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How are Corporate Social Responsibility Stocks affected in times of crisis?

Evidence from a Nordic Portfolio during COVID-19 pandemic

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ABSTRACT:

This thesis studies the relationship between Corporate Social Responsibility (CSR) and stock market returns during the market crash and subsequent recovery from the COVID-19 pandemic, using a unique data set of 536 Nordic stocks' performance during the COVID-19 pandemic crisis.

Further, this thesis examines whether CSR matters in the Financial sector during or after the crisis. Socially Responsible Investing (SRI) has grown substantially, and stocks and firms incorporate the vision of "doing good while doing well." The socially responsible investment aims to achieve returns while assessing the long-term social and environmental impact of a company's business policies. As a result, companies with High Environmental, Social, and Governance (ESG) values are growing substantially. In addition, the debate on how corporate stakeholder engagement relates to the preservation of shareholder wealth has received increasing attention in recent years, especially after the COVID-19 crisis. High CSR is a mandatory and voluntary aspect for companies, and academic interest is emerging, and this thesis intends to fill it by examining the existing literature on SRI and CSR individually and combined.

Finally, the empirical part of this thesis provides answers for investors considering High ESG stocks. A value-weighted High ESG portfolio underperforms the Low ESG value-weighted portfolio significantly during the crisis period of 18th February to 20th March 2020. However, the Financial-Stock portfolio in the post-crisis period, 23rd March to 30th December 2020 offers remarkable results as the High ESG portfolio overperforms the Low ESG portfolio. However, they are not overperforming in a statistically significant manner. Therefore, there is no excess return on a High ESG portfolio, and correlation with the market is very high due to the short time horizon, and COVID-19 itself is not over and does not necessarily affect High ESG companies.

This thesis proves that stock market performance does not systematically overperform sustainable performance, but investors can "do good while doing good."

KEYWORDS: Stocks market performance, Corporate Social Responsibility (CSR), Environmental, Social and Governance (ESG), Socially responsible investing (SRI), COVID-19

VAASAN YLIOPISTO**Laskentatoimen ja rahoituksen yksikkö**

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TIIVISTELMÄ:

Tässä tutkielmassa tutkitaan yritysten sosiaalisen vastuun ja osakemarkkinoiden tuottojen välistä suhdetta COVID-19-pandemian romahduksen ja sen jälkeisen toipumisen aikana käyttäen ainutlaatuista aineistoa, joka koostuu 536 pohjoismaisen osakkeen tuotoista COVID-19-pandemian aikana.

Lisäksi tässä tutkielmassa tarkastellaan, onko yritysten yhteiskuntavastuulla merkitystä rahoituslalla kriisin aikana tai sen jälkeen. Sosiaalisesti vastuullinen sijoittaminen (SRI) on kasvanut merkittävästi, ja osakkeet ja yritykset sisällyttävät siihen näkemyksen, jonka mukaan "tehdään hyvää samalla kun tehdään tulosta". Sosiaalisesti vastuullisella sijoittamisella pyritään saamaan tuottoa samalla kun arvioidaan yrityksen liiketoimintapolitiikan pitkän aikavälin sosiaalisia ja ympäristövaikutuksia. Tämän seurauksena yritykset, joilla on korkeat ympäristö-, sosiaali- ja hallintoarvot (ESG), kasvavat merkittävästi. Lisäksi keskustelu siitä, miten yritysten sidosryhmien sitoutuminen liittyy osakkeenomistajien varallisuuden säilyttämiseen, on saanut viime vuosina yhä enemmän huomiota, erityisesti COVID-19-kriisin jälkeen. Korkea yritysten yhteiskuntavastuu on yrityksille pakollinen ja vapaaehtoinen näkökohta, ja akateeminen kiinnostus on heräämässä, ja tämän tutkielman tarkoituksena on täyttää se tarkastelemalla olemassa olevaa kirjallisuutta SRI:stä ja yritysten yhteiskuntavastuusta erikseen ja yhdessä.

Lopuksi tämän tutkielman empiirisessä osassa annetaan vastauksia sijoittajille, jotka harkitsevat korkean ESG-arvon osakkeita. Arvopainotettu High ESG -salkku alittaa Low ESG -arvopainotetun salkun merkittävästi vuoden 18 kriisiaikana. helmikuuta-20. maaliskuuta 2020. Rahoitusosakkeiden salkku kuitenkin kriisin jälkeisenä ajanjaksona 23. maaliskuuta-30. joulukuuta 2020, tarjoaa huomattavia tuloksia, sillä High ESG -salkku tuottaa enemmän kuin Low ESG -salkku. Ne eivät kuitenkaan tuota tilastollisesti merkitsevästi liikaa. High ESG -portfoliolla ei siis ole ylituottoa, ja korrelaatio markkinoiden kanssa on hyvin korkea lyhyen aikahorisontin vuoksi, eikä COVID-19 itsessään ole yli eikä välttämättä vaikuta High ESG -yrityksiin.

Tämä tutkielma todistaa, että osakemarkkinoiden suorituskyky ei ylitä järjestelmällisesti pois kestävästä suorituskykyä, mutta sijoittajat voivat "tehdä hyvää tekemällä hyvää".

KEYWORDS: Stocks market performance, Corporate Social Responsibility (CSR), Environmental, Social and Governance (ESG), Socially responsible investing (SRI), COVID-19

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Acronyms

CAPM	Capital Asset Pricing Model
CSR	Corporate Social Responsibility
CFP	Corporate Financial Performance
CSP	Corporate Social Performance
ESG	Environmental, Social, Governance
EU	European Union
CAGR	Compound Annual Growth Rate
GSIA	Global Sustainable Investment Alliance
MSCI	Morgan Stanley Capital International
PRI	Principles of Responsible Investing
P/B	Price to Book
SDGs	Sustainable Development Goals
SIF	The Forum of Sustainability and Responsible Investment
SRI	Socially Responsible Investing
UK	The United Kingdom
UN	The United Nations
US	The United States

1 Introduction

Following recent events, particularly during the COVID-19 crisis, there has been considerable debate about how corporate stakeholder engagement relates to preserving shareholder wealth. Therefore, it is worth examining the relationship between Corporate Social Responsibility (CSR) and stock market returns during the market crash and subsequent recovery from the COVID-19 pandemic. Indeed, the pandemic is an unprecedented external shock that has increased attention on corporate social and environmental commitment, making it possible to see precisely whether Corporate Social Responsibility adds value in bad times.

According to Ikäheimo et al. (2014), the role of companies is to generate profits for their shareholders. However, this does have debated since Milton Friedman's (1970) influential 1970 article, in which he wrote about the impact of stakeholder welfare on shareholder value. However, it is indisputable that the importance of Corporate Social Responsibility has proliferated in recent years in the business environment and society. Hoepner et al. (2016) state that today, for shareholders, it is not enough for a company to achieve its financial goals, but it must also act in a sustainable and socially responsible manner, considering in its business activities such issues as climate change, social relations, and open governance. He states that companies have therefore started to pay more attention to CSR issues and allocate resources to CSR activities to meet the expectations of different stakeholders.

The value of sustainable investing is recognized worldwide and is one of the most talked-about issues today. SRI (socially responsible investment) and ESG (environmental, social, and governance issues) do commonly used to refer to sustainable investment. Renneboog et al. (2008) state that SRI seeks to generate returns while assessing the long-term social and environmental impact of a company's business policies. Investors are not only looking for financial returns but also environmental and social objectives. As investors become more interested and aware of these issues and regulators

increasingly demand them, they lead companies to integrate social responsibility and sustainability issues into their business processes. With the COVID-19 pandemic, there is renewed interest in investigating whether CSR activities improve the value and whether they improve it in times of crisis. However, according to Magnanelli and Izzo (2017), the main incentive for companies to engage in CSR activities is that they may lead to economic benefits.

The market turmoil caused by the COVID-19 pandemic and the resulting increased attention on CSR provides a unique opportunity to test the perception of whether CSR protects corporate value in times of crisis. Frynas and Yamahaki (2016) argue that companies need to look after the interests of various stakeholders and legitimize their actions to maintain alignment between society and corporate objectives to survive and grow. Thus, research indicates that CSR activities add value when genuinely aligned with stakeholders and environmental requirements. During the COVID-19 pandemic, the attention of governments and market participants has focused on CSR issues. Moreover, social, and environmental issues are at the heart of the recovery plan in many countries. For example, the European Parliament recommitted to the European Green Deal (2019) to make Europe climate neutral by 2050 and is also seeking to build post-COVID-19 economic recovery packages around the objectives of the Green Deal.

Nguyen et al. (2020) find that the presence of long-term investors, associated with higher demand for CSR, increases the value of CSR activities for shareholders. Furthermore, Griffin et al. (2020) shows that the positive association between CSR and firm value is stronger when the cultural environment creates a higher demand for CSR. Thus, he states that the results expect that the share price of CSR companies will perform better in times of crisis if their CSR activities are perceived to genuinely respond to the increased stakeholder demand for CSR caused by the pandemic.

This master's thesis examines the relationship between CSR and firm value in the COVID-19 stock market crisis using a unique dataset of Nordic companies in Finland, Norway,

Sweden, and Denmark during crisis (18th February – 20th March 2020) and post-crisis periods (23rd March – 30th December 2020). Further, this study empirically tests how the High ESG portfolio, which include companies with ESG higher than 75, beats Low ESG Portfolio, which include companies with ESG score below 25, during and post-crisis periods and if the financial sector gives different results. Also, this thesis uses difference portfolios A, which include companies with ESG points between 75 and 51, and B, which include companies with ESG scores between 50 and 25, to improve the results and High ESG and Low ESG portfolios comparability. The A and B portfolios are designed to improve the results and comparability, which checks whether the performance of the High and Low portfolios is statistically different.

1.1 Purpose of the thesis

This thesis aims to examine the relationship between Corporate Social Responsibility (CSR) and stock market returns in the wake of the market crash caused by the COVID-19 pandemic. The research is motivated by the need to find evidence on whether CSR increases value in difficult times. The study examines whether Corporate Social Responsibility matters during the COVID-19 pandemic-induced market crisis.

The purpose of this research is to examine socially responsible stocks during and after the crisis, and the emergence of socially responsible stocks has sparked academic interest. This study also investigates whether the High ESG portfolio generates alpha for investors compared to the Low ESG portfolio and whether different periods and industries (banking and financial sector) affect results. The impact of socially responsible investment on financial performance has been studied in many studies before (e.g., Lins et al. 2018, Albuquerque et al. 2020; Bae et al. 2020), but none of them invested in times of crisis in a Nordic portfolio. This dissertation aims to answer investors considering CSRs and issues related to socially responsible investing. It provides a comprehensive overview of the High and Low CSR portfolios on different periods and industries of

socially responsible investing and why and how these High ESG portfolios generate value for investors - or do they?

1.2 Research hypotheses

As socially responsible shares are relatively new, there is not much research or information on their development. However, they have received much attention from individual investors. Although the existing literature focuses primarily on socially responsible investing and whether companies operate responsibly, this thesis aims to investigate how the level of Corporate Social Responsibility affects stock market returns during the market crisis caused by the COVID-19 pandemic in the Nordic markets.

The annual growth of CSR and SRI shows that investors value these investments. Ferrell et al. (2016) found a positive relationship between CSR actions and firm value, and Humphrey et al. (2014) found evidence that investors pay the price investing in a socially responsible manner. Alternatively, in some cases, the relationship has been non-significant. For example, Bae et al. (2020) has found a negative correlation between CSR and stock market returns during the market crisis in US companies during COVID-19. In addition, while much-existing literature combines social responsibility and stock performance, there is little evidence of ESG industry performance, specifically in the financial sector. Previous research does not focus, and more specifically excludes it, on the financial sector due to its different debt financing characteristics and unique regulatory environment. Therefore, this study includes them and sees if they conduct differently. After all these examples, the first hypothesis of this thesis is as follows

H₁: CSR-active (financial) firms perform better during the COVID-19 crisis than non-active (financial) CSR firms.

Another objective is to examine whether the post-crisis period effect the stock market returns on ESG. There is evidence that Corporate Social Responsibility (CSR) activities

are value-enhancing. For example, Borghesi et al. (2014) find that larger firms demonstrate higher levels of Corporate Social Responsibility, Flammer (2015) found that the adoption of close call CSR propositions leads to favorable announcement returns, implying that these propositions are value-enhancing. In addition, Ferrell et al. (2016) find a positive relationship between CSR and value and that CSR dampens the negative relationship between the root and value of leadership. Similarly, Lins et al. (2017) found that during the 2008-2009 financial crisis, the return on equity of companies with high social capital, as measured by the intensity of Corporate Social Responsibility (CSR), was four to seven percentage points higher than that of companies with low social capital and Albuquerque et al. (2020) shows evidence that stocks with higher ES ratings have significantly higher returns during the first quarter of 2020. Thus, the second hypothesis focuses on.

H₂: CSR-active (financial) firms perform better after the COVID-19 crisis than non-active (financial) CSR firms

1.3 Structure of the thesis

This thesis consists of six chapters. The subchapter introduces the subject and justifies an urgent study of the subject. In addition, the chapter considers what kind of question this thesis intends to answer.

To fully understand the performance of a socially responsible stock during a crisis, it is necessary to understand the rationale behind these two phenomena. The second chapter looks extensively at the theoretical background required to understand Corporate Social Responsibility and the framework for socially responsible investing. The third chapter discusses previous studies and literature reviews. The third chapter also discusses the positive association between CSR and financial performance/CSR's impact on firm performance and how CSR companies improve firm value, especially in times of crisis. The primary reason for this chapter is to understand the backstory and why it is

crucial to examine the relation between CSR and firm value from the perspective of the COVID-19 stock market crash.

After reviewing the literature, this thesis moves on to the empirical part of this thesis. The fourth chapter presents unique material, how it is collected, and what kind of methodology and empirical models are used to answer the research question. Chapter five presents the results and critically analyzes the retrieved results. Finally, the sixth chapter deals with the results and concludes of this thesis.

2 Theoretical backgrounds

This chapter describes the importance of CSR and how CSR and SRI have evolved and have gained popularity among investors, and why they offer an attractive alternative to Low ESG companies. The following chapter also presents recent sustainability and responsibility themes and programs to shed light on the current spread of CSR trends, such as the shareholder theory introduced by Nobel Prize-winning economist Milton Friedman in 1970. The debate on CSR is still ongoing, as there is no general definition of a company's main objectives and missions. This debate is often referred to as the shareholder-stakeholder debate.

2.1 CSR – Corporate Social Responsibility

Today's investors can invest their money in many CSR stocks in anticipation of future profits. As a result, CSR has gained considerable attention and importance in the business world, but there is no clear definition of CSR and what it involves. There are many different perspectives on CSR, and the same terminology is used for different purposes, and different terminology is used to explain the same purpose. According to Votaw (1972), there are different ways in which CSR can be viewed. For example, some consider it legal responsibility or accountability, while others see it as ethically correct behavior. For some, it corresponds to corporate charitable activities, while others are related to social awareness.

One standard definition of CSR is described by Virvilaite and Daubaraite (2011):

“Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.”
(Virvilaite and Daubaraite, 2011).

The European Commission (2020) defines Corporate Social Responsibility in a more neutral way:

"The company's mission is to integrate social, environmental, ethical, human rights and consumer considerations into its business and core strategy in close cooperation with its stakeholders. The aim is to maximize the creation of shared value, which means creating returns for the company's shareholders while ensuring benefits for the company's other stakeholders." (The European Commission, 2020).

It is also often debated whether CSR and ESG have the same purpose and whether CSR has a broader environmental and social perspective than ESG. Stellner et al. (2015) argue that CSR can be viewed in how companies integrate ESG considerations into their processes and decision-making and how they interact with different stakeholders. This paper uses the terms CSR and ESG synonymously, as ESG scores from Thomson Reuters Refinitiv measure CSR performance. In addition, some studies have used the term Corporate Social Performance (CSP) to describe the level of CSR of a company, so in this thesis, it means the same as CSR.

2.2 The History of CSR

Corporate responsibility has proliferated in recent decades and the first significant steps in Corporate Social Responsibility date back to the early 1950s. However, according to Pedersen (2015), the content of Corporate Social Responsibility and the perception of what is responsible or sustainable has changed significantly over time. He says that modern CSR has its roots in Bowen's (1953) book "Social Responsibilities of the Businessman." In this book, he advises business leaders to respect social responsibility when making corporate decisions, and in the early days, CSR focused primarily on employee rights.

Clark (2000) notes that the development of ethical behavior over the following decades was driven by stakeholders' expectations of the social role of business. Ciualla (1991), on the other hand, finds that because of a more ethical trend, 75% of US Fortune 500 companies incorporated some ethical concept into their business practices in the 1980s. In addition, Freeman (1984) introduced the stakeholder theory, which aimed to encourage companies to satisfy all stakeholders. Finally, Carroll (2015) states that in the 1990s, companies faced new challenges as globalization changed the business environment, bringing new competitors to the market. However, it also accelerated the growth of institutionalization of CSR and opened new opportunities to leverage CSR for competitive advantage.

Several voluntary CSR standards and programs have been established in this millennium to improve CSR implementation and reporting. One example is the UN Global Compact (2020), the world's largest voluntary sustainability initiative for large multinational companies that commit to implementing their operations and strategies by the UNGC's ten principles. One of these is the 2030 Agenda for Sustainable Development. It is seen as a significant global agenda for a more responsible and sustainable world. All UN member states created the 2030 Agenda in 2015. It contains 17 Sustainable Development Goals (SDGs) to improve prosperity and peace by 2030, aiming to implement a coherent global strategy to eradicate hunger and poverty while increasing security, education, and care for the environment.

