addition, with event studies, price change rapidity is examined and explored if it is immediate or takes time to incorporate into prices.

Campbell, Lo and MacKinlay (1997) present event studies to include seven steps. The first step is called an event window, implying defining the event examined and the period of time when stock price is examined in respect of the event. Secondly, according to Campbell et al. (1997), selection criteria are defined. For instance, the criteria might examine only firms listed on the New York Stock Exchange. As securities hold expected return, all additional return is called abnormal return, which is needed on assessing an event's impact. Expected return can be estimated as the return that would be realised if the event did not occur. Equation 5 above presents the calculation of abnormal return. Fourth event study's step is to determine the estimation window (Campbell et al., 1997). Typically, this is a specific time period before the actual event window. As now parameter estimates are set for testing and calculating, null-hypotheses should be created to test abnormal returns of each firm (Campbell et al., 1997). This step is called testing procedure. The sixth step is to present the empirical results and preferably run diagnostics on the results (Campbell et al., 1997). A review of the results is favourable, especially when evaluating the reliability of the sample if the sample is relatively insignificant. The last step is to interpret and conclude the findings (Campbell et al., 1997). Optimally results expound events' influence on security's price.

Scrutinizing an event's impact starts with considering the price change difference if the particular event would not occur. These normal returns can be estimated, for instance, with the help of CAPM or Fama-French three-factor model. I use the so-called market model which is presented below in equation 4 (Benninga & Czaczkes, 2014).

$$r_{it} = \alpha_i + \beta_i r_{Mt} \quad (4)$$

Here r_{it} presents the stock return on a given period t. Factor α_i is the intercept term and the β_i measures the sensitivity of stock i compared to market portfolio return. Coefficient α_i and β_i are estimated by running an ordinary least-square regression over the estimation period. Factor r_{Mt} is the market return on the given period t.

After finding the ordinary return for the stock before the event and considering the EMH to hold, it is possible to estimate the effect of the new information on the security price. The abnormal return inside the event window can be supposed to have caused the change in market value of the stock. It is assumed the event to be exogenous from the ordinary price fluctuations and thus, affected security's price. Abnormal return caused by an event (e_t) can be estimated with help of equation 5 (Bodie et al., 2018; Benninga & Czaczkes, 2014; MacKinlay, 1997).

$$e_t = r_t - (a + br_{Mt}) \quad (5)$$

r_t in the equation presents the stock return, during a given period t. The average rate of return the stock would realize in a period with a zero market return is noted with a in the equation. b is measuring the sensitivity to the market return. Finally, r_{Mt} is the market's rate of return on the given period t.

Before announcing a certain event, leakage of information may occur, implying a minor number of investors to know the forthcoming information before the official announcement is published (Bodie et al., 2018). Due to leakage and rumours around, the stock price may slightly start to react before publicizing the information (Bodie et al., 2018). According to efficient market hypothesis, after giving out the new information, the price should not anymore change as it immediately reflects the content of the announcement (MacKinlay, 1997). If leakage occur, abnormal returns are not precise measures for evaluating the impact of the new information. Cumulative abnormal

returns (CAR) are calculated to find more reliable results. Cumulative abnormal return represents a sum of all abnormal returns in the period that the market might be influenced by the new information (Benninga & Czaczkes, 2014). The equation for cumulative abnormal returns is presented below.

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

The time period between τ_1 and τ_2 is the so-called CAR window. Thus, the cumulative abnormal return in the CAR window is represented by $CAR_i(\tau_1, \tau_2)$ and it is calculated by the sum of abnormal returns in the CAR window (MacKinlay, 1997).

As Campbell et al. (1997) state, the fourth step of performing an event study is to determine an estimation window for calculating the normal return of the stock under evaluation. I use 250 days as my estimation window. However, academic literature uses also other lengths of estimation windows as its length is not comprehensively determined (Benninga & Czaczkes, 2014). This period expresses the normal price movement of the stock and is sufficiently long period to evaluate the natural price behaviour. Furthermore, in such long window there is other company related events occurring as well. However, I suppose these other events not as material for the event under scrutiny and comprise all other events as noise and normal daily operation (Benninga & Czaczkes, 2014). Estimation and event window are visualized below.