This thesis looks at how the number of socially responsible investments has grown in this millennium. The Sustainable, Responsible, and Impact Investing (SRI) investment strategy incorporates ESG criteria into the investment process. According to US SIF (2020), many different terms are used when discussing SRI, socially responsible investing, responsible investing, and sustainable investing. As shown in Figure 1 below, sustainability-themed investments in Europe between 2009 and 2017, with growth accelerating particularly in the last few years, although it has been on an upward trend

throughout the current decade. That is why CSR and SRI are investing in an exciting area of research.

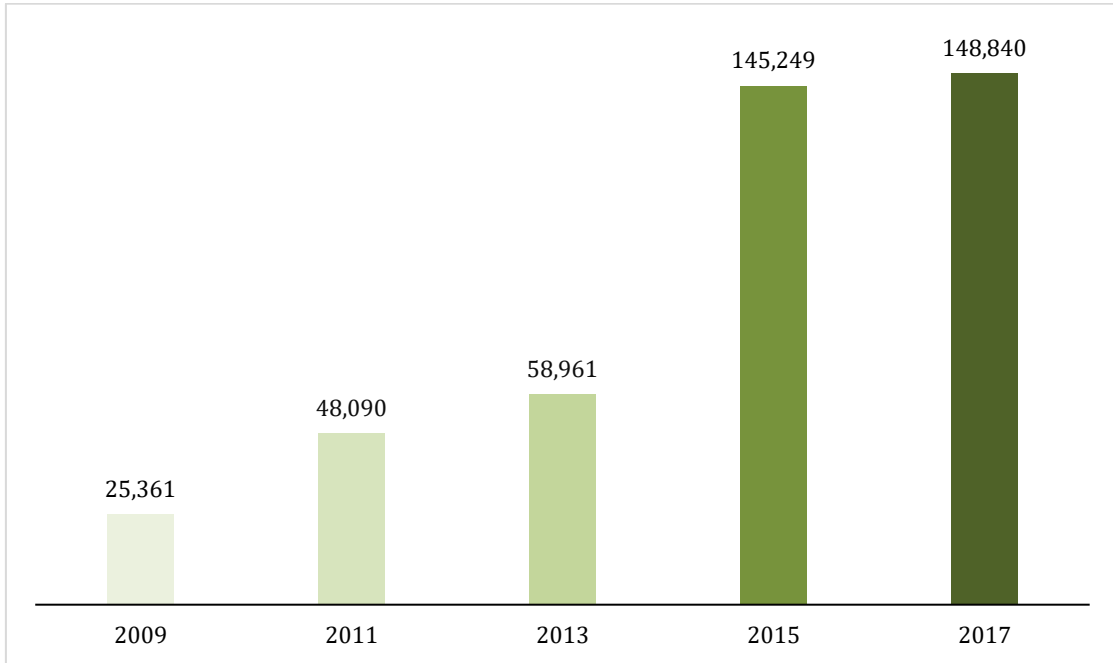


Figure 1. Growth of sustainability themed investments in Europe (Eurosif, 2018).

2.3 Corporate Social Responsibility theories

One way of examining the potential benefits and costs of CSR is to look at the different theories of CSR. For example, one of the perennial theories is shareholder theory, which has a negative view of CSR, whereas stakeholder and legitimacy theories adopt an optimistic view. On the other hand, theories of over-investment and agent conflict have similar features because they argue for a positive relationship between CSR and the cost of debt.

2.3.1 Shareholder theory

Nobel Prize-winning economist Milton Friedman (1970) proposed one commonly used theory, the shareholder theory. According to this theory, the sole purpose of a company is to maximize its profits, and companies have no other social responsibilities. In this theory, companies spend their money inefficiently by investing it in CSR activities instead of other more profitable projects, which can harm the interests of shareholders.

According to Friedman (1970), companies have only one social responsibility: to use resources and engage in business activities to increase profits if the company remains involved in open and accessible competition without fraud or deception. The study emphasizes the duty of the government to look after the interests of other stakeholders when applying regulations or taxation, for example. This theory has been criticized for its short-term perspective. This criticism is supported by Bird et al. (2007), who find that CSR excess returns are only realized in the long run because they tend to incur high costs in the short run before the benefits can be realized over time.

2.3.2 Stakeholder theory

According to Freeman's (1984) stakeholder theory, firms affect many groups other than shareholders, such as investors, customers, employees, and suppliers. Therefore, it is crucial from the perspective of stakeholder theory to take these groups into account when making business decisions. In addition, this perspective requires that companies simultaneously meet the financial interests of other stakeholders and shareholders.

In his research, Jensen (2002) extends Freeman's (1984) theory and concludes that a stakeholder approach ultimately improves shareholder wealth. He considers it unlikely that a company that pays its employees minimum wages and manufactures unsustainable products for its customers will succeed in the market. McWilliams and

Pedersen (2015) argue that firms can optimize their CSR contribution to respond to the needs of all stakeholders while maximizing their returns. He states that investing in consumer and customer relationships and creating long-term benefits can only add more value for business partners without harming them.

Bhuiyan and Nguyen (2019) argue that the relationship between a company and its stakeholders is key to its success nowadays, which is why companies spend many resources to improve their relationships with different stakeholders. Ge and Liu's (2015) study notes that Corporate Social Responsibility also reduces the risk of litigation and information asymmetry, thus benefiting capital market participants.

2.3.3 Overinvestment and agency conflict theory

According to Barnea and Rubin (2010), overinvestment and Corporate Social Responsibility theory lead to agency problems between stakeholders and management. Managers enhance their reputation by over-investing in CSR activities without adding value to the firm.

Bae, Chang, and Yi (2018a) state that lenders are more reluctant to increase the interest rate on loans to companies that over-invest in CSR activities because such inefficient use of resources increases risks and makes companies more fragile. The study notes that recent studies on CSR and interest rate differentials on bank loans support this theory. He states that banks penalize companies that over-invest in CSR because it creates unnecessary costs with no added value. He finishes by stating that this feature is unique to private debt markets and is explained by the fact that banks are better able to obtain firm-specific insight than other lenders.

2.3.4 Risk mitigation theory

Lee and Faff (2009) argue that arguments in favor of CSR are based on risk reduction, and previous studies support this by finding a negative relationship between the level of CSR and the level of risk of the firm. Krüger (2015) finds that investors react positively to positive CSR cases, while the reaction is significantly averse to the negative corporate responsibility cases. He states that while CSR does not necessarily lead to positive returns, better CSR is an effective way to avoid undesirable events.

Jo and Na (2012) find that CSR engagement significantly reduces the risks of so-called controversial firms, such as alcohol, tobacco, and gambling firms, and the impact of risk reduction is even more significant for controversial firms than for non-controversial firms. Research indicates that the benefits of engaging in CSR are not limited to non-controversial companies; instead, CSR is an effective risk reduction mechanism for sin companies.

2.3.5 Legitimacy theory

Garriga and Melé (2004) divide CSR approaches and theories into four categories. One category is integrative approach. These approaches emphasize the legitimacy theory, i.e., by integrating social requirements into business operations, companies gain legitimacy from their stakeholders. In other words, the study notes that companies should integrate their activities so that they are in line with current societal demands and societal values because society justifies companies to operate.

Fernando and Lawrence (2014) note that legitimacy theory is commonly used to explain CSR disclosure. Legitimacy theory means that companies enhance their legitimacy by voluntarily publishing their CSR reports. They state that companies can communicate to their stakeholders how they comply with societal norms and how ethically they act and

comply with existing legislation through CSR reports. In this way, organizations gain acceptance for their actions and enhance their legitimacy. Fabrizi et al. (2011) state that new CEOs tend to increase their investment in CSR because they hope to achieve legitimacy from stakeholders.

2.4 Measuring Corporate Social Responsibility

Corporate Social Responsibility has been studied and discussed since the 1950s. However, there is still an open debate about its universal definition. Turker (2009) states that in recent years, the importance of CSR is understood, but measuring it is still problematic, as not widely and universally accepted indicators have been introduced.

Turker (2009) notes that different researchers have different objectives and definitions of CSR, but each has its limitations due to the lack of standards and guidelines for CSR reporting. As a result, CSR metrics can sometimes be subjective and biased, and the above factors mean that CSR studies are not always comparable. The research indicates four methods for measuring CSR: a content analysis of corporate publications, reputation indices and databases, single and multiple issue indicators, and scales for measuring CSR at individual and organizational levels. In the following sections, this thesis discusses these in more detail.

2.4.1 Content analysis

According to Turker (2009), many companies publish their CSR reports, which has increased the popularity of content analysis in recent years. However, he states that content analysis of CSR reports is an subjective way to measure CSR; it selects characteristics to make the rating process comparable and stable when measuring different companies. The study notes that the basic idea is to select the desired attributes and then examine how they are reflected in CSR reports.

However, McGuire et al. (1988) state that companies may mislead readers by reporting CSR activities that they do not practice. Turker (2009) supports McGuire's findings by pointing out how previous studies have shown that there is no clear link between a company's environmental performance and the content of its report.

2.4.2 Indices and databases

Another commonly used method is to measure CSR based on databases and indices. For example, the Fortune Index and the MSCI Sustainability Index (MSCI ESG) measure Corporate Social Responsibility. In addition, MSCI (2020) ranks companies according to their environmental, social, and governance characteristics; MSCI ESG assesses global business practices. The ranking includes 34 environmental, social, and governance-related characteristics that can be used to determine the social performance of companies. Based on these, the company is rated between AAA which is the highest and CCC which is the lowest, relative to the standards of its industry peers. The aim is to provide investors with the most standardized information possible.

Turker (2009) has criticized this methodology for being designed to rate companies only in a particular sector, making the results not comparable across sectors. As an example, he notes the CSR practices of companies in developed and emerging markets.

2.4.3 Single and multiple indicators

The third commonly used method is single and multiple indicators. According to Turker (2009), the single method uses a single indicator to measure Corporate Social Responsibility, such as the effectiveness of the fight against environmental pollution. He notes that in this way, a company's environmental performance can be evaluated based on how well it reduces emissions. If one wants to focus on different dimensions of CSR,

this method can be extended by using multiple indicators. However, according to Aras et al. (2010), even these indicators are not always comparable across industries, e.g., some industries are already more environmentally friendly than others.

2.4.4 Scales for measuring CSR at the individual level

The fourth method uses individual values to measure Corporate Social Responsibility. Turker (2009) states that this method measures CSR values at the individual level by scaling them to match the CSR performance of the organization. In addition, he notes that one of the more popular methods is to measure the personal CSR values of corporate leaders and thus base organizational CSR performance on them. However, his research indicates that because managers' values do not always give a complete picture of the company's CSR strategy, the method may give biased results, although in some cases, this may reflect the CSR performance of the company. The author also points out that the current literature does not provide an accepted scale to measure Corporate Social Responsibility performance at the firm level. Finally, he notes that, for example, some organizations place more emphasis on managers' values than on the determinants of social responsibility.

2.5 CSR's impact on firm performance

The literature has increasingly explored the relationship between CSR and corporate performance in recent years. Regulatory and societal pressures on companies drive the demand for greater sustainability. In addition, a company's performance is constantly evaluated by its shareholders and other stakeholders. For example, if it turns out that a company is not implementing sustainability practices, this can critically impact the company's value.

Flammer (2015) and Ferrell et al. (2016) have focused on whether CSR companies improve firm value. Moreover, Lins et al. (2017) and Albuquerque et al. (2020) have focused on the subject, especially in times of crisis. A critical problem in CSR literature is the preliminary clarification of the relationship between performance and CSR and the different ways of measuring CSR. These are therefore carefully examined in this study. However, the results of these studies vary widely. For example, Ferrell et al. (2016) suggest that the correlation between firm performance and CSR is positive, while Masulis and Reza (2015) that CSR is unrelated to firm value or can even lead to poor firm performance due to agency costs.

Lackmann et al. (2012) finds that stocks with additional reliable sustainability information have abnormal returns. Furthermore, he finds that firms with higher systematic stock return risk benefit from additional information from the reliability of sustainability data are particularly larger than firms with lower investment risk. The article also finds that the reliability of sustainability information is higher during economic downturns and crisis, i.e., companies with higher Corporate Social Responsibility benefit from lower costs.

Research on the application of CSR to corporate policy has increased in recent years. However, studies examining the relationship between corporate performance and CSR cannot provide an absolute answer to the channel through which CSR has an impact. For example, Pätäri et al. (2014) find a link between firm performance and CSR in their studies. He states that companies benefit from CSR practices, while CSR concerns may harm the company.

Kim et al. (2014) investigated the relationship between Corporate Social Responsibility adoption and the risk of stock price collapse. The author finds a significant negative relationship between one-year forward stock price risk and CSR performance. He argues that CSR's mitigating effect on future stock price collapse risk relates to weak corporate governance, suggesting that firms with weak governance systems benefit more from

CSR adoption. The author suggests that the effect of high Corporate Social Responsibility performance is not as significant in firms with a robust corporate governance system compared to firms with a less intense corporate governance system. This finding implies that CSR indirectly affects firm performance through improved corporate governance. El Ghoul et al. (2011) supports this finding, as he also finds that only certain corporate governance-related CSR factors reduce costs.

3 SRI – Socially responsible investing

This section of the thesis introduces the background of socially responsible investing, ESG factors are introduced, SRI strategies are presented, and some of the most common criticism against socially responsible investing.

Sustainable development is a term coined by the World Commission on Environment and Development in 1987. Sustainable development and social responsibility can thus be implemented without hindering economic growth. The WEC (1987) emphasizes that sustainable development must be based on political will so that the satisfaction of present needs does not conflict with future needs, but ultimately future opportunities, resources, and economic growth are not abandoned. Laszlo and Zhexembayeva (2011) present an approach that builds sustainability into an organization and provides tools to initiate the process. They show that sustainable business is the next stage of competitive advantage, which has already begun due to three major trends: Resource depletion, radical openness, and rising expectations.

In the financial sector, socially responsible investing is a continuum to discuss sustainability issues such as climate degradation, environmental sustainability, ethical awareness, and more efficient use of resources. On the one hand, responsible investment may be an established area of economic research, but on the other hand, the research has evolved considerably quickly—the first studies on responsible investment date back to the 1970s. When the SRI market in the US was first studied in 1995, assets were estimated at USD 639 billion. The US SIF Foundation's (2020) Biennial Report on Trends in Sustainable, Responsible, and Impact Investing in the US found that SRI assets now total USD 12 trillion, representing one in four US assets of USD 46.6 trillion, which means that the growing scale is now 18 times the 1995 value. The report also shows a 36% increase from 2018 to 2020.

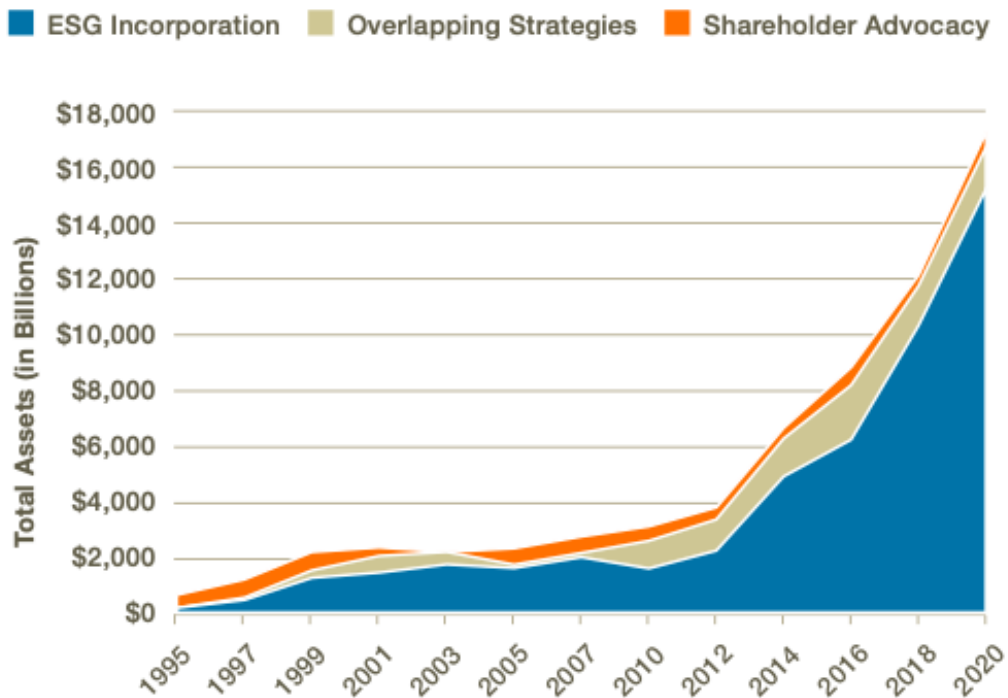


Figure 2. Sustainable and responsible investing in the US (US SIF Foundation, 2020).

According to Schueth (2003), the growth of SRI is driven by consumers, who have pushed investment firms to change their services to meet their clients' demand for sustainable alternatives. However, the author notes that it also identifies three reasons for this growth. The first reason is increased investor knowledge and education. The second reason is the inherent commitment of women to SRI. Evidence suggests that 60% of social investors are women. The third reason is the growing body of research showing that SRI does not require a financial trade-off and can be profitable.

Tinelli (2015) states that other explanations for SRI's growth include advanced social media, reputational risks, increasing investor demands, and sustainability-related regulations. Eurosif (2018), on the other hand, believes that the growing popularity of SRI is a result of debates at the international political level, where climate change and sustainability issues are becoming increasingly important. He states that other factors influencing SRI demand include regulatory changes and the possibility of linking sustainability goals to financial performance.