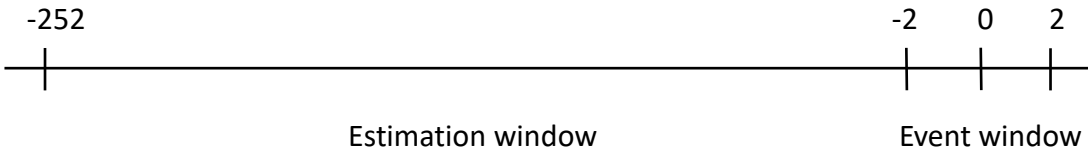

Figure 5. Visualization of 250 day estimation window and event window of -2; +2.

An event in this thesis is defined by the point of time when new ESG related information comes public. I use multiple event windows in this thesis in order to find out the details

behind the market movements. The event window usually starts already before the actual event because thus, it is possible to investigate for possible leakages of information (Benninga & Czaczkes, 2014).

Next, as Campbell et al. (1997) suggest, abnormal returns are calculated and their statistical significance is tested in order to draw conclusions for possibilities to reject null-hypothesis. In this paper a t-test is performed in order to find the significance on multiple confidence intervals. When several confidence intervals are tested, it can be concluded how significant the results are statistically. If significant results appear, it indicates that the abnormal return is statistically significantly different from zero. In this instance, the null hypothesis can be rejected.

In case sample includes data, from multiple companies, a metric of average abnormal return (AAR) is counted and used (MacKinlay, 1997). Average abnormal returns are calculated for each day of the event window by taking the arithmetic average of each security's abnormal return. The formula for average abnormal returns is presented below.

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \qquad (7)$$

In order to find the total effect of all securities in the whole event window, cumulative average abnormal returns (CAAR) is calculated (MacKinlay, 1997). In equation below, $CAAR_i(\tau_1, \tau_2)$ states the cumulative average abnormal return between time periods τ_1 and τ_2. CAAR is calculated by taking the arithmetic average of all cumulative abnormal returns (MacKinlay, 1997).

$$CAAR_i(\tau_1, \tau_2) = \frac{1}{N}\sum_{i=1}^{N} CAR_{it} \qquad (8)$$

Another challenge when measuring the impact of certain event's consequences on stock price might be caused by other events published prior to the examined event. If

confounding events would occur, such events may be discarded to gain reliable results of particular event's consequences (Baker, Derfler-Rozin, Pitesa & Johnson, 2019).

When companies publish ESG information, the markets should first distinguish the difference between the announcement and the information that the markets already know before the announcement. If the markets are expecting severer news, the stock price should rise (Nikkinen et al., 2002). Foster, Olsen and Shevlin (1984) offer similar evidence as Fama et al. (1970) regarding cumulative abnormal returns in response to earnings announcements. Foster et al. (1984) present that the share price reacts long before and above all, after the actual announcement with negative or positive surprise in earnings. The positive correlation is affecting the share price, whether the surprise in the announcement was positive or negative (Foster et al., 1984). In other words, the direction of abnormal returns is the same, even after the actual announcement. A trend in share price after an announcement, so-called post-earnings announcement drift was first noticed by Ball and Brown in 1968, which Foster et al. (1984) confirmed and researched further (Foster et al., 1984; Ball & Brown 1968).

6 Empirical results

As responsibility is demanded in every sector, previous CSR-related events can be expected to affect future events. Reciprocally, the supposed market reaction for a company with a good reputation might be better as investors might be more confident about company's motives and long-run CSR goals. However, if a company already has committed to CSR, it might not possess as much room for development as companies not initiated sustainability projects.

Incidents in the past, like so-called dieselgate of Volkswagen Group, have substantially impacted the image and reputation of the company. Such events might influence the market's future reactions regarding company's ESG activities. It can be presumed that the market reaction after a positive ESG investment is not as influential after aggregating negative attention as the engagement may not ultimately convince markets of the company.

First, I look for the whole sample of events and see whether both positive and negative ESG news showed statistically significant changes in stock prices. The table below shows that positive events present no statistically significant results. In case of negative events, the cumulative abnormal return was negative and showed strong statistical significance. The whole sample consisted of 132 positive news and 155 negative news. The sample included companies with positive, neutral, and negative reputation.

Postitive news		Negative news	
$CAAR_{[-1; +1]}$	0,57%	$CAAR_{[- 1; +1]}$	-1,47%
	(0,434)		(0,000)***
$CAAR_{[-2; +2]}$	0,15%	$CAAR_{[-2; +2]}$	-1,11%
	(0,700)		(0,000)***
$CAAR_{[-5; +5]}$	0,67%	$CAAR_{[-5; +5]}$	-2,06%
	(0,235)		(0,003)***
$CAAR_{[-10; +10]}$	1,12%	$CAAR_{[-10; +10]}$	-0,75%
	(0,143)		(0,332)

T	CAAR [-2;+2]	T-statistic	P-value	CAAR [-2;+2]	T-statistic	P-value
-2	0,01%	0,04	0,96	0,21%	1,27	0,20
-1	0,12%	0,51	0,61	0,21%	0,92	0,36
0	0,20%	0,68	0,50	-1,04%	-3,71***	0,00
1	0,01%	0,02	0,99	-1,27%	-3,92***	0,00
2	0,15%	0,39	0,70	-1,11%	-3,06***	0,00
	N = 132			N = 155		

Table 7. Cumulative average abnormal returns for the whole sample.
Upper there is indicated cumulative average abnormal returns and their p-values on multiple event windows. Below there is a more detailed examination of the event window -2; +2. *,**,*** denote statistical significance at 10%, 5% and 1% level.

Empirical results for the complete dataset indicate that market prices react strongly negative to all negative news. The cumulative average abnormal returns of the different event windows are around negative one and two per cent. All CAARs are highly statistically significant, except when considering event window -10, 10. This window interestingly shows a non-significant result. When positive news comes to markets, a similar effect can not be observed when examining market reactions. Thus, negative news seems to mainly influence stock prices negatively and positive news do not affect market prices.

Secondly, I divide companies into three categories based on their industry ESG reputation: companies operating in sectors with positive, neutral and negative reputation. The goal is to find if there are differences between price reactions in companies operating in positively and negatively associated sectors. Hence, events for companies with neutral reputation are discarded. Results are presented below in table 8.

Companies opeating in sector with good reputation						
	Postitive news			Negative news		
T	$CAAR_{[-2;+2]}$	T-statistic	P-value	$CAAR_{[-2;+2]}$	T-statistic	P-value
-2	0,34%	1,20	0,23	-0,16%	-0,23	0,82
-1	0,64%	1,61	0,11	0,13%	0,18	0,86
0	0,80%	1,64	0,10	-0,49%	-0,69	0,49
1	1,00%	1,78*	0,07	-0,49%	-0,70	0,49
2	1,58%	2,53**	0,01	-1,09%	-1,55	0,12
		N = 42			N = 33	
$AAR_{[t=0]}$		T-statistic	P-value	$AAR_{[t=0]}$	T-statistic	P-value
0,16%		0,60	0,55	-0,61%	-0,87	0,38

Companies operating on a sector with poor reputation						
	Postitive news			Negative news		
T	$CAAR_{[-2;+2]}$	T-statistic	P-value	$CAAR_{[-2;+2]}$	T-statistic	P-value
-2	-0,06%	-0,22	0,83	0,35%	1,59	0,11
-1	0,24%	0,63	0,53	0,27%	0,87	0,39
0	0,37%	0,80	0,43	-1,23%	-3,20***	0,00
1	-0,13%	-0,24	0,81	-1,53%	-3,44***	0,00
2	-0,18%	-0,30	0,76	-1,04%	-2,09**	0,04
		N = 62			N = 70	
$AAR_{[t=0]}$		T-statistic	P-value	$AAR_{[t=0]}$	T-statistic	P-value
0,13%		0,48	0,63	-1,51%	-6,77***	0,00