The global Principles for Responsible Investment (PRI), founded in 2005, assembled the term "responsible investment" known to the public. As of April 2018, the organization had 1 961 members with approximately 82 trillion USD in assets under management. Figure 3 shows the growth of PRI investors and their assets under management. The idea behind the organization was to bring socially responsible investing, previously a tiny niche, into the mainstream. UN PRI (2020) states that the organization describes responsible investing as an approach to integrating environmental, social, and governance (ESG) issues into investment decisions, continuing to manage risk, and generating long-term returns. ESG and its three components are described in more detail in the subheading. Woods and Urwin (2010) state that the organization is the most crucial initiative in responsible global investment due to its size, importance, and first-mover status. FINSIF (2020), on the other hand, handles smaller organizations in Finland and has established itself alongside many other organizations advocating the exact cause in their respective regions

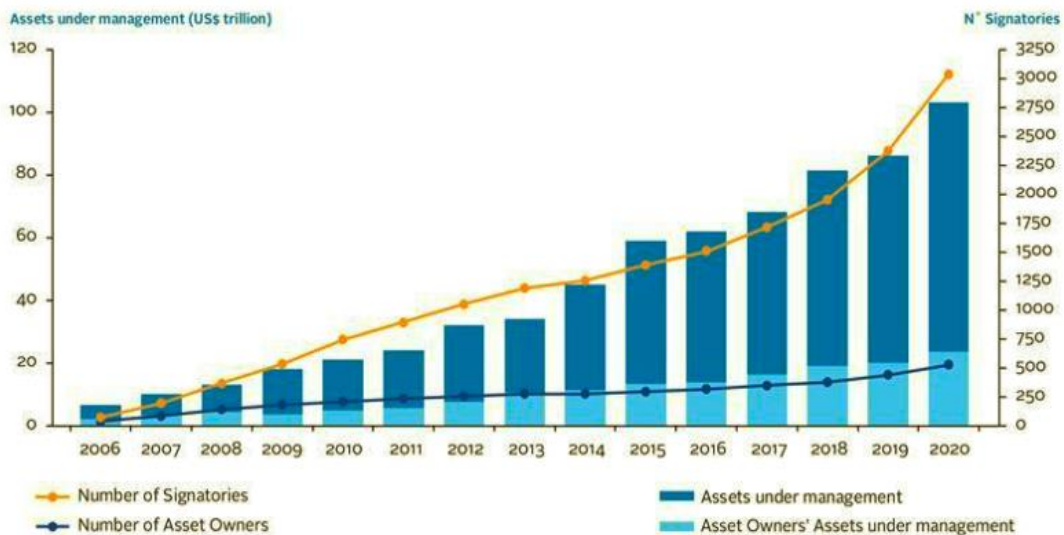


Figure 3. Assets Under PRI Management (UN PRI, 2021).

Socially responsible and sustainable investing are referred to by several terms and acronyms, such as socially responsible investing (SRI), impact investing, ethical or green investing, and ESG investing. All these terms share a common idea: investments should generate a return while considering non-economic measures such as environmental issues. Overall, sustainable investing and its sub-categories are a form of stylish investing. For example, Renneboog et al. (2008) describe SRI as an umbrella term: socially responsible investing is an investment decision-making process that combines social, environmental, and ethical considerations. Brzezczynski and McIntosh (2014) offer a second explanation, pointing out that this socially responsible investing combines economic returns with other social and environmental benefits, thus combining the investor's "social, ethical, environmental and economic concerns".

McCain (1978) states that the traditional economic and financial approach is that companies should only comply with the minimum environmental requirements and regulations imposed by law and not spend more money than necessary. The author states that the general view is that compliance with standards and laws diverts productive and profitable investments to investments that reduce profitability; for example, environmental degradation costs the community, and reducing public costs leads to charity, not profit maximization. Friedman (1970) notes that, in short, firms have no obligation or responsibility to contribute to the welfare of society.

While some studies suggest that SRI funds generate negative returns, in the long run, Nofsinger and Varma (2014) argue that SRI funds perform well during market crisis. They argue that this is because SRI and ESG funds mitigate downside risk. Thus, companies active in environmental, social, and governance issues do not suffer from major adverse ESG events during economic crisis. For example, if a company is committed to being environmentally responsible and implements environmentally solid programs, it is less likely to experience scandals such as pollution. The authors also find that while these weaker risk factors exist in all market situations, people pay more attention to them during crisis.

3.1 ESG – Environmental, Social and Governance factors

First, it is essential to understand the environmental, social, and governance (ESG) factors that investors use when making investment decisions. US SIF (2021) notes that the growth of sustainable investing is linked to developing various systems to communicate a company's sustainability performance. Therefore, an essential strategy for integrating ESG factors is incorporating these ESG criteria into investment analysis and portfolio construction.

The ESG factors used in socially responsible investment analysis reflect environmental, social, and governance factors related to a wide range of constantly evolving issues. According to the Principles for Responsible Investment (PRI) (2020), environmental factors include climate change, greenhouse gas emissions, waste, and pollution. Social factors include health and safety, local communities, employee relations and diversity, and working conditions, including child labor and slavery. Governance factors include executive pay, bribery and corruption, government diversity and structure, and tax strategy.

According to Hebb et al. (2015), these three factors, Environmental, Social and Governance, were not considered relevant concerns for finance in the past because it was assumed that the stock price included all known information about the company. However, the author continues, ESG information and the risks and possible returns relating to it became more evident over time, which led to the current mindset, in which ESG factors has a clear impact on companies' future revenues, which is why it is paramount to distribute ESG related information for shareholders in annual reports.

Figure 4 shows examples of all these elements and their priorities. For example, human rights and working conditions are part of the social factor and are considered in the investment decision-making process. The figure also shows that the "rejection of

tobacco or other harmful products" is included in the three-factor analysis's social dimension, which is the negative filtering of "sin stocks."



Figure 4. Examples of the ESG criteria (US SIF, 2020).

Wood (2015) describes ESG as a tool for responsible investing. He notes that investors can invest in companies with high ESG ratings to make such investments, and responsible investors believe that high ESG standards are associated with lower risk and potential excess returns over the long term. ESG ratings are provided by external rating agencies such as Morningstar and MSCI.

A purely positive ESG factor and financial performance has been studied, but no link has been found. Thus, ESG impacts corporate performance, including Corporate Social Responsibility (CSR). El Ghoul, Guedhami, Kwok, and Mishra (2011) and Gregory, Tharyan, and Whittaker (2014) find that firms with good ESG performance have lower risk and higher valuation. Fatemi, Fooladi, and Tehranian (2017) show that firms with good ESG characteristics and lower risk have more loyal employees and customers and are more likely to survive and create value longer.

The annual report from the Sustainable and Responsible Investment Forum (US SIF) shows which ESG criteria fund managers invested in during 2020. Figure 5 below shows that climate change and carbon emissions were the High Specific ESG issues considered by Money Managers on an asset-weighted basis. US SIF (2020) notes that these criteria increased 39% from 2020. Human rights saw an 81% increase over 2018 and executive pay 122%.

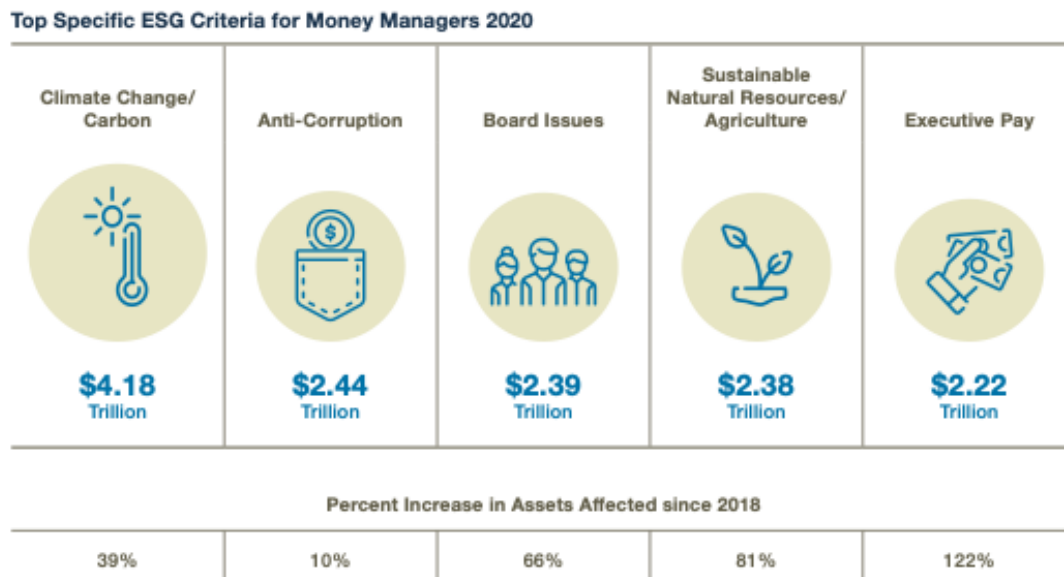


Figure 5. High Specific ESG Criteria for Money Managers 2020 (US SIF, 2020).

Due to the enormous growth in sustainable investments and ESG analysis, many organizations offer ESG analysis and ESG ratings. Dorfleitner, Halbritter, and Nguyen (2015) compare three rating agencies (Sustainalytics, Sustainability Asset Management

Group, and Ethical Investment Research Service) and empirically examine the level of risk associated with changes in ESG ratings. The study suggests that investors should critically assess the validity of a particular ESG rating model, as ESG ratings are not yet consistent in terms of ESG measurement concepts. Scarlet and Kelly (2010) criticize the common understanding among rating service providers of standards, weights, and what is considered relevant information. Halbritter and Dorfleitner (2015) suggest that studies should not be limited to a single ESG provider. Since 2010, when RiskMetrics published the Morningstar Sustainability Rating (2020), its rating has gained prominence in ESG ratings and is considered one of the most advanced.

3.2 Responsible investing strategies

Schueth (2003) identifies two primary motivations for responsible investors. The first group is motivated by the desire to invest consistently with their values and priorities. The second group is motivated by the need to invest their money in values that impact society. In other words, they are more motivated by the impact their money can have.

Investors can use different strategies to achieve their goals and invest ethically. Schueth (2003) divides them into shareholder advocacy, collaborative investing, and filtering. He states that shareholder lobbying refers to the actions of socially responsible investors who use their role to influence corporate governance, including voting at shareholder meetings and engaging in dialogue with the company to influence its behavior positively. He finishes with community investment providing capital to low-income companies with difficulty accessing it through conventional means. For example, it promotes job creation and affordable housing.

Schueth (2003) notes that the most common strategy of SRI is screening. In practice, screening excludes companies from portfolios based on ESG factors. Renneboog et al. (2008) state that the oldest SRI strategy is based on excluding companies, also called negative screening. He notes that, typically, negative screening is applied to various

assets, excluding companies operating in risky sectors such as alcohol, gambling, tobacco, arms, and adult entertainment. He finishes with other negative filters that can relate to the environment, labor relations, and working conditions, for example, by excluding companies that contribute to global warming or exploit their workforce.

Over time, investment screens have evolved. Renneboog et al. (2008) note that today, positive screens are often used to select stocks of companies distinguished by a high level of Corporate Social Responsibility (CSR). The author notes that the most common positive screens relate to corporate governance, labor relations, and the environment, which means that companies with "good practices" in executive compensation and board independence, employee empowerment, recycling, and waste reduction are included.

Humphrey (2005) notes that positive filtering is often associated with a best-in-class (BIC) approach. He states that companies are ranked within an industry or market sector according to their social responsibility or ESG rating. His research indicates that only the leading companies in that industry are selected for investment, which leads to diversification across industries, as the best-in-class portfolio even includes tobacco but only the best companies. He finishes with companies, but only those whose ESG practices are better than those of the industry. However, Renneboog (2008) notes that it is common for multiple pieces of evidence to be used together to make responsible investment decisions.

The European SRI Study (2018) identifies seven categories of SRI strategies. These are exclusion, standards-based screening, best-in-class selection, sustainable investment, ESG integration, engagement and consultation, and impact investing, which are closely related to other frameworks (see Table 1). According to the survey, the most popular strategy is exclusion. However, the fastest-growing strategy is ESG integration, indicating that incorporating sustainability criteria into investment decisions is

increasingly becoming the norm for investors. Other growth strategies include best-in-class, engagement, and voting.

Table 1. Responsible SRI strategies (Eurosif, 2018).

Eurosif	GSIA-equivalent	PRI-equivalent	EFAMA-equivalent
Exclusion of holdings from investment universe	Negative/exclusionary screening	Negative/exclusionary screening	Negative screening or Exclusion
Norms-based screening	Norms-based screening	Norms-based screening	Norms based approach (type of screening)
Best-in-Class investment selection	Positive/best-in-class screening	Positive/best-in-class screening	Best-in-Class policy (type of screening)
Sustainability themed investment	Sustainability-themed investing	Sustainability themed investing	Thematic investment (type of screening)
ESG integration	ESG integration	Integration of ESG issues	-
Engagement and voting on sustainability matters	Corporate engagement and shareholder action	Active ownership and engagement (three types): Active ownership Engagement (Proxy) voting and shareholder resolutions	Engagement (voting)
Impact investing	Impact/community investing	-	-

UN PRI (2020) study notes that one of the best-known SRI concepts brings all ESG factors into the investment decision-making process, and SRI investing can involve the valuation of a company and the investment process. The study notes that an investor may favor ethical and responsible investments through some qualification process or avoid worse alternatives in the investment process. The research concludes that the SRI investment and portfolio building process considers the usual risk and return model but adjusts for ESG factors to assess company value. Research indicates that SRI portfolios are often seen as weaker counterparties against risk and return, but this cost is considered acceptable due to the idea of the investment product. While investing in sustainable, responsible, and socially acceptable companies can only bring long-term returns, risk management is different from traditional decentralization. US SIF (2018) study notes

that qualitatively aggregating all ESG criteria with standard investment analysis (for example, risk and return), which is one way to include ESG factor analysis, the USSIF calls it ESG integration.

Renneboog (2018) notes that some investors may include only firms with a high ESG approach in their portfolios, while others may exclude companies with a Low ESG record called positive and negative screening tests or best-in-class and exclusion tests. The study notes that in the negative valuation method, the fund manager typically applies a valuation to a specific asset class, such as the S&P 500 stock index, and then the fund excludes certain assets from this pre-selected valuation. US SIF (2018) research indicates that socially responsible funds generally use evidence that excludes industries such as tobacco, guns, alcohol, and gambling. The research concludes that while negative evidence is the oldest form of socially responsible investing, positive or best-in-class evidence grows alongside various ESG and sustainability scores, helping investors choose premium assets. The Fund may use one of the screens or a combination of positive and negative boxes in the allocation decision.

US SIF (2018) study notes that the fund manager uses globally recognized measures and legislation to make investment decisions in *standards-based screening*. For example, the fund manager may decide to exclude investments that do not meet these measures or to include only those that meet pre-defined standards. The UN or a similar organization may publish these measures. For example, the EU Taxonomy Regulation contains several detailed standards to help asset managers and investors determine which environmentally friendly assets do not meet the norms.

US SIF (2018) study notes that in the simplest case, *corporate engagement* and *shareholder engagement* are all communications that address the behavior of a company which can be communicated directly to the company's management or board of directors through shareholder meetings or proxy votes. Research indicates that shareholders actively encourage a company to adopt responsible business practices and

sustainable decisions. The researchers conclude that the investment strategy is to actively engage and communicate with the company, rather than simply making an investment decision and investing in the company.

Furthermore, US SIF (2018) research concludes that *impact investing* refers to the benefits that investors seek to bear on social or environmental problems and contribute to social and environmental change while seeking a return on their investment. Research notes that, for example, an investor may promote sustainable agriculture, clean technology, and pollution reduction and seek to make a profit in addition to the personal benefits of doing good.

Lastly, US SIF (2018) study notes that the weakest form of responsible investing is *sustainable investing*, in which investors tend to choose assets related to sustainability. Research continues that these investments aim to promote sustainability in general. For example, asset managers may seek to invest in renewable energy, water management, and equities.

In addition, US SIF (2018) shows many principles and strategies; there are also many instruments and asset classes for socially responsible investing. These include clean stocks, social impact bonds, and green bonds. The study notes that funds, indices, and exchange-traded funds that incorporate some forms of socially responsible investing are essential to this thesis. For example, a green bond is an interest rate instrument issued specifically to finance socially sustainable initiatives such as climate and environmental projects. On the other hand, research indicates that a SIB is a financial contract with an authority, such as a public sector or government, to improve the social impact on society or region, with the benefit depending on the social impact. This work does not discuss socially responsible investment methods other than stocks and shares in detail but aims to show a growing number of methods and instruments that investors can use to pursue social responsibility in the financial markets.

Investors can look in a fund's prospectus or on the fund's website for information about the strategy or selection method the fund uses to make investment decisions. For example, SEC Edgar makes all past or current prospectuses of US-listed funds publicly available. Funds are required to make this information public. After understanding the fund's strategy, it is necessary to understand which characteristics or factors are socially sustainable to measure the sustainability or social impact of the investment on society or the company.

4 Previous research

As stated before, the importance of CSR has proliferated in this decade. The interest of researchers is to look for the link between CSR and the financial performance of companies. This chapter presents previous studies that have examined CSR and firm performance. The aim is to highlight different results and interpret their significance from the perspective of CSR theory. Furthermore, previous studies have debated the correct way to measure CSR and whether CSR impacts a company's financial performance. While this paper focuses on measuring CSR using indices and databases, results from other measures are also presented to illustrate the impact of CSR on financial performance in a comprehensive way.

The COVID-19 pandemic represents an exogenous event and thus allows us to test the relationship more clearly between CSR demand and the impact on CSR valuation. Previous results of studies that have found a positive association between CSR and financial performance are presented in section 4.1, and studies that have found a negative association between CSR and financial performance are reviewed in section 4.2.

4.1 The positive association between CSR's impact on firm performance

In their study, Servaes and Tamayo (2013) find that firms that are CSR active, i.e., that implement and publicize CSR actions, achieve higher valuation if firm reputation and their actions are consistent. However, he states that firms also achieve lower valuations if the actions and the firm's reputation are inconsistent. Thus, it would be expected that the share price of CSR active companies would perform better in times of crisis if their CSR actions were perceived as genuinely responding to the increased stakeholder demand for CSR caused by the pandemic.

El Ghoul et al. (2011) investigates whether Corporate Social Responsibility affects the cost of equity and stock prices incorporate analysts' earnings forecasts. The authors find that firms with higher CSR have significantly lower costs of equity. In addition, they find that CSR-related investments in employee relations, environmental policies, and product strategies lower the cost of capital for firms.

Harjoto and Jo (2015) examine analysts' reactions when firms engage in CSR by the law and when firms engage in CSR by social norms. The authors finds that the effect of CSR actions on analysts' dispersion is negative and statistically significant. Finally, they conclude that CSR also increases firm value.

Boubakri et al. (2016) find that companies that are cross listed in the US, i.e., more exposed to higher litigation risk and CSR demand, should also consider investor consensus in the US. In their research, Nguyen et al. (2020) find that the presence of long-term investors, associated with higher demand for CSR, increases the value of CSR actions to shareholders. Griffin et al. (2020) also finds a positive relationship between CSR and firm value, with cultural environments creating greater demand for CSR. As noted earlier, CSR has been measured differently in various studies. In addition, these studies face endogeneity problems, as the variables used to describe the demand for CSR is likely to be correlated with outcome variables.

In their study, Ding et al. (2020) find that firms with more robust CSR before the pandemic experience better stock price performance under COVID-19. Furthermore, he finds that the link between CSR and resilience is more vital in economies where social norms prioritize environmental and social issues. Finally, he concludes that the results are consistent with the view that CSR increases loyalty and strengthens ties with stakeholders, making employees, suppliers, and customers more willing to adjust and support the company in difficult times.

Garel and Petit-Romec (2020) find that firms with good environmental performance have significantly higher returns during the COVID-19 crisis. Furthermore, they suggest that investors have started to reward companies with responsible strategies on climate change to a greater extent. Finally, they conclude that the stock market offers the insight that investors expect companies with responsible strategies on climate issues to perform better in the long run.

4.2 The negative association between CSR's impact on firm performance

Lopez et al. (2007) studied the relationship between CSR and firm performance by comparing the Dow Jones Sustainability Index (DJSI) and companies' financial statements with companies not listed in the DJSI but listed only in the Dow Jones Global Index (DJGI). The article argues that the inclusion of CSR in corporate policy can increase costs and thus harm the allocation of resources. Furthermore, the author says that this puts responsible companies at a disadvantage, and the disadvantage is reflected in a negative impact on short-term performance compared to companies that are not active in CSR. Finally, however, the author concludes that the negative impact of CSR on firm performance diminishes over time.

Pätäri et al. (2014) find that CSR concerns and strengths are often aggregated, which are used as a composite measure of CSR that has been criticized in previous literature. In addition, their results show that strengths and concerns have different effects on financial performance and profitability; for example, changes in CSR strengths do not seem to affect profitability. Finally, they conclude that the statistically significant negative coefficients suggest this for lagged changes in CSR concerns.

Masulis and Reza (2015) find that 62% of companies donate to charities close to CEOs, and donations are higher in companies where CEOs' financial interests are less aligned with shareholders. The article also notes that many companies claim to have embraced CSR and then cite commendable reports to demonstrate their level of commitment.

In their study, Borghesi et al. (2015) examine the different factors that motivate managers to make socially responsible investments. They find that these investments are correlated with several firm characteristics and vary significantly across industries and here is a negative correlation between shareholder returns and industry-adjusted levels of Corporate Social Responsibility. In addition, they provide consistent evidence where firms with more extensive institutional holdings are less likely to invest in CSR.

4.3 CSR companies improve firm value, especially in times of crisis

This thesis has reviewed previous research on whether companies should maximize shareholder value or stakeholder welfare. This question has recently attracted interest with the current COVID-19 pandemic. In this section, this thesis reviews previous research comparing whether CSR improves firm value, especially in times of crisis, from the perspective of the COVID-19 stock market crisis.

In their research, Lins et al. (2017) find that companies with high CSR scores perform at least four percentage points better than companies with Low CSR scores during an economic crisis. The article also finds that the increased social capital resulting from CSR is particularly effective in times of reduced trust in companies in general. In regular times, any benefit from social capital is already incorporated in the company's share price. Finally, the author notes that returns have not reversed their decline in the post-crisis period, suggesting that trustworthiness has remained vital, which is in line with research evidence that trust in companies and stock markets remains low.

Lins et al. (2017) go on to say that, especially in times of declining confidence in companies in general, the increased social capital resulting from Corporate Social Responsibility has an impact in regular times, all the benefits of social capital are already incorporated in the company's share price. The article also notes that stock returns have not started to fall since the crisis, suggesting that reliability will remain important for

shareholders and that confidence in stock markets and companies remains low. In addition, the author argues that companies with higher levels of CSR can generate excess returns during a market crisis and thus benefit from higher profitability, sales cavity, margins, and labor productivity compared to companies with low CSR. The author also examines the post-crisis period and finds that some of these effects remain, albeit with a lower statistical and economic significance. Finally, he concludes that building firm-specific social capital can be seen as an insurance policy that pays off when investors and the economy face a severe crisis of confidence.

In their paper, Albuquerque et al. (2020) investigate how Environmental and Social (ES) corporate policies affected on COVID-19 pandemic, and the subsequent lock-up caused an exogenous and unprecedented corporate stock market reaction. He states that the crisis provides a unique opportunity to test environmental and social policy theories. The author suggests that the stock prices of firms with high ES scores perform much better than those of firms without high ES scores.

Albuquerque et al. (2020) notes that high ES score firms have higher operating margins, significantly higher returns, and lower return volatility in the first quarter of 2020. His research indicates that a high ES score firm with higher advertising spending will have higher stock returns, and stocks held by more ES-oriented investors will have less return volatility during a downturn. He argues that stock price performance is solid during market crashes for stocks with high ES scores and high levels of advertising and that stock return volatility is lower for high ES stocks. Finally, he concludes that the evidence presented in the paper is consistent with the view that increasing investor and consumer loyalty is an essential precondition for the sustainability of ES firms.

Research by Bae et al. (2021) shows no evidence that Corporate Social Responsibility affected stock returns during a pandemic stock market crash. He says that the performance of these companies is no different from that of non-members. They also examine the period after the stock market crash and find that it holds in the post-crash

period and across industries. The authors also look at Business Roundtable member companies that made an unequivocal commitment to serving stakeholder interests before the pandemic. The author suggests that pre-crisis Corporate Social Responsibility is not an effective way to protect shareholder wealth from the crisis adverse effects. In addition, he suggests that there may be a mismatch between CSR orientation and actual actions. Finally, the author concludes that shareholders should be cautious about drawing any absolute or unambiguous conclusions about the value of CSR in times of crisis.

5 Data and Methodology

This chapter presents the data sources used in this study to collect information on CSR active companies in the Nordic countries and their performance during the COVID-19 pandemic. The first part of this chapter describes the data collection process and used data. This section of the thesis focuses on the empirical part. Later this chapter presents the methodology and the empirical models. In addition, this chapter presents the relationship between CSR and stock performance by testing the regression variables with the CAPM, Fama-French three-factor model, and Fama-French five-factor model (Fama and French, 1996).

5.1 Sample Period

This paper examines the link between CSR and stock returns in the Nordic markets - Finland, Sweden, Norway, and Denmark. The sampling starts with all Nordic companies in the Refinitiv ESG databases, using the latest Refinitiv (2020) classifications. This research closely follows the research design of Bae et al. (2021) and Lins et al. (2017), which examines the relationship between CSR and stock returns of US companies. In previous studies, banks, financial institutions, insurance companies, and small companies with a market capitalization of less than 250million USD have been excluded due to their different debt financing characteristics and unique regulatory environment. This thesis will include them in this study and see if they behave differently. Including banks and financial institutions, it allows us to make an additional contribution to the original study. Therefore, the original sample includes small businesses, but this thesis looks separately at how banks, financial institutions, and insurance companies' stock performance reacted during the crisis. The sample consists of stock returns of non-financial ESG Refinitiv companies during and after the COVID-19 crisis in 2020.

The ESG database comes from Refinitiv ESG Data (2020), one of the most comprehensive and largest providers of ESG data. Companies' ESG scores are scaled from 0 to 100, with 0 being the lowest. The ESGs are divided into four different categories; the score range 0-25 includes companies with Low ESG performance and low reporting transparency, 26-50 companies with adequate ESG performance and moderate reporting transparency, 51-75 companies with good ESG performance and medium reporting transparency, and 76-100 companies with excellent ESG performance and high reporting transparency. Refinitiv's ESG score is designed to measure a company's relative ESG performance transparently across ten main themes (emissions, eco-innovation, et cetera.) from company websites, news sources, reports, and other publicly available sources. ESG scores are calculated for more than 10,000 companies worldwide and 450 ESG measures. This study focuses on aspects of Corporate Social Responsibility, and although the database also provides financial scores, these are excluded from the scope of this study. However, the ESG score calculated by the database includes all four pillars. It is used in this study to describe the overall level of CSR. ESG data was collected from 2020 onwards.

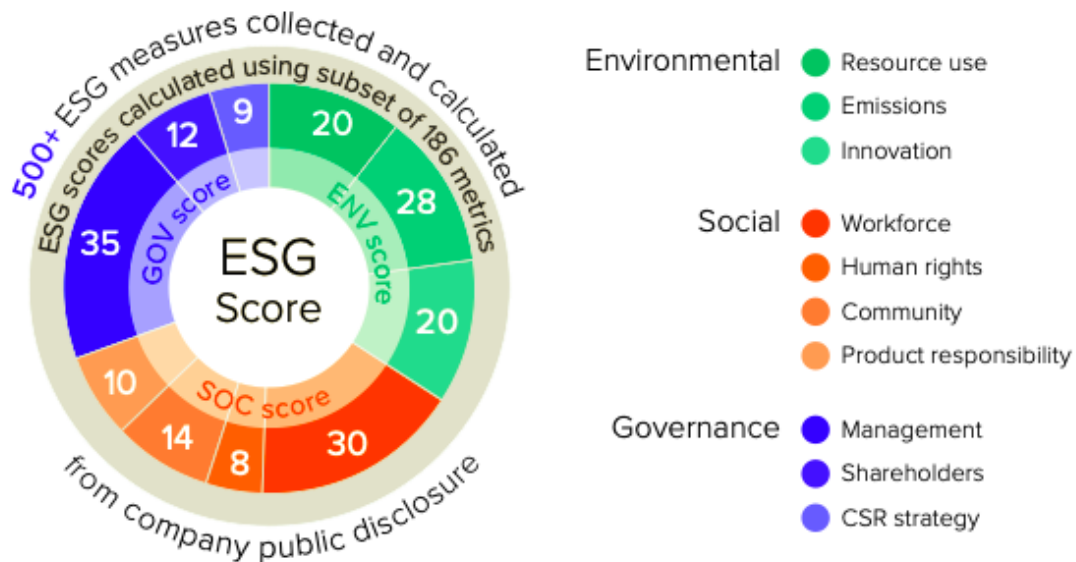


Figure 6. Formation of Refinitiv ESG scores (Refinitiv, 2021).

The financial data, such as financial statement variables, month-end closing prices, and closing yield index, are obtained from the Thomson Reuters Worldscope database. The financial data also starts from 2020, the same as in the case of ESG information. However, in this study, the data will be divided between the crisis period (18th February to 20th March 2020) and the post-crisis period (23rd March to 30th December 2020).

5.1.1 Data description

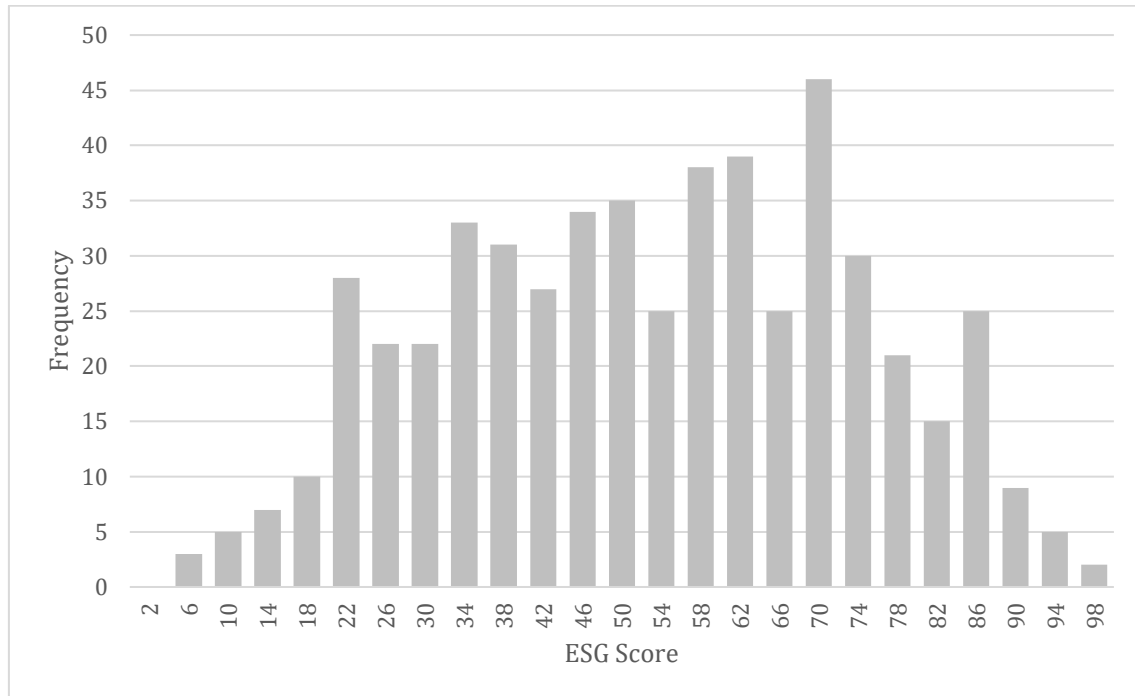
The sample for this paper starts with the Nordic (Finland, Sweden, Norway, and Denmark) companies in the Refinitiv ESG database. This thesis uses the latest Refinitiv (2020) ratings and stock returns obtained from Refinitiv. Lins et al. (2017) and Bae et al. (2020) exclude financial firms and microcap firms with a market capitalization of less than 250 million USD in the last fiscal quarter. This study includes microcap firms to see if these firms behave differently, and thus, can get an additional contribution to the previous study. After banks and financial institutions have been excluded in a separate dataset and firms with missing ESG scores and stock return data and doing the same for Finland, Sweden, Norway, and Denmark financial data, the sample is 482 companies, 80 from Finland, 264 from Sweden, 83 Norway and 55 from Denmark. Financial institution data contains all the banks, financial institutions, and insurance companies; this thesis includes 55 companies: five from Finland, 28 from Sweden, nine from Norway, and 12 from Denmark.

CSR ratings are constructed based on Refinitiv's ESG database. Specifically, this thesis divides companies into four parts using Refinitiv's ESG score with companies in the High ESG category with excellent ESG scores above 75, companies with good ESG scores between 75 and 51, companies with average ESG scores between 50 and 25, and companies in the worst category with ESG scores below 25. For example, this thesis economic sample of 482 and 54 companies with available Refinitiv ESG scoring data, the ESG average score for the All-Stocks portfolio is 51,37 and ranges from 3,36 to 95,08. For the Financial is 47,63 and ranges from 2,79 to 82,79.

Table 2. Summary of ESG scores in All-Stocks and Financial-Stocks.

	Mean	Meadian	S.D.	Min	Max	N
All-Stocks	47,50	48,81	18,06	3,36	78,32	482
Financial Stocks	47,63	48,19	20,07	2,79	82,79	54

This table presents the summary of ESG Scores in All-Stocks and Financial-Stocks portfolio. All-Stocks portfolio contains altogether 482 firm and Financial-Stocks portfolio contains 54 firms.

**Figure 7.** The frequency distribution of the ESG scores in the sample.

In their paper, Bae et al. (2021) report that US markets have experienced the worst point decline in history, and US stocks have fallen the most since 1987. He also notes that trading had to be restricted four times. This study defines crisis-period returns as cumulative daily stock returns from 18th February to 20th March 2020. The return measure used in the study is a raw stock return. For raw stock returns, this study estimates a market model using a market value of a value-weighted index as the market return. The results are shown for both the High ESG portfolio and a comparison with the Low ESG portfolio. This thesis uses difference portfolios A, which include companies with ESG points between 75-51, and B, which include companies with ESG scores between

50-25, to improve the results and High ESG and Low ESG portfolios comparability. The A and B portfolios are designed to improve the results and comparability, which checks whether the performance of the High and Low portfolios is statistically different. The average stock return during the crisis All-Stocks (Financial-Stocks) is -1,08% (-1,78%) for High ESG firms, -1,17% (-1,44%) for portfolio A 1,53% (-1,46%) for portfolio B and -1,42% (-0,63%) for firms with a Low ESG score.