Table 8. Cumulative average abnormal returns for companies with positive ESG sector reputation (upper table) and poor ESG sector reputation (below). *,**,*** denote statistical significance at 10%, 5% and 1% level. Two sided p-value is indicated on the right.

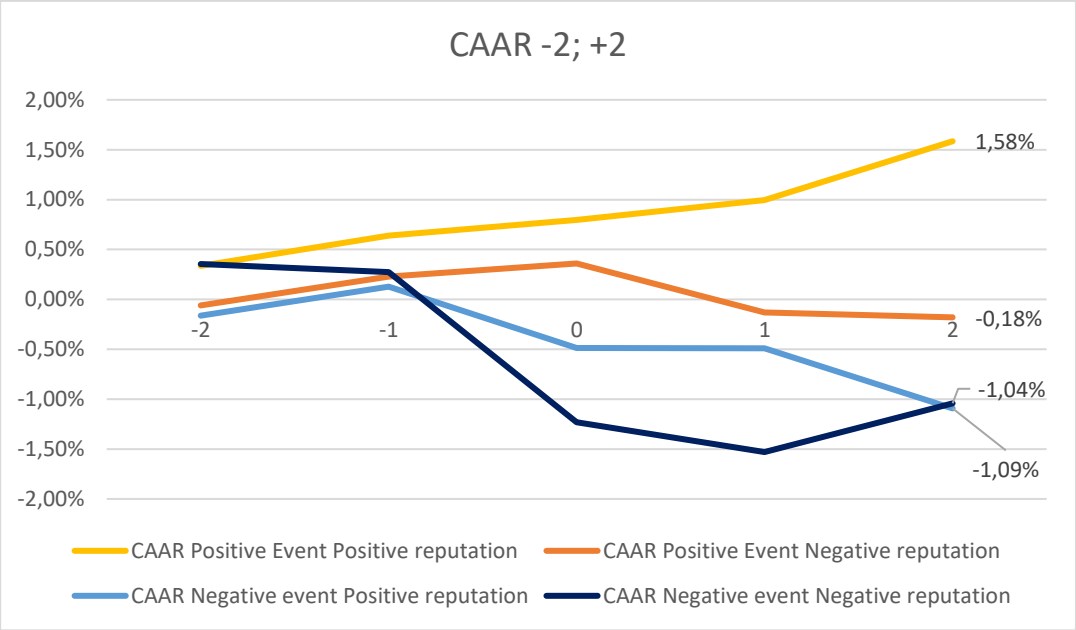

Figure 6. Visualization of 250 day estimation window and event window of -2; +2.

Findings show no immediate price reaction after announcing the positive news. However, a price reaction of 1% is found one day after the announcement and a statistically significant price reaction of 1,58% two days after the announcement if the involved company sector reputation was positive. Stock prices seem not to be affected by positive news if the sector's preceding reputation has been negative.

Empirical results present statistically significant negative price reaction of 1,23% immediately in case there was negative news published and the company reputation was poor. Cumulative average abnormal return remains negative and statistically significant on the following two days after the event day. Interestingly, if negative news was published and company reputation was good, statistically significant results were not found. Result indicates that a good company reputation indeed can protect the stock market reaction in case negative events are published.

Findings related to positive news published on markets are mostly in line with previous literature. For example, Capelle-Blanchard and Petit (2019) find that positive news does

not lead to abnormal returns and companies are not rewarded for their ESG positive announcements. Mutually, negative news influencing securities' market prices negatively is found previously in academic literature (e.g. Byun & Oh, 2018; Gunthorpe, 1997).