The post-crisis period is defined as 23rd March to 30th December 2020. During that time, the OMX Nordic index recovered around 70% of the -33% fall during the crisis. Post-crisis equity returns are calculated as daily equity returns, as were equity returns during the crisis period. With the market recovery, the average stock return of All-Stocks (Financial-Stocks) portfolio in the post-crisis period is 0,18% (0,15%) for High ESG firms, 0,28% (0,21%) for portfolio A 0,38% (0,28%) for portfolio B and 0,38% (0,09%) for Low ESG score firms, suggesting that companies with Low ESG score outperformed companies with High ESG and portfolio A in the post-crisis period.

Table 3. Summary of stock performance in High and Low ESG score companies.

	High	A	B	Low	Total
Crisis period All-Stocks	-1,08 %	-1,17 %	-1,53 %	-1,42 %	-5,21 %
Crisis period Financial-Stocks	-1,78 %	-1,44 %	-1,46 %	-0,63 %	-5,31 %
Post-crisis period All-Stocks	0,18 %	0,28 %	0,38 %	0,38 %	1,23 %
Post-crisis period Financial-Stocks	0,15 %	0,21 %	0,28 %	0,09 %	0,73 %

This table presents the summary of stock performance during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. All-Stocks portfolio contains altogether 482 firm. High portfolio consists of 67 stocks, A of 187, B of 165 and Low of 63 stocks. Financial-Stocks portfolio contains 54 firms where High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks.

Table 3 shows how the shares of the sample companies evolved during the crisis from 18th February to 20th March 2020. All companies in the four categories reached their lowest point on 12th March but peaked the next day on 13th March. Overall, the scores have fluctuated broadly in the same way, with no outperformance in the scores, despite the increasing attention and investor interest in ESG measures. Companies with Low ESG scores perform worst in almost every period, but the best ESG scores do not perform well the peak periods.

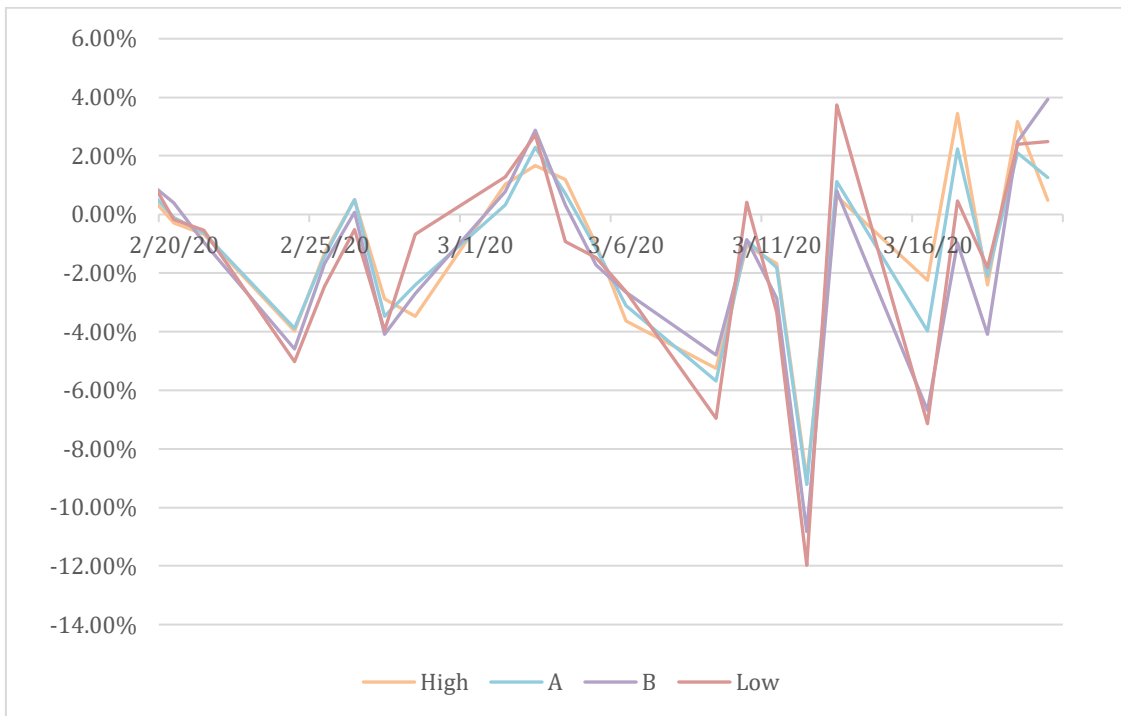


Figure 8. All-Stocks performance during crisis period.

5.2 Methodology

The study aims to examine the impact of CSR on corporate performance during the COVID-19 crisis. First, this thesis tests how CSR explains firm performance during the COVID-19 crisis which begins by calculating the average return for each firm in 2020, first considering a Nordic portfolio that includes all industries except banks and other

financial institutions, All-Stocks. Then this thesis examines whether a portfolio including only Nordic banks and financial institutions, Financial-Stocks, gives different results.

The returns are regressed on Refinitiv ESG scores. Table 4 shows that the adjusted R squared of this regression is 0.83%, suggesting this model does not explain the dependent variable well. However, it is noteworthy that stock returns are for only one year, so the R square does not provide robust results by default. However, the coefficient portfolio CSR parameter estimate is optimistic after controlling this regression model. Furthermore, the coefficient is statistically significant, with a p-value below 0.05. Thus, CSR is at least somewhat able to explain stock returns in this portfolio.

Table 4. All-Stocks portfolio returns and ESG regression.

	Coefficients	Standard Error	t Stat	P-value
Alpha	0,329	0,061	5,348	0
ESG	-0,002	0,001	-2,239	0,026
Observation	482			
Adjusted R square	0,008			

This table presents regression results for the effect of ESG ratings on stock market returns during 2020 COVID-19 crisis. All-Stocks portfolio contains altogether 482 firm. High portfolio consists of 67 stocks, A of 187, B of 165 and Low of 63 stocks. ESG scores varies between 3,36 and 78,32.

The fifth table regresses stock returns and ESG scores for banks and financial services companies. The adjusted R square implies that the model has low explanatory power. However, the adjusted R square is the best in the previous table compared to this. Furthermore, the adjusted R squared shows a poor number, given the short time and even fewer companies with All-Stocks in the portfolio. The parameter estimate of the coefficient on Financial-Stocks is 0.139 after controlling for this regression model. However, the coefficient is not statistically significant with a five percentage points with a p-value as high as 0.226. Thus, CSR does not affect stock performance in the banking and financial services portfolio. Nevertheless, this thesis still examines whether different ESG portfolios have impacted during and after the crisis for banks and financial institutions.

Table 5. Financial-Stocks portfolio returns and ESG regression.

	Coefficients	Standard Error	t Stat	P-value
Intercept	0,139	0,114	1,225	0,226
ESG	-0,002	0,002	-0,906	0,369
Observation	54			
Adjusted R Square	-0,003			

This table presents regression results for the effect of ESG ratings on stock market returns during 2020 COVID-19 crisis. Financial-Stocks portfolio contains 54 firms where High portfolio consists of 3 stocks, A of 21, B of 20 and Low of 8 stocks. ESG scores varies between 2,79 and 82,79.

5.3 Variables

This chapter presents the econometric models. In addition, it will present the econometric variables. The relationship between CSR and earnings per share will be tested using the CAPM and the Fama-French three and five-factors models. Using three different regression models even provides a robust test. The necessary regression variables are presented in subsections 5.3.1-5.3.3. All continuous variables are winsorized at the lower and upper 1% levels to avoid significant outliers that would lead to biased results.

5.3.1 Capital Asset Pricing Model – CAPM

When Markowitz (1952) introduced the Modern Portfolio Theory, three students, Sharpe (1964), Lintner (1965), and Moss (1966), continued to explore the relationship between risk and return. Twelve years after the publication of Modern Portfolio Theory, the CAPM (Capital Asset Pricing Model) is based on the individual work of these three researchers. CAPM theory suggests that investors are willing to take on more risk only if they get a better return. Investors thus benefit from the risk exposure of the instruments and the time value of money. The CAPM has the following formula:

$$E(r) = r_f + \beta(r_m - r_f), \quad (1)$$

where $E(r)$ is the expected return of the asset, r_f is the risk-free rate, β is the asset's beta, and r_m is the expected return of the market. The authors note that the formula calculates the expected return of asset r which is the risk-free rate plus the asset's risk premium. The risk-free rate indicates the time value of the money function, while the asset's beta indicates the asset's market risk or systematic risk. Thus, systematic risk has a much more significant impact on the return of an asset than unsystematic risk, which can be diversified.

Bodie et al. (2014) note that the asset's beta (β) is compared to the assets in the market portfolio. A beta of 1.0 means that the asset is as volatile as the market and moves with the market. A beta value below 1.0 means that the asset is less volatile than the market, while a beta value above 1.0 means that the asset is more volatile than the market. Beta, therefore, measures the asset's relationship to the risk of the market portfolio. The following formula describes the beta of an asset:

$$\beta = \frac{Cov(r_i, r_m)}{\sigma_M^2} \quad (2)$$

where $Cov(r_i, r_m)$ is the covariance between returns of the asset with the market portfolio and σ_M^2 is the variance of the market portfolio.

Bodie et al. (2014) state that the CAPM is a basic empirical model for testing performance that is simple and effective for understanding financial markets. However, the CAPM is based on assumptions that are necessary for academic testing, but the model ignores many real-world implications because of these assumptions. For example, the model assumes that all market participants acting as investors have the same investment horizon and that all market participants act rationally. Thus, the model assumes that all investors are price takers, that there are no taxes or transaction costs associated with investing, that all investors are restricted to publicly traded assets and that investors can borrow and lend at the same risk-free rate. Therefore, they use

Markowitz's (1952) modern portfolio theory to search for optimal portfolios in terms of mean-variance.

5.3.2 Fama-French three-factor model

The CAPM model describes market risk or systematic risk, but Fama and French's three-factor model extends the CAPM model to include firm characteristics. The CAPM is a one-factor model, but Fama and French's model has three factors and has been shown empirically to have greater explanatory power. In 1996, Eugene Fama and Kenneth French's model was based on the CAPM. Fama, who was awarded the Nobel Prize in 2013, is one of the most important pioneers in the empirical analysis of asset pricing and extends the asset pricing model to include firm size and the book-to-market ratio as value factors, as their explanatory power for asset pricing has already been demonstrated. Fama and French's three-factor model explains the expected return on an asset. The formula is as follows:

$$R_{it} - R_{Ft} = \alpha_i + b_i(R_{Mt} - R_{Ft}) + s_iSMB_t + h_iHML_t + e_{it}, \quad (3)$$

Fama and French (1996) state that in this equation, R_{it} is the i return on the portfolio, R_{Ft} is the risk-free rate, $R_{it} - R_{Ft}$ is the excess return on the portfolio, which in this paper is the 3-month Euribor, α_i is the abnormal return, $R_{Mt} - R_{Ft}$ is the excess return on the market portfolio, SMB_t is the total factor premium, HML_t is the value factor premium and b_i, s_i, h_i are the factor coefficients. The size factor indicates the difference in return between a portfolio of small and large stocks as measured by market value. The value factor shows the difference in returns between a portfolio of high book-to-market stocks and a portfolio of low book-to-market.

The model assumes that firms with low capitalization and firms with high book-to-market ratios perform consistently in the market. Fama and French (1993) show that small-capitalization stocks tend to outperform large-capitalization stocks and that value-

oriented firms with high book-to-market ratios outperform firms with low book-to-market ratios. However, it is debatable whether the outperformance is due to market efficiency or inefficiency. Regarding market efficiency, the above-average performance explains the higher risk that a low capital and high book-to-market ratio entails in terms of the cost of capital. Bodie et al. (2014) note that on the other hand, in inefficient markets, market participants misprice the value of these companies, and some may benefit from the mispricing as prices adjust in the long run.

Kothari, Shanken, and Sloan (1995) show that average returns at high book-to-market ratios are weaker than Fama and French (1996). The authors argue that the data include surviving firms and not firms that have experienced bankruptcy. Thus, the data favors high book-to-market returns. Furthermore, Kothari et al. (1995) show that systematic risk does not explain returns and that beta has no explanatory power in Fama and French's three-factor model.

5.3.3 Fama-French five-factor model

Fama and French's three-factor model is perhaps the most widely used asset pricing model with factors in the financial world. As a result, various factors have extended and modified the model. In recent years, Fama and French (2015) have added more factors to the three-factor model. These include "profitability" and "investment." Fama and French find that all asset pricing models have a similar feature in the regression results. They note that when the model explains returns efficiently, the intercept is close to zero. Finally, they state that when the intercept is close to zero, the model performs well and explains expected returns.

In addition to the original three factors, the new model adds that companies with higher future earnings earn higher returns in the stock market and profitability. Jegadeesh and Titman (1993) show that the one-year momentum anomaly explains asset prices. The results suggest that the returns of the previous 12 months will continue in the coming

months. In other words: if a stock has produced good returns in the previous 12 months, it is likely to continue to do well in the future, and conversely, if a stock has produced lower returns in the previous 12 months, it is likely to remain low in the coming months. Thus, the CAPM and Fama and French's three-factor models do not explain the continuity of asset returns indicated by the momentum anomaly. As a result, Fama and French (2015) expand the Fama and French three-factor model to account for the momentum factor. The Fama and French five-factor model formula is as follows

$$R_{it} - R_{Ft} = \alpha_i + b_i(R_{Mt} - R_{Ft}) + s_iSMB_t + h_iHML_t + r_iRMW_t + c_iCMA_t + e_{it}, \quad (4)$$

where the RMW_t is the return spread of the most profitable firms minus the least profitable, CMA_t is the return spread of firms that invest conservatively minus aggressively and r_i, c_i are the factor coefficient and the remaining variables are the same as in Fama-French three-factor model (Equation 2).

6 Empirical analysis and results

This chapter will present the results from the empirical models and data introduced in the last chapter. Firstly, the chapter starts with the presentation and analysis of descriptive statistics. Later, the results of the different regression models and subsamples are reported and interpreted. In addition, the sensitivities to the risk factors are visible in each chapter. However, only the chapter on the five-factor model will discuss the sensitivities since they are so similar in each model. Finally, the regression results are shown for two different time periods, during the market crisis (18th February – 20th March 2020) and the post-crisis period (23rd March – 30th December 2020), to capture any differences in results due to the period.

6.1 Descriptive statistics

Tables 6 and 7 show the descriptive statistics of the variables. The sample includes 482 firms with available CSR data, financial data, and stock returns from Refinitiv ESG. There is an All-Stocks portfolio that does not include financial companies, but the Finance Stock portfolio consists only of these banking and financial companies. Equity returns are winsorized at 1%. Table 6 and 7 show that in the sample of High ESG (Low ESG) companies, the average return during the crisis in the All-Stocks portfolio is -1.48% (-1.42%) and ranges from -9.03 (-11.97%) to 3.45 (3.74%). The same data for the post-crisis period has been average 0.19% (0.39%), minimum -4.23% (-5.34%) and maximum 5.98% (4.91%). These results suggest that the companies with the Low ESG scores in the All-Stocks portfolio have underperformed the High ESG companies during the crisis but have outperformed the High ESG companies since the crisis. In the financial sector, however, companies behave differently.

Financial sector companies with the best ESG scores have fallen the most in both portfolios during the crisis and risen the second least after the crisis, with the worst rises

being for Low ESG companies. This could mean that financial companies do not weigh the difference between ESG companies very much. Surprisingly, the financial sector companies with the Low ESG scores on average have fallen the least during the crisis, and the Low ESG companies and the portfolio B companies in the All-Stocks portfolio have risen the most after the crisis.

Table 6. Descriptive statistics for All-Stocks portfolio.

	N	Mean	St. Dev.	Min	Median	Max
During Crisis						
High	67	-1,08 %	0,028	-9,03 %	-0,84 %	3,45 %
A	187	-1,17 %	0,028	-9,22 %	-0,75 %	2,29 %
B	165	-1,53 %	0,033	-10,83 %	-0,95 %	3,93 %
Low	63	-1,42 %	0,036	-11,97 %	-0,61 %	3,74 %
Post-Crisis						
High	67	0,19 %	0,013	-4,23 %	0,06 %	5,98 %
A	187	0,29 %	0,012	-4,35 %	0,21 %	5,75 %
B	165	0,39 %	0,014	-5,85 %	0,36 %	6,17 %
Low	63	0,39 %	0,013	-5,34 %	0,38 %	4,91 %

This table presents the descriptive statistics for the variables. The during crisis is from 18th February to 20th March 2020 and post-crisis period is from 23rd March to 30th December 2020. All-Stocks portfolio contains altogether 482 stocks with available data for stock returns and ESG scores from Refinitiv. High portfolio consists of 67 stocks, A of 187, B of 165 and Low of 63 stocks.

Table 7. Descriptive statistics for the Financial-Stocks portfolio.

	N	Mean	St. Dev.	Min	Median	Max
During Crisis						
High	4	-1,78 %	0,040	-13,99 %	-1,36 %	5,93 %
A	21	-1,44 %	0,036	-12,10 %	-0,69 %	5,49 %
B	21	-1,46 %	0,036	-12,67 %	-0,68 %	4,65 %
Low	8	-0,63 %	0,038	-11,73 %	-0,07 %	8,99 %
Post-Crisis						
High	4	0,16 %	0,023	-8,03 %	-0,01 %	8,84 %
A	21	0,22 %	0,017	-6,02 %	0,04 %	6,41 %
B	21	0,28 %	0,017	-7,25 %	0,19 %	8,00 %
Low	8	0,10 %	0,018	-6,98 %	0,15 %	7,21 %

This table presents the descriptive statistics for the variables. The during crisis is from 18th February to 20th March 2020 and post-crisis period is from 23rd March to 30th December 2020. Financial-Stocks portfolio contains altogether 54 stocks with available data for stock returns and ESG scores from Refinitiv. High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks.

6.2 Results from the CAPM

Next, this thesis discusses the results of the CAPM. The results are presented for both High ESG and Low ESG portfolios and A and B's difference portfolios. This thesis uses difference portfolios A, which include companies with ESG points between 75-51, and B, which include companies with ESG scores between 50-25, to improve the results and High ESG and Low ESG portfolios comparability. The A and B portfolios are designed to improve the results and comparability, which checks whether the performance of the High and Low portfolios is statistically different. This thesis uses OMX Nordic EUR GI index as a market yield and three-month Euribor as a risk-free rate. The variables are up to date because the 2020 data are assumed to be the latest publicly available data during the COVID-19 pandemic crisis.

Table 8 and 9 show the results of CAPM during the crisis (18th February 2020 – 20th March 2020) and after the crisis (23rd March 2020 – 30th December 2020). All alphas are expressed as an integer, as in similar studies for presentation purposes. Asterisks next to the numbers indicate the significance level: *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. The significance levels are presented in this study's results tables in the same way. P-values are in parentheses below the alphas. Adjusted R square measures the model's explanatory power and thus represents the goodness of fit of the model.

6.2.1 CAPM results from All-Stocks portfolio

The main point of table 8 is whether CSR could predict returns over the period or whether it underperformed the market. The adjusted R square implies that the CAPM has good explanatory power. The High ESG portfolio has the best adjusted R square with 0.935, while the Low ESG portfolio has an adjusted R square of 0.871.

As the results imply, portfolio A shows statistically significant alpha, 0.002 for the during crisis period. For example, the Low ESG portfolio shows an alpha of 0.001, while the High ESG portfolio shows 0,003 alpha in the post-crisis period. Therefore, the CAPM suggests that portfolio A, which includes companies with ESG points higher than 50 but below 75, outperforms the other portfolios during the crisis period, and Low ESG portfolios outperform in the post-crisis period.

However, extending the sample period to the post-crisis period, the Low ESG portfolio outperforms the High ESG portfolio. The High ESG portfolio loses significance. The period from the end of March to the end of December 2020 demonstrates when the COVID-19 crisis market crash has gone back from the dip.

As a result, the Low ESG portfolio yields 0.003 alpha, while the High ESG portfolio yields 0,000 alpha. Furthermore, these results are not significant for the High ESG portfolio. The adjusted R square implies that the CAPM also has good explanatory power. The High ESG portfolio has a higher adjusted R square with 0.865, while the Low ESG portfolio has an adjusted R square of 0.640.

The results suggest not accepting the hypotheses since the High ESG portfolio does not consistently overperform the Low ESG portfolio to conclude the CAPM. However, portfolio A performs better during the crisis period, including companies with higher ESG ratings. The Low ESG is overperforming the index in the post-crisis period.

A High ESG portfolio yields an alpha of 0.003 and a Low ESG portfolio of 0.001 during the crisis. However, the results are insignificant during crisis periods, although the results favor the High ESG portfolio. Using the CAPM, it can be concluded that the aggregate long-selling of High ESG stocks is not a particularly attractive strategy. The other portfolios produced statistically significant results, but the alpha was weak even for them. Table 8 presents the full regression results from the CAPM regression during crisis and post-crisis periods from the All-Stocks portfolio. Furthermore, the five-factor

model chapter is the only one discussing the factor loadings since they are similar in all the models.

Table 8. Regression results from the CAPM All-Stocks portfolio.

	Top ESG	A	B	Low ESG
During Crisis Period				
Alpha	0,003 [0,114]	0,002 ** [0,047]	-0,001 [0,793]	0,001 [0,625]
Beta	0,879 *** [0,000]	0,892 *** [0,000]	1,007 *** [0,000]	1,111 *** [0,000]
Adjusted R Square	0,935	0,982	0,874	0,871
Average Rp – Rf	-0,65 %	-0,74 %	-1,09 %	-0,99 %
Standard deviation	2,78 %	2,75 %	3,28 %	3,64 %
Sharpe ratio	-0,23	-0,27	-0,33	-0,27
Observation	24	24	24	24
Post Crisis Period				
Alpha	0,000 [0,470]	0,001 *** [0,000]	0,002 *** [0,000]	0,003 *** [0,000]
Beta	0,859 *** [0,000]	0,870 *** [0,000]	0,929 *** [0,000]	0,003 *** [0,000]
Adjusted R Square	0,865	0,949	0,826	0,640
Average Rp – Rf	0,19 %	0,29 %	0,40 %	0,40 %
Standard deviation	1,28 %	1,24 %	1,41 %	1,30 %
Sharpe ratio	0,148	0,236	0,284	0,307
Observation	199	199	199	199

This table presents the results for the CAPM during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. Financial-Stocks portfolio contains altogether 54 stocks with available data for stock returns and ESG scores from Refinitiv. High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.2.2 CAPM results from The Financial-Stocks portfolio

In this part, this thesis examines the relationship between Corporate Social Responsibility and stock performance during the crisis in the banking and finance industries. Table 9 shows the CAPM regression results, with the dependent variable being the securitized equity returns of banking and financial companies during the crisis (18th February 2020 – 20th March 2020) and after the crisis (23rd March 2020 – 30th December 2020).

As the results imply, there is a slight relationship between ESG scores and firm performance during and after the crisis. For example, the Low ESG portfolio yields 0,009 alpha, while the High ESG portfolio yields -0.001 alpha. After that, however, the High ESG portfolio loses significance. On the other hand, a Low ESG portfolio results are significant at the 5% level.

Therefore, the CAPM suggests that the Low ESG portfolio outperforms the High ESG significantly and yields much higher returns on the sample period. In addition, the Sharpe ratio is also moderately high for the Low ESG groups. CAPM also gives a good, adjusted R square for the Financial-Stock portfolio, implying that the model has good explanatory power. The High ESG portfolio has the best adjusted R square with 0.836, while the Low ESG portfolio has an adjusted R square of 0.732.

However, the High ESG ESG portfolio outperforms the market post-crisis period. The period from the end of March to December 2020 demonstrates when COVID-19 has healed from the sudden dip. The High ESG portfolio yields 0.004 alpha, while the Low ESG portfolio yields 0.003 alpha.

These results are positive but relatively small. The Sharpe is relatively high in all four portfolios. Nevertheless, CAPM does not have a good, adjusted R square on the post-crisis period in the Financial-Stock portfolio, implying that the model does not have good

explanatory power. The High ESG portfolio has a lower adjusted R square of 0.035, while the Low ESG portfolio has an adjusted R square of 0.061, but they both are relatively low.

To conclude the CAPM for the Financial-Stock portfolio, the results suggest accepting the second hypothesis from the Financial-Stock part of the hypothesis since the High ESG portfolio overperforms the Low ESG portfolio post-crisis period. The High ESG portfolio shows an alpha of 0.004 compared to the Low ESG portfolio alpha of 0.003. The differences are minimal but positive between the two portfolios.

The results show that the CAPM successfully predicted returns post-crisis, but there were minimal excess returns. The pandemic affected different industries in different ways. In addition, the High ESG portfolio does not overperform during the crisis period. The results suggest that the CAPM failed to predict returns during the crisis period and that the High ESG portfolio underperformed the market and had lower returns than the Low ESG portfolio.

Table 9 presents the full regression results from the CAPM regression during crisis and post-crisis periods from the Financial-Stock portfolio.

Table 9. Regression results from the CAPM Financial-Stocks portfolio.

	Top ESG	A	B	Low ESG
During Crisis Period				
Alpha	0,000 [0,755]	0,002 [0,469]	0,002 [0,367]	0,009 [0,046]
Beta	1,222 *** [0,000]	1,143 *** [0,000]	1,152 *** [0,000]	0,009 *** [0,000]
Adjusted R Square	0,863	0,919	0,954	0,732
Average $R_p - R_f$	-1,35 %	-1,00 %	-1,03 %	-0,20 %
Standard deviation	4,00 %	3,63 %	3,60 %	3,78 %
Sharpe ratio	-0,16	-0,20	-0,30	-0,26
Observation	24	24	24	24
Post Crisis Period				
Alpha	0,035 ** [0,006]	0,061 *** [0,006]	0,114 *** [0,007]	0,061 ** [0,005]
Beta	0,330 ** [0,005]	0,004 *** [0,000]	0,433 *** [0,000]	0,330 *** [0,000]
Adjusted R Square	0,865	0,949	0,826	0,640
Average $R_p - R_f$	0,19 %	0,29 %	0,40 %	0,40 %
Standard deviation	1,28 %	1,24 %	1,41 %	1,30 %
Sharpe ratio	0,148	0,236	0,284	0,307
Observation	199	199	199	199

This table presents the results for the CAPM during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. Financial-Stocks portfolio contains altogether 54 stocks with available data for stock returns and ESG scores from Refinitiv. High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.3 Results from the Fama-French three-factor model

The second chapter presents the alphas of Fama and French's three-factor model. The results are presented for both High ESG and Low ESG portfolios and A and B's difference portfolios. This thesis uses difference portfolios A, which include companies with ESG points between 75-51, and B, which include companies with ESG scores between 50-25, to improve the results and High ESG and Low ESG portfolios comparability. The A and B portfolios are designed to improve the results and comparability, which checks whether the performance of the High and Low portfolios is statistically different.

Tables 10 and 11 below show the results of the three-factor model. All alphas have been presented and expressed as integer, as has been done in similar studies. Asterisks next to the numbers indicate the significance level: *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. The significance levels are presented in this study's results tables in the same way. P-values are in parentheses below the alphas. Adjusted R square measures the model's explanatory power and thus represents the goodness of fit of the model.

6.3.1 Fama-French three-factor model results from All-Stocks portfolio

To note, the three-factor model offers similar results to the CAPM. The High ESG portfolio loses to the Low ESG portfolio yielding higher returns (less negative alpha) during the crisis period. Similarly, the A and B portfolio implies negative returns in a statistically significant manner.

The High ESG sample has an alpha of -0.012, which is lower than the one in CAPM (-0.001), while the Fama French three-factor model is statistically significant at a 1% level. The Low ESG portfolio also shows a negative alpha of -0.006 in a statistically significant manner. Further, portfolios A and B are also statistically significant, with -0,010 and -

0.008 alpha. These results are like Bae et al. (2020), who provide no evidence that CSR affected stock returns during the crash.

Furthermore, expanding the sample period to the post-crisis period (23rd March 2020 – 30th December 2020) the Low ESG portfolio starts to overperform the High ESG; only the Low ESG portfolio demonstrates statistically significant values at the 10 % level. The Low ESG portfolio yields 0.001 alpha, while the High ESG portfolio yields 0.000 alpha. Portfolios A and B alphas grow to 0.000 and 0.001 from the during crisis period.

However, the results indicate that the High ESG portfolio and the A and B portfolios lose their significance for the post-crisis periods. The during crisis period favors the Low ESG portfolio with firms with lower than 25 points ESG. The Low ESG shows an alpha of 0.001 compared to the High ESG portfolios' alpha of 0.000. Also, the results are consistent throughout the periods since the Low ESG portfolio overperforms the post-crisis periods.

To conclude the three-factor model, the results suggest rejecting both hypotheses since the alphas between the two counterparts are consistent between the periods in a statistically significant manner, and the Low ESG portfolio shows that they can generate better returns.

Table 10 presents the full regression results from the Fama-French regression during crisis and post-crisis periods from the All-Stocks portfolio. Furthermore, the five-factor model chapter is the only one discussing the factor loadings since they are similar in all the models.

Table 10. Regression results from the three-factor model in All-Stocks portfolio.

	Top ESG	A	B	Low ESG
During Crisis Period				
Alpha	-0,012 *** [0,000]	-0,010 *** [0,000]	-0,008 *** [0,001]	-0,006 * [0,099]
Beta	0,008 *** [0,000]	0,008 *** [0,000]	0,012 *** [0,000]	0,011 *** [0,000]
SMB	-0,006 *** [0,003]	-0,002 [0,282]	0,008 *** [0,001]	0,003 [0,336]
HML	-0,005 ** [0,049]	-0,002 [0,358]	-0,006 ** [0,045]	-0,001 [0,836]
Adjusted R Square	0,918	0,911	0,931	0,847
Average Rp – Rf	-2,08 %	-2,17 %	-2,53 %	-2,42 %
Standard deviation	2,78 %	2,75 %	3,28 %	3,64 %
Sharpe ratio	-0,75	-0,79	-0,77	-0,67
Observation	24	24	24	24
Post Crisis Period				
Alpha	0,000 [0,739]	0,000 [0,329]	0,001 [0,169]	0,001 [0,080]
Beta	0,007 *** [0,000]	0,008 *** [0,000]	0,009 *** [0,000]	0,007 *** [0,000]
SMB	-0,004 *** [0,001]	0,000 [0,815]	0,004 *** [0,004]	0,004 *** [0,004]
HML	-0,003 *** [0,000]	-0,004 *** [0,000]	-0,004 *** [0,000]	-0,003 *** [0,000]
Adjusted R Square	0,756	0,774	0,713	0,503
Average Rp – Rf	0,15 %	0,26 %	0,37 %	0,36 %
Standard deviation	1,25 %	1,22 %	1,40 %	1,29 %
Sharpe ratio	0,12	0,21	0,26	0,28
Observation	199	199	199	199

This table presents the results for the Fama-French three-factor model during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. All-Stocks portfolio contains altogether 482 firm. High portfolio consists of 67 stocks, A of 187, B of 165 and Low of 63 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.3.2 Fama-French three-factor model the Financial-Stocks portfolio

Table 11 shows the preliminary results, where stock returns are described using securitized financial and banking company returns during the crisis (18th February to 20th March) and after the crisis (23rd March to 30th December). It should be noted that the three-factor model yields similar results to the CAPM model. The High ESG portfolio has the best adjusted R square with 0.871, while the Poor ESG portfolio has an adjusted R square of 0.744. During the crisis, the Sharpe ratio of each group was negative, as expected. However, the High ESG portfolio loses to the Low ESG portfolio only during the crisis period in a statistically significant way: the alpha of the High ESG sample is -0.012, lower than the CAPM alpha (-0.012), but only Fama-French three-factor model is statistically significant at the 5% level. On the other hand, the alpha of the Low ESG portfolio is negative at -0.006 but not statistically significant. These results are like those of Bae et al. (2020).

Now this thesis will investigate the post-crisis period. Table 11 shows that the adjusted R square is weak, so the model does not work. However, the results can be examined. Sharpe is positive in all four groups, which is to be expected for the post-crisis period. Alpha is tiny but positive, with above-market excess returns in all four groups, although not statistically significant at the 5% significance level. The High ESG portfolio yields 0.000 alpha, while the Low ESG portfolio yields 0.000 alpha. The portfolio's A and B alpha is 0,000 and 0,001. However, the results point out that all portfolios lose their significance during post-crisis period.

During the crisis, the Financial-Stock portfolio favored the Low ESG portfolio, showing an alpha of -0.006 compared to the High ESG alpha of -0.012. However, the results are inconsistent throughout the periods since the High ESG started to overperform in the post-crisis period. However, they are not overperforming in a statistically significant manner. Therefore, to conclude the three-factor model, the results suggest accepting the second on the Financial-Stocks portfolio part of the hypothesis since the alphas

between the two portfolios are not statistically significant, and the High ESG portfolio shows that they can generate better returns. Table 11 presents the full regression results from the Fama-French regression during crisis and post-crisis periods from the Financial-Stocks portfolio. Furthermore, the five-factor model chapter is the only one discussing the factor loadings since they are similar in all the models.

Table 11. Regression results from the three-factor model in Financial-Stocks portfolio.

	Top ESG	A	B	Low ESG
During Crisis Period				
Alpha	-0,012 *** [0,004]	-0,010 *** [0,005]	-0,009 *** [0,007]	-0,006 [0,238]
Beta	0,009 *** [0,000]	0,010 *** [0,000]	0,011 *** [0,000]	0,009 *** [0,000]
SMB	-0,010 *** [0,004]	-0,006 * [0,051]	-0,003 [0,357]	-0,011 ** [0,019]
HML	0,007 [0,128]	-0,001 [0,735]	-0,002 [0,527]	-0,002 [0,755]
Adjusted R Square	0,871	0,869	0,882	0,744
Average Rp – Rf	-2,78 %	-2,44 %	-2,46 %	-1,63 %
Standard deviation	4,00 %	3,63 %	3,60 %	3,78 %
Sharpe ratio	-0,69	-0,67	-0,68	-0,43
Observation	24	24	24	24
Post Crisis Period				
Alpha	0,000 [0,994]	0,000 [0,759]	0,001 [0,282]	0,000 [0,819]
Beta	0,004 *** [0,004]	0,004 *** [0,000]	0,004 *** [0,000]	0,003 *** [0,008]
SMB	0,002 [0,517]	0,003 [0,260]	0,001 [0,780]	0,002 [0,579]
HML	-0,002 [0,302]	-0,001 [0,336]	0,000 [0,831]	0,001 [0,662]
Adjusted R Square	0,035	0,066	0,093	0,044
Average Rp – Rf	0,13 %	0,18 %	0,25 %	0,06 %
Standard deviation	2,28 %	1,75 %	1,73 %	1,76 %
Sharpe ratio	0,06	0,10	0,14	0,03
Observation	199	199	199	199

This table presents the results for the Fama-French three-factor model during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. Financial-Stocks portfolio contains altogether 54 stocks. High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.4 Fama-French five-factor model

This chapter presents the alphas of Fama and French's five-factor model. The results are shown for both the High ESG portfolio and a comparison with the worst ESG portfolio. The other two different portfolios, A and B, are designed to further improve the results and their comparability. These different portfolios are used to check whether the performance of the different portfolios is statistically different. The five-factor model is the primary model of this thesis. Therefore, the chapter discusses the sensitivity factors in its subchapter. Tables 12 and 13 below show the results of the five-factor model. All alphas have been expressed as integer, as has been done in other similar studies. Asterisks next to the numbers indicate the significance level: *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. The significance levels appear in the same way in this study's results tables. P-values are in parentheses below the alphas. Adjusted R square measures the model's explanatory power and thus represents the goodness of fit of the model.