Next, I will look more closely at factors explaining market reactions. As discussed earlier, some news can be expected beforehand their actual announcement. For example, companies might publicly execute improvements before announcing results, or news might be scheduled for being published for instance, as part of their annual reports. Therefore, markets can expect something being announced, and according to the hypothesis, this should not influence the market price reaction. Mutually, if markets do not expect the news announced, it might lead to more extreme results (Graham et al., 2006). As hypothesized, market reaction should not be different if the news surprises the markets from the anticipated news. The findings of the surprise factor are presented below in table 9.

	Surprise for the markets		News somewhat anticipated	
	Postitive	Negative	Postitive	Negtive
$AAR_{[t=0]}$	0,48%	-1,70%	-0,06%	-0,56%
	(0,141)	(0,00)***	(0,756)	(0,097)*
$CAAR_{[-2; +2]}$	0,57%	-2,31%	0,01%	0,75%
	(0,434)	(0,00)***	(0,989)	(0,324)
N	33	94	99	61

Table 9. Difference described as average abnormal return and cumulative average abnormal return when published news surprised the markets and when the news could be somewhat anticipated to be coming.

Statistical significance (10%, 5% and 1%) is denoted with marks *,**, *** followed by two sided p-value shown in parentheses.

Results show that the surprise factor does seem to influence the reaction when the new information is negative. Negative and surprising ESG news causes an average abnormal return of -1,70% on the event day. Cumulative average abnormal return for the five day period is -2,31%. Both these are also statistically significant on a 1% confidence level. On the other hand, if new information is positive, unexpected news nor the anticipated news show statistically significant results. To sum up, the surprise effect does matter but only when the news are negative.

Industry responsibility in dimensions of ESG has been at the centre of this thesis. Next, I consider if there are differences in market reactions after new ESG information is published inside the industries. I take top quartile of companies inside every industry and see if their average abnormal returns from the event day and the cumulative average abnormal return differ from the bottom quartile of companies in all industries. Looking at top-ranked and lowest-ranked companies provides a more comprehensive overview of whether the companies separating positively or negatively from their industry peers can differentiate by measuring market price reaction when new info emerges. A comparison between all industries' top-quartile companies of bottom-quartile companies is conducted and described below.

Companies of all industries in the top quartile

	Postitive news			Negative news		
T	$CAAR_{[-2;+2]}$	T-statistic	P-value	$CAAR_{[-2;+2]}$	T-statistic	P-value
-2	-0,07%	-0,36	0,72	0,10%	-0,58	0,57
-1	0,16%	0,55	0,58	-0,12%	-0,46	0,64
0	0,03%	0,08	0,94	-1,32%	-4,30***	0,00
1	-0,25%	-0,62	0,53	-1,40%	-3,94***	0,00
2	-0,07%	-0,36	0,72	-1,46%	-3,67***	0,00
		N = 74			N = 71	
$AAR_{[t=0]}$		T-statistic	P-value	$AAR_{[t=0]}$	T-statistic	P-value
-0,13%		-0,65	0,52	-1,21%	-6,80***	0,00

Companies of all industries in the bottom quartile						
	Postitive news			Negative news		
T	CAAR $_{[-2;+2]}$	T-statistic	P-value	CAAR $_{[-2;+2]}$	T-statistic	P-value
-2	-0,06%	-0,22	0,83	0,90%	1,67	0,10
-1	0,24%	0,63	0,53	0,91%	1,19	0,23
0	0,37%	0,80	0,43	-2,45%	-2,62***	0,01
1	-0,13%	-0,24	0,81	-3,06%	-2,83***	0,00
2	-0,18%	-0,30	0,76	-2,05%	-1,75*	0,08
		N = 10			N = 20	
$AAR_{[t=0]}$		T-statistic	P-value	$AAR_{[t=0]}$	T-statistic	P-value
0,13%		0,48	0,63	-3,36%	-6,22***	0,00

Table 10. Cumulative average abnormal returns for companies in the upper ESG reputation quartile inside each industry (upper table) and for companies in the lower ESG reputation quartile inside each industry (lower table).