6.4.1 Fama-French five-factor model All-Stocks portfolio

The adjusted R square is the best in the five-factor model compared to the CAPM and three-factor model. The five-factor model offers similar results to the CAPM and Fama and French three-factor model. The High ESG portfolio is losing to the benchmark portfolio of Low ESG in a statistically significant manner during the crisis period. The High ESG sample has an alpha of -0.010. The Low ESG portfolio also shows a negative alpha of -0.007 in a statistically significant manner. These results are like Bae et al. (2020), who show that the High ESG portfolios did not perform as well as the Low ESG portfolios during the COVID-19 crisis in 2020. Furthermore, the post-crisis period of the study shows that portfolio A, which includes firms with ESG scores above 50 but below 75, has started to overperform the Low ESG portfolio. In the post-crisis period, portfolio A generates 0.773 alpha. In comparison, the Low ESG portfolio generates 0.001 alpha, so

both portfolios lose their statistical significance, demonstrating a massive difference in the returns but not statistically significant. The High ESG portfolio increases to 0.000 alpha compared to the During Crisis period.

To conclude the five-factor model in the All-Stocks portfolio, the results suggest not accepting the hypotheses since there are no excess returns during and post-crisis period on the All-Stocks portfolio. The High ESG portfolio is therefore losing consistently to the Low ESG portfolio. However, the results favor portfolio A, which includes companies with ESG scores between 75 and 50 in the post-crisis period. In the post-crisis period, the High ESG had an alpha of 0.000 compared to the Low ESG portfolio's alpha of 0.001. However, the two final sample periods favor the Low ESG portfolio again. These results are consistent with the three different empirical models.

Table 12. Regression results from the five-factor model in All-Stocks portfolio.

	Top ESG	A	B	Low ESG
During Crisis Period				
Alpha	-0,010 *** [0,000]	-0,009 *** [0,001]	-0,007 *** [0,007]	-0,007 * [0,080]
Adjusted R Square	0,942	0,922	0,925	0,848
Average Rp – Rf	-2,08 %	-2,17 %	-2,53 %	-2,42 %
Standard deviation	2,78 %	2,75 %	3,28 %	3,64 %
Sharpe ratio	-0,75	-0,79	-0,77	-0,67
Observation	24	24	24	24
Post Crisis Period				
Alpha	0,000 [0,908]	0,773 [0,391]	0,001 [0,290]	0,001 [0,127]
Adjusted R Square	0,761	0,773	0,720	0,508
Average Rp – Rf	0,15 %	0,26 %	0,37 %	0,36 %
Standard deviation	1,25 %	1,22 %	1,40 %	1,29 %
Sharpe ratio	0,123	0,211	0,262	0,282
Observation	199	199	199	199

This table presents the results for the Fama-French five-factor model without factor loadings during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. All-Stocks portfolio contains altogether 482 firm. High portfolio consists of 67 stocks, A of 187, B of 165 and Low of 63 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.4.2 Fama-French five-factor model Financial-Stocks portfolio

The pandemic affected different sectors in different ways. To investigate the relationship between CSR and stock returns during the crisis differed between the banking and financial sectors, this thesis split the sample into different industries using the Fama-French five-factor model. The five-factor model offers similar results to the CAPM and Fama and French three-factor model for the Financial-Stocks portfolio. The adjusted R square implies that the five-factor model has good explanatory power. The High ESG portfolio is losing to the Low ESG portfolio. The High ESG portfolio has an alpha of -0.008 while the Low ESG portfolio is 0.005. However, the Low ESG portfolio loses significance. Portfolios A and B show a negative alpha of -0.009 and -0.008, also statistically significant.

However, the post-crisis period of the study shows again that the High ESG starts to overperform the Low ESG portfolio. The High ESG generates 0.000 alpha, while the Low ESG portfolio also generates 0.000 alpha. Nevertheless, both portfolios lose their statistical significance again, demonstrating a massive difference in the returns but they are not statistically significant. Portfolios A and B increase to 0.000 and 0.001 alpha, demonstrating a difference in the returns but not statistically significant.

To conclude the five-factor model, the results suggest accepting the second on the Financial-Stock portfolio part of the hypothesis since the results suggest that there might be excess returns in the post-crisis period in the financial sector, although they are not statistically significant. However, the results favor the Low ESG group in the post-crisis sample period. The Low ESG in the post-crisis period has an alpha of 0.000 compared to the High ESG alpha of 0.000, yet Low ESG portfolios are not overperforming statistically. It would be worth checking that if the portfolio A, which includes companies that have ESG points between 50 to 75, performs better than other portfolios, it will imply that High ESG might perform better during and post-crisis periods.

Table 13. Regression results from the five-factor model in Financial-Stocks portfolio.

	Top ESG	A	B	Low ESG
During Crisis Period				
Alpha	-0,008 ** [0,027]	-0,009 *** [0,010]	-0,008 ** [0,026]	-0,005 [0,380]
Adjusted R Square	0,897	0,906	0,892	0,737
Average Rp – Rf	-2,78 %	-2,44 %	-2,46 %	-1,63 %
Standard deviation	4,00 %	3,63 %	3,60 %	3,78 %
Sharpe ratio	-0,69	-0,67	-0,68	-0,43
Observation	24	24	24	24
Post Crisis Period				
Alpha	0,000 [0,946]	0,000 [0,810]	0,001 [0,379]	0,000 [0,728]
Adjusted R Square	0,029	0,060	0,095	0,039
Average Rp – Rf	0,13 %	0,18 %	0,25 %	0,06 %
Standard deviation	2,28 %	1,75 %	1,73 %	1,76 %
Sharpe ratio	0,058	0,101	0,142	0,033
Observation	199	199	199	199

This table presents the results for the Fama-French five-factor without model without factor loadings during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. Financial-Stocks portfolio contains altogether 54 stocks with available data for stock returns and ESG scores from Refinitiv. High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.4.3 Factor loadings on the five-factor model All-Stocks portfolio

The adjusted R square is the best in the five-factor model compared to the CAPM and three-factor model. Therefore, the size, value, profitability, and investment factors improve the results. In addition, the beta coefficients are statistically significant and relatively close to each other (0.92 to 1.18), signifying that the High ESG and the Low ESG returns move in the same direction as the market but are a bit more defensive.

The size factor (SMB) is positive in the Low ESG group and portfolios A and B during and post-crisis period. However, the High ESG group gives exceptional results, with a negative size factor of -0.001 during crisis and -0.003 post-crisis, thus allowing us to observe different effects depending on whether the portfolio contains High ESG

companies. The size factor is statistically significant at the 1% level only for portfolio B, including companies with ESG scores between 50 and 25, during crisis period and High ESG post-crisis period. In Fama and French (1996), the size factor is expected to be positive, and stocks with a large market capitalization are expected to generate lower returns than stocks with a smaller market capitalization. Therefore, the model assumes that the High ESG portfolio has superior performance.

The value factor (HML) is negative in all portfolios, not depending on the period. The study by Fama and French (1996) shows that this is an assumed relationship, and these results suggest that when growth stocks outperform the value stocks, the portfolio is doing good. However, the value factor loses significance for the Low ESG portfolio, while the results for the High ESG group remain significant at the 1% level during and post-crisis.

The profitability factor (RMW) is negative for the Low ESG portfolio during and post-crisis. On the other hand, the High ESG portfolio achieves negative values during the crisis but changes to positive in the post-crisis period. However, all portfolio remains statistically insignificant. These results are not in line with the previous studies, where profitability should positively affect the returns, and it means that when the most profitable stocks are overperforming the least profitable stocks, this portfolio is doing badly during the crisis period. However, in the post-crisis period, the High ESG portfolio would do better in more profitable stocks.

The investment factor (CMA) is positive for all portfolios during a crisis, excluding the Low ESG portfolio. Fama and French's (1996) study shows that this factor suggests that this portfolio is good when firms invest conservatively minus aggressively, which is valid for all portfolios except Low ESG. However, the Low ESG portfolio loses significance during the crisis period. In the post-crisis period, the investment factor is again positive for the High ESG portfolio and negative for the Low ESG portfolio, and these results are significant at a 1% level.

Table 14. The five-factor model loadings for All-Stocks portfolio.

	Top ESG		A		B		Low ESG	
During Crisis Period								
Alpha	-0,010	***	-0,009	***	-0,007	***	-0,007	*
	[0,000]		[0,001]		[0,007]		[0,080]	
Beta	0,009	***	0,009	***	0,012	***	0,012	***
	[0,000]		[0,000]		[0,000]		[0,000]	
SMB	-0,001		0,002		0,008		0,003	
	[0,749]		[0,448]		[0,008]		[0,537]	
HML	-0,011	***	-0,007	**	-0,007		-0,004	
	[0,002]		[0,047]		[0,111]		[0,495]	
RMW	-0,001		-0,003		0,000		-0,016	
	[0,792]		[0,604]		[0,985]		[0,158]	
CMA	0,015	***	0,010	*	0,003		-0,007	
	[0,008]		[0,082]		[0,664]		[0,531]	
Post Crisis Period								
Alpha	0,000		0,773		0,001		0,001	
	[0,908]		[0,391]		[0,290]		[0,127]	
Beta	0,007	***	0,007	***	0,009	***	0,007	***
	[0,000]		[0,000]		[0,000]		[0,000]	
SMB	-0,003	***	0,000		0,003		0,004	
	[0,003]		[0,686]		[0,016]		[0,013]	
HML	-0,004	***	-0,003	**	-0,003	*	-0,002	
	[0,001]		[0,011]		[0,052]		[0,173]	
RMW	0,003		0,001		-0,002		-0,003	
	[0,110]		[0,509]		[0,447]		[0,345]	
CMA	0,003	*	-0,001		-0,006	**	-0,005	
	[0,094]		[0,426]		[0,014]		[0,090]	

This table presents the results for the Fama-French five-factor models factor loadings during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. All-Stocks portfolio contains altogether 482 firm. High portfolio consists of 67 stocks, A of 187, B of 165 and Low of 63 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

6.4.4 Factor loadings on the five-factor model Financial-Stock portfolio

The adjusted R square is the best in the five-factor model compared to the CAPM and three-factor model. Therefore, the size, value, profitability, and investment factors improve the results. In addition, the beta coefficients are statistically significant and

relatively close to each other (0.92 to 1.18), signifying that the High ESG and the Low ESG returns move in the same direction as the market but are a bit more defensive. The size factor (SMB) is positive in the Low ESG group and portfolios A and B during and post-crisis. However, the High ESG group gives exceptional results, with a negative size factor of -0.002 during crisis and 0.002 post-crisis, thus allowing us to observe different effects depending on whether the portfolio contains High ESG companies. The size factor is statistically significant at the 1% level only for portfolio B, including companies with ESG scores between 50 and 25 during the crisis and High ESG post-crisis periods. In Fama and French (1996), the size factor is positive, and stocks with a large market capitalization are expected to generate lower returns than stocks with a smaller market capitalization. Therefore, the model assumes that the High ESG portfolio has superior performance.

The value factor (HML) is negative in all portfolios, not depending on the period. The study by Fama and French (1996) shows that this is an assumed relationship, and these results suggest that when growth stocks outperform the value stocks, the portfolio is doing better. However, the value factor loses significance for the Low ESG portfolio, while the results for the High ESG group remain significant at the 1% level during and post-crisis. The profitability factor (RMW) harms the Low ESG portfolio during and post-crisis. On the other hand, the High ESG portfolio achieves negative values during the crisis but changes positively in the post-crisis period. However, all portfolio remains statistically insignificant. These results are not in line with the previous studies, where profitability should positively affect the returns, and it means that when the most profitable stocks are overperforming the least profitable stocks, this portfolio is doing badly during the crisis period. However, in the post-crisis period, the High ESG portfolio would do better in more profitable stocks.

The investment factor (CMA) is positive for all portfolios during a crisis, excluding the Low ESG portfolio. Fama and French's (1996) study shows that this factor suggests that this portfolio is good when firms invest conservatively minus aggressively, which is valid for all portfolios except Low ESG. However, the Low ESG portfolio loses significance

during the crisis period. In the post-crisis period, the investment factor is again positive for the High ESG portfolio and negative for the Low ESG portfolio, and these results are significant at a 1% level.

Table 15. The five-factor model loadings for the Financial-Stocks portfolio.

	Top ESG		A		B		Low ESG
During Crisis Period							
Alpha	-0,008 ** [0,027]		-0,009 *** [0,010]		-0,008 ** [0,026]		-0,005 [0,380]
Beta	0,010 *** [0,000]		0,012 *** [0,000]		0,012 *** [0,000]		0,010 *** [0,000]
SMB	-0,002 [0,624]		0,000 [0,918]		0,002 [0,591]		-0,006 [0,309]
HML	-0,002 [0,717]		-0,012 ** [0,022]		-0,010 * [0,080]		-0,009 [0,293]
RMW	-0,002 [0,814]		-0,018 ** [0,043]		-0,010 [0,275]		-0,013 [0,385]
CMA	0,023 ** [0,025]		0,012 [0,169]		0,010 [0,272]		0,007 [0,618]
Post Crisis Period							
Alpha	0,000 [0,946]		0,000 [0,810]		0,001 [0,379]		0,000 [0,728]
Beta	0,004 *** [0,008]		0,004 *** [0,001]		0,003 *** [0,004]		0,003 ** [0,028]
SMB	0,002 [0,582]		0,003 [0,309]		0,000 [0,975]		0,001 [0,724]
HML	-0,002 [0,648]		-0,001 [0,641]		0,004 [0,198]		0,003 [0,376]
RMW	-0,004 [0,561]		-0,004 [0,494]		0,005 [0,388]		0,001 [0,906]
CMA	-0,003 [0,641]		-0,003 [0,632]		-0,007 [0,161]		-0,005 [0,362]

This table presents the results for the Fama-French five-factor models factor loadings during crisis period from 18th February to 20th March 2020 and post-crisis period from 23rd March to 30th December 2020. Financial-Stocks portfolio contains altogether 54 stocks with available data for stock returns and ESG scores from Refinitiv. High portfolio consists of 4 stocks, A of 21, B of 21 and Low of 8 stocks. Statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

7 Discussion and conclusions

This paper links Corporate Social Responsibility, a hot trend in financial markets today, with stock market returns during the market crisis caused by the COVID-19 pandemic. Indeed, the pandemic is an unprecedented and exogenous shock that has increased attention on corporate social and environmental commitment, allowing this thesis to investigate whether CSR increases value in bad times. Both CSR and ESG are complementary, and their importance in the market increases with asset size. This paper examines this trend in investment during the COVID-19 pandemic. This section of the paper discusses the results of the empirical part and combines them with the theoretical part. It answers whether CSR matters in times of crisis and whether the High ESG instrument can provide investors with better excess returns than the Low ESG portfolio. This finding is also valid in the post-crisis period and the banking and financial institutions sectors.

In the empirical part, this thesis examines a sample of 536 Nordic companies using CSR data provided by the service provider Thomson Refinitiv ESG during the pandemic stock market crash (February 18th to March 20th, 2020) and afterward (March 23rd to December 30th, 2020), and find no evidence that CSR affected stock returns. The Fama-French five-factor model shows that High ESG portfolios return slightly less during the crisis than Low ESG portfolios. High ESG portfolios return a negative alpha of -0.010, while Low ESG portfolios return a negative alpha of -0.007. These results are significant for High ESG and Low ESG portfolios and the two different portfolios, A, which includes companies with ESG scores between 75 and 51, and B, which includes companies with ESG scores between 50 and 25, so slightly lower ESGs than portfolio A. The different portfolios improve the results and their comparability further and check if the performance in the different portfolios is statistically different. These results are like Bae et al. (2020), who show that CSR is not an effective way to protect shareholder wealth from the harmful effects of crisis during a crisis. However, when the sample period is extended from the end of March to December 2020, i.e., the post-crisis period, the alpha

for portfolio A is 0.773, while the alpha for the Low ESG portfolio is 0.001, and the alpha for the High ESG portfolio is 0.000. All portfolios lose significance during this period.

Furthermore, when the sample period is restricted to a specific industry, the banking and financial sector, during the stock market crash (February 18th to March 20th, 2020), the High ESG portfolio has an alpha of negative -0.008, while the Low ESG portfolio has an alpha of negative -0.005. These results are significant at the 5% level for the High ESG portfolio but not for the Low ESG portfolio. Thus, the portfolio gap increased in favor of the Low ESG portfolio, but only minimally. Finally, after a pandemic-like stock market crash (March 23rd to December 30th, 2020), the financial sector observed excess returns in the High ESG portfolio with a portfolio alpha of 0.000 compared to 0.000 for the Low ESG portfolio. However, these are not statistically significant at the 5% level.