*,**,*** denote statistical significance at 10%, 5% and 1% level. Two sided p-value is indicated on the right.

As seen from the table above, inside industries differentiating seems to influence market reactions. If negative news are published, companies from every industry's top as well as bottom quartile, measured by ESG reputation, market reaction is statistically significant and negative. However, if positive news are published, both top and bottom quartile companies show no statistically significant cumulative average abnormal returns. Therefore, I focus more on the price reaction changes after negative news are published. If company reputation is negative compared to its peers, the cumulative average abnormal return two days after the event is -2,05%. Cumulative average abnormal return two days after the negative event for firms with higher peer ESG reputation is -1,46%. Difference between the well and poorly performing companies' on

a peer level is highlighted when considering the average abnormal return on the event day. Companies with good peer ESG reputation realize an average abnormal return of -1,21%, and companies with poor peer ESG reputation realize an average abnormal return of -3,36. A difference of over two per cent can be considered significant.

To sum up, if positive news are published, prices do not react to the news. This finding is equivalent to the finding of Capelle-Blanchard and Petit (2019). On the other hand, in case negative news are published, companies with either good or poor ESG reputation are both experiencing a decrease in stock price, though for the companies with poor ESG reputation, the reaction is more consequential.

6.1 Discussion

Previous literature has not yet been done extensively how specifically previous ESG reputation affects the stock market reaction when new ESG information comes public. However, how financial performance is affected by reputation, in general, has been studied before (e.g. Quintana-García et al., 2021; Doh et al, 2010; Miller et al., 2020). Still, findings are mostly in line with the related existing academic literature. For instance, Lins et al. (2017) find that a good reputation protects companies in times of crisis.

As the markets are not efficient, this thesis's findings can partly be explained by behavioural biases. Results presented a strong dependency for reacting more significantly to negative news. These findings are in line with negativity bias discussed in more detail in chapter 2.1.3. Furthermore, Bigne et al. (2009) stated that if consumers can psychologically define themselves as a member of company, there is formed a relationship between a company and consumers. As said, this might lead to better CSR image and reputation. Miller et al. (2020), argue that if recency bias and negativity bias are possibly affecting at the same time, these biases should offset each other at least to some extent. Recency bias should diminish the effect of possible previous negative contributions, thus reducing negativity bias (Miller et al., 2020).

MacKinlay (1997) notes that occasionally so-called post-event window, a period consisting of post-event days, is included in the estimation window data to estimate the normal return model. Including post-event days in estimation window can help to increase the robustness of the normal market return measure to gradual changes in its parameters (MacKinlay, 1997). However, in this study, estimation window considers 250 days prior to event window. One trading year consisting of 250 trading days is often considered sufficient to find the normal market return and is relatively used in academic studies (Benninga & Czaczkes, 2014).

Despite using the companies of the S&P500 index, it cannot be generalized unambiguously that market reactions would be similar in other markets as in the U.S. However, S&P500 is one of the most followed indexes globally and for instance, illiquidity risk is low and does not explain market reaction magnitudes. Therefore, these companies are under scrutiny in this thesis. Also, a constraint in this thesis is the limited time frame for collecting data. However, the time frame also includes many events from 2020, when markets were experiencing a crisis resulting from the pandemic. Limitations of data in this study, leave room for future studies with improved methods and dataset.

7 Conclusions

The objective of this thesis was to investigate how ESG news announcements affect market price reactions and how different factors influence this market price adjustment. The focus was on how ESG reputation affects the price adjustment after announcing ESG related news. Motivation for this thesis is the increasingly growing emphasis on every dimension of ESG and showing how companies' ESG investments pay off, also measured by market reaction. Positive findings would add another reason for companies to strive to operate more sustainably.

This study examined companies of Standard & Poor's popular S&P 500 index for events published between 2015 and 2020. The total sample of events consists of 132 positive ESG related news and 155 negative ESG related news collected by hand, mainly from major newspapers. Companies are considered from all 11 sectors divided by The Global Industry Classification Standard (GICS). An average ESG score for every GICS sector is then calculated for each year from the database provided by Refinitiv, which stands for industry and year specific ESG reputation.

Empirical results show that publishing ESG related news affects the market only in case of negative news. In other words, markets seem to penalize companies for poor performance in sustainability. Results also show that positive news does not affect market price. These results are found for the complete sample without taking ESG reputation in account.

The first hypothesis of this thesis examines the effects of ESG reputation in case positive news are published. Measured by cumulative average abnormal return (CAAR), announcing positive ESG news leads to a market price increase between 0,8% and 1,6% if the previous ESG reputation is desirable. However, the price reaction is not found to be statistically significant on the event day, but after two days becomes such. A company operating in an industry associated with a negative average ESG sector reputation, that announces positive ESG related news does not lead to changes in market prices. When

considering the average abnormal returns (AAR) of the day news are announced, the market price cannot be concluded to change with statistical significance. In a conclusion, ESG reputation might affect stock price change over a more extended period of two days but not measured by short term price change. Thus, the first null hypothesis can not be rejected as there seems not to be significant differences depending on the ESG reputation on short term stock prices.

Announcing negative ESG news and having a good industry reputation does not result in a statistically significant price decrease. Reciprocally, a company within an industry with negative ESG reputation, announcing negative news is penalized by markets with a drop in market price of around 1,04 – 1,53%. The price decrease of companies with negative ESG reputation is highly statistically significant. As there is a clear difference in abnormal returns depending on the sector ESG reputation, the second hypothesis can be rejected.

Possessing a positive industry ESG reputation is a positive feature for companies. Thus, a positive ESG reputation operates as a shield if negative ESG related news are published. On the other hand, also results present that a negative sector ESG reputation is a burden for companies.

Thirdly, in this thesis, stock price reaction was hypothesized to be uncontrolled by anticipation of the news. Results show that if positive news are published on markets, both unexpected news and anticipated news present unsignificant results. However, if negative news surprise markets, they show statistical significance and produce an abnormal return of -1,70% on the event day. In opposition, anticipated news show no statistical significance. Thus, the third hypothesis is rejected as the surprise element makes a difference regarding publishing negative ESG news.

The fourth hypothesis of this thesis was to find if the stock price change after releasing new ESG information differs if ESG reputation is better or worse than the company's peers. Empirical results show that positive news do not affect stock prices regardless of

company's ESG reputation. Publishing negative news affect all companies significantly. However, negative news decrease stock prices more severely if company's ESG reputation is lower than its peer industry companies. Positive news seem not to affect market prices but negative news show an over two percentage difference in the stock price change depending on the peer level of ESG reputation. Based on this difference, the fourth hypothesis is rejected.

Negativity having a more significant effect on stock prices is in line with common cognitive literature about negativity. So-called negativity bias highlights adverse events more than positive ones, partly explaining the negative effect. All in all, there can be extremely many variables affecting stock price reactions. Further research can attempt to estimate these factors for instance, by considering multiple control variables and estimate other factors possibly affecting the price change. Considering longer or shorter event windows, the results might provide long-lasting results similar to for instance the post-earnings announcement drift introduced first by Ball & Brown (1968). Other adjustments in data collection and estimating additional potential influencing factors might change findings of this thesis.

To summarize this thesis' findings, ESG reputation seems also to have economic value for companies. Building a reputation requires resources and is a time-demanding project but seems to be a fundamental factor for the overall reputation and stock price adjusting after new information emerges. In addition, business sustainability concerns from the stakeholders are increasingly noticed, and the media is writing about ESG related topics. Still, total corporate reputation is a sum of many factors where ESG reputation plays a key role. However, ESG reputation's impact on stock price changes after news information is published is not yet studied comprehensively and thus has possibilities for further research.

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