This paper presents evidence that CSR has not affected stock returns. The results are consistent even after accounting for different periods, industries, and other stress factors. Thus, as previous studies show, socially responsible investing does not yield better alpha than investing in a poor ESG company. However, this article is an essential contribution for researchers studying ESG stocks. Previous studies on ESG and socially responsible investing suffer from an endogeneity problem, as variables describing the demand for social responsibility are likely correlated with performance variables (Nguyen et al., 2020; Kim et al., 2019; Griffin et al., 2020; Boubakri et al. 2016). The advantage of this study is that it exploits the unexpected increase in demand for CSR caused by the pandemic. Thus, it can be argued that the results are in line with previous research on ESG and CSR, which suggests that there may be a mismatch between CSR orientation (ratings) and actual performance.

As discussed in the theory section, CSR and ESG are relatively new and growing trends. Both have grown significantly since the 2009 financial crisis. The unique data in this thesis shows that previous crisis could not have been used to study the unexpected growth in demand for CSR investment because, during previous crisis, CSR was not as

important a part of the investment as it is today. Thus, the sample period of the pandemic crisis from February 18, 2020, reflects the start of ESG and CSR investment during the crisis. The results correlate with the market, which may be influenced by the short sample period. The CSR market and instruments are still evolving, and the COVID-19 pandemic crisis is not yet over and did not necessarily affect ESG companies, which may explain the regression results. The shorter the sample period, the worse the regressions perform. As the sector evolves after 2009, ESG companies will perform better as evidence and methodologies evolve with the market.

The second objective is to examine the differences between High ESG and Low ESG strategies in the banking and financial sector. Previous studies exclude banking and financial institutions from the industry analysis due to their different debt financing characteristics and unique regulatory environment. This thesis will include them and see if they behave differently, which will provide an opportunity to complement the original research. For example, Bae et al. (2020) find no evidence that CSR affects stock returns across industries, but the study excludes banking and financial institutions. On the other hand, Lins et al. (2017) find that returns of high CSR firms are significantly higher in times of crisis, primarily when they are headquartered in regions associated with higher levels of social trust, and this finding holds when using industry-specific CSR scores.

In the empirical part of this dissertation, the ESG sample group is divided into different categories in terms of their scores, time, and industry. No category shows an economically and statistically significant alpha, i.e., there is no significant overcapacity, but the portfolio correlates with the market. In addition, the differences between the High ESG class and the Low ESG class were not significant during the crisis, and there are many different reasons for this: a short period of only one month; covid itself is not over but continues, and many effects can be far-reaching; the COVID-19 pandemic crisis did not necessarily in itself affect ESG companies and positively or negatively. When the sample is extended after the dip from March 23rd, 2020, to the end of December 30th, 2020, the same categories now show positive returns, but these are not statistically

significant. For example, portfolio A produces 0.773 alpha, while the banking and financial institution category in the High ESG strategy yields 0.000 alpha. However, these are not statistically significant at any level. Thus, the inclusion of environmental considerations affects the results economically but not statistically. These results are like those of Bae et al. (2020) but differ from Lins et al. (2017). The results show that the share of Corporate Social Responsibility in shareholder wealth was, on average, negligible during the COVID-19 stock market crisis. This finding is valid using CSR points, CSR components, and industry-level CSR.

This thesis and its findings provide answers for investors considering socially responsible investments, both in times of economic crisis and in regular times. The results suggest that for investors considering socially responsible investments, in times of crisis, CSR is not an effective means of protecting shareholder wealth from the adverse effects of the crisis, suggesting that there may be a mismatch between CSR orientation (ratings) and actual actions. From March 23rd to December 30th, 2020, the remainder of the period shows that there needs to be caution about drawing clear or absolute conclusions about the value of CSR in times of crisis. The pandemic is an unprecedented external shock that has heightened attention to companies' social and environmental commitment. However, there is no evidence yet that socially responsible investments can protect against the effects of the crisis, but the study's timeframe is comparatively short, and the COVID-19 crisis itself is not yet over. In other words, this thesis provides evidence that investors do not consistently earn excess returns if investors use long ESG positives and short Low ESG as their investment strategy.

In conclusion, financial performance and resilience are not necessarily mutually exclusive when investing in ESG positive companies during a crisis, but they do not necessarily generate additional returns. Thus, it is possible to do well in the investment landscape, and simultaneously, ESG stocks offer an available instrument for this. This thesis suggests that investors can be satisfied with financial performance when choosing companies that incorporate ESG.

The results cover only the Nordic stock markets of Finland, Sweden, Norway, and Denmark, so extending the results beyond the Nordic countries is misleading. However, as the Nordic region is the leading and most dominant market for ESG and CSR after the US, it provides the most comprehensive research data in this area. Another limitation is the available data on corporate ESG. This thesis focuses on the most recent crisis and only on the one year (February 2020-December 2020). As the ESG field evolves, more and more time-series data will become available to improve the performance axis results. It is worth mentioning that the data should be free of survival bias. However, as the data is collected manually from many different databases, some stocks may be excluded from this thesis. The problem is that there is no comprehensive way to collect all available ESG data. Like Bae et al. (2020), many studies have obtained the most appropriate dataset.

Future research on ESG and CSR investors in times of crisis could extend the review timeframe, and hopefully, many companies will have more information on their environmental impacts. As the ESG equity sector grows, more data will become available, making it easier to do the manual work of gathering information on strategies. In addition, over time, much more data will become available on ESG performance, and more companies will become available that operate according to environmental impacts.

Future research could also focus on a more accurate assessment of socially responsible stocks, for example, by empirically measuring sustainable credit rating providers to select the right socially responsible companies. Unfortunately, there is still no answer as to what is socially responsible. Fortunately, initiatives such as the EU taxonomy have the potential to harmonize the sector. Future studies based on this thesis could explore how investors value non-financial characteristics and financial performance differences.

References

- Albuquerque, R., Koskinen, Y., Yang, S., & Zhang, C. (2020). Resiliency of Environmental and Social Stocks: An Analysis of the Exogenous COVID-19 Market Crash. *The Review of Corporate Finance Studies*, 9(3), 593–621. <https://doi.org/10.1093/rcfs/cfaa011>
- Aras, G., Aybars, A., & Kutlu, O. (2010). Managing corporate performance. *International Journal of Productivity and Performance Management*, 59(3), 229–254. <https://doi.org/10.1108/17410401011023573>
- Bae, S., Chang, K. & Yi, H. (2018a). Corporate social responsibility, credit rating, and private debt contracting: New evidence from syndicated loan market. *Review of Quantitative Finance and Accounting*, 50(1), 261–299. <https://doi.org/10.1007/s11156-017-0630-4>
- Bae, K. H., el Ghouli, S., Gong, Z. J., & Guedhami, O. (2021). Does CSR matter in times of crisis? Evidence from the COVID-19 pandemic. *Journal of Corporate Finance*, 67. <https://doi.org/10.1016/j.jcorpfin.2020.101876>
- Barnea, A. & Rubin, A. (2010). Corporate Social Responsibility as a Conflict Between Shareholders. *Journal of Business Ethics*, 97(1), 71–86. <https://doi.org/10.1007/s10551-010-0496-z>
- Bhuiyan, M. & Nguyen, T. (2019). Impact of CSR on cost of debt and cost of capital: Australian evidence. *Social Responsibility Journal*. <https://doi.org/10.1108/SRJ-08-2018-0208>
- Bird, R., D. Hall, A., Momentè, F., & Reggiani, F. (2007). What Corporate Social Responsibility Activities are Valued by the Market? *Journal of Business Ethics*, 76(2), 189–206.
- Bodie Z., Kane A., and Marcus Aj., (2014). Investments. *McGraw Hill Education*, 10th global edition
- Bowen, H. R. (1953). Social Responsibilities of the Businessman. *The American Catholic Sociological Review*, 15(1), 42. <https://doi.org/10.2307/3708003>

- Boubakri, N., el Ghouli, S., Wang, H., Guedhami, O., & Kwok, C. C. (2016). Cross-listing and Corporate Social Responsibility. *Journal of Corporate Finance*, 41, 123–138. <https://doi.org/10.1016/j.jcorpfin.2016.08.008>
- Borghesi, R., Houston, J. F., & Naranjo, A. (2014). Corporate socially responsible investments: CEO altruism, reputation, and shareholder interests. *Journal of Corporate Finance*, 26, 164–181.
- Brzeszczyński, J., & McIntosh, G. (2014). Performance of Portfolios Composed of British SRI Stocks. *Journal of Business Ethics*, 120(3), 335–362. <https://doi.org/10.1007/s10551-012-1541-x>
- Campbell, J. L. (2007). Why Would Corporations Behave in Socially Responsible Ways? An Institutional Theory of Corporate Social Responsibility. *The Academy of Management Review*, 32(3), 946–967. <https://doi:10.5465/AMR.2007.25275684>
- Carroll, A. B. (2015). Corporate social responsibility: The centerpiece of competing and complementary frameworks. *Organizational Dynamics*, 44(2), 87–96.
- Clark, C. E. (2000). Differences between public relations and corporate social responsibility: An analysis. *Public Relations Review*, 26(3), 363–380. [https://doi:10.1016/S0363-8111\(00\)00053-9](https://doi:10.1016/S0363-8111(00)00053-9)
- Ciulla, J. B. (1991). Why is Business Talking about Ethics?: Reflections on Foreign Conversations. *California Management Review*, 34(1), 67–86. <https://doi:10.2307/41166684>
- Ding, W., Levine, R. E., Lin, C., & Xie, W. (2020). Corporate Immunity to the COVID-19 Pandemic. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3578585>
- Dorfleitner, G., Halbritter, G., & Nguyen, M. (2014). Measuring the Level and Risk of Corporate Responsibility - An Empirical Comparison of Different ESG Rating Approaches. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2536265>
- El Ghouli, S., Guedhami, O., Kwok, C. C., & Mishra, D. R. (2011). Does Corporate Social Responsibility Affect the Cost of Capital? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1540299>

- European Commission Paris Agreement (2019). Available at: https://ec.europa.eu/clima/policies/international/negotiations/paris_en
- Eurosif. (2018). European SRI study 2018. Retrieved 2022-05-06 from <http://www.eurosif.org/wp-content/uploads/2018/11/European-SRI-2018-Study.pdf>
- Fabrizi, M., Mallin, C., & Michelon, G. (2014). The Role of CEO's Personal Incentives in Driving Corporate Social Responsibility. *Journal of Business Ethics*, 124(2), 311–326. <https://doi.org/10.1007/s10551-013-1864-2>
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417. <https://doi.org/10.1111/j.1540-6261.1970.tb00518.x>
- Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3-56. [https://doi.org/10.1016/0304-405X\(93\)90023-5](https://doi.org/10.1016/0304-405X(93)90023-5)
- Fama, E. F., & French, K. R. (1996). Multifactor Explanations of Asset Pricing Anomalies. *The Journal of Finance*, 51(1), 55-84. <https://doi.org/10.1111/j.1540-6261.1996.tb05202.x>
- Fama, E. F., & French, K. R. (2007). Disagreement, tastes, and asset prices. *Journal of Financial Economics*, 83(3), 667-689. <https://doi.org/10.1016/j.jfineco.2006.01.003>
- Fatemi, A., Fooladi, I., & Tehranian, H. (2015). Valuation effects of corporate social responsibility. *Journal of Banking & Finance*, 59, 182–192. <https://doi.org/10.1016/j.jbankfin.2015.04.028>
- Fernando, S., & Lawrence, S. (2014). A Theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. *The Journal of Theoretical Accounting Research*, 10(1), 149-178.
- Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially Responsible Firms. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2473502>

- Flammer, C. (2015). Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach. *Management Science*, 61(11), 2549–2568. <https://doi.org/10.1287/mnsc.2014.2038>
- Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times*, 9 (13), 32.
- Friedman, M. (1963). Capitalism and freedom. *Ethics*, 74(1), 70–72. <https://doi.org/10.1086/291476>
- Freeman, E. R. (1984). Strategic Management: A Stakeholder Approach (Pitman Series in Business and Public Policy) (First ed.). *Harpercollins College Div.*
- Frynas, J. G., & Yamahaki, C. (2016). Corporate social responsibility: review and roadmap of theoretical perspectives. *Business Ethics: A European Review*, 25(3), 258–285. <https://doi.org/10.1111/beer.12115>
- Garel, A., & Petit-Romec, A. (2020). Investor Rewards to Environmental Responsibility in the COVID-19 Crisis. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3620109>
- Garriga, E., & Melé, D. (2004). Corporate Social Responsibility Theories: Mapping the Territory. *Journal of Business Ethics*, 53(1/2), 51–71. <https://doi.org/10.1023/b:busi.0000039399.90587.34>
- Ge, W. & Liu, M. (2015). Corporate social responsibility and the cost of corporate bonds. *Journal of Accounting and Public Policy*, 34(6), 597–624. <https://doi.org/10.1016/j.jaccpubpol.2015.05.008>
- Gregory, A., Tharyan, R., & Whittaker, J. (2013). Corporate Social Responsibility and Firm Value: Disaggregating the Effects on Cash Flow, Risk and Growth. *Journal of Business Ethics*, 124(4), 633–657. <https://doi.org/10.1007/s10551-013-1898-5>
- Griffin, D. W., Guedhami, O., Li, K., & Lu, G. (2020). National Culture and the Value Implications of Corporate Social Responsibility. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3250222>

- Harjoto, M. & Jo, H. (2015). Legal vs. Normative CSR: Differential Impact on Analyst Dispersion, Stock Return Volatility, Cost of Capital, and Firm Value. *Journal of Business Ethics*, 128(1), 1–20. <https://doi:10.1007/s10551-014-2082-2>
- Halbritter, G. & Dorfleitner, G. (2015). The wages of social responsibility —where are they? A critical review of ESG investing. *Review of Financial Economics*, 26(1), 25–35. <https://doi-org.proxy.uwasa.fi/10.1016/j.rfe.2015.03.004>
- Hoepner, A., Oikonomou, I., Scholtens, B. & Schröder, M. (2016). The Effects of Corporate and Country Sustainability Characteristics on The Cost of Debt: An International Investigation. *Journal of Business Finance & Accounting*, 43(1-2), 158–190. doi:10.1111/jbfa.12183
- Humphrey, J. E., & Tan, D. T. (2014). Does it Really Hurt to be Responsible? *Journal of Business Ethics*, 122(3), 375–386. <https://doi.org/10.1007/s10551-013-1741-z>
- Ikäheimo, S., Laitinen, E., Laitinen, T., & Puttonen, V. (2014). Yrityksen taloushallinto tänään. *Vaasan Yritysinformaatio Oy*.
- Jensen, M. (2002). Value Maximization, Stakeholder Theory, and the Corporate Objective Function. *Business Ethics Quarterly* 12(2), 235-256
- Jo, H. & Na, H. (2012). Does CSR Reduce Firm Risk? Evidence from Controversial Industry Sectors. *Journal of Business Ethics*, 110(4), 441–456. doi:10.1007/s10551-012-1492-2
- Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking & Finance*, 43, 1–13. <https://doi.org/10.1016/j.jbankfin.2014.02.013>
- Krüger, P. (2015). Corporate goodness and shareholder wealth. *Journal of financial economics*, 115, 304–329. <http://dx.doi.org/10.1016/j.jfineco.2014.09.008>
- KOTHARI, S. P., SHANKEN, J., & SLOAN, R. G. (1995). Another Look at the Cross-section of Expected Stock Returns. *The Journal of Finance*, 50(1), 185–224. <https://doi.org/10.1111/j.1540-6261.1995.tb05171.x>

- Lackmann, J., Ernstberger, J., & Stich, M. (2012). Market Reactions to Increased Reliability of Sustainability Information. *Journal of Business Ethics*, 107(2), 111–128. <https://doi.org/10.1007/s10551-011-1026-3>
- Laszlo C. and Zhexembayeva N., (2011). *Embedded Sustainability – the next big competitive advantage*. California: Stanford University Press
- Lee, D. D. & Faff, R. W. (2009). Corporate Sustainability Performance and Idiosyncratic Risk: A Global Perspective. *Financial Review*, 44(2), 213–237. <https://doi.org/10.1111/j.1540-6288.2009.00216.x>
- Lins, K. V., Servaes, H., & Tamayo, A. M. (2017). Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2555863>
- Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *The Review of Economics and Statistics*, 47(1), 13. <https://doi.org/10.2307/1924119>
- López-Gracia, J., & Sánchez-Andújar, S. (2007). Financial Structure of the Family Business: Evidence From a Group of Small Spanish Firms. *Family Business Review*, 20(4), 269–287. <https://doi.org/10.1111/j.1741-6248.2007.00094.x>
- Majoch, A., Hoepner, A. G. F., & Hebb, T. (2014). Sources of Stakeholder Salience in the Responsible Investment Movement: Why Do Investors Sign the Principles for Responsible Investment? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2487351>
- Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, 7(1), 77-91. <https://doi.org/10.1111/j.1540-6261.1952.tb01525.x>
- Masulis, R. W., & Reza, S. W. (2015). Agency Problems of Corporate Philanthropy. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2234221>
- Magnanelli, B. S. & Izzo, M. F. (2017). Corporate social performance and cost of debt: The relationship. *Social Responsibility Journal*, 13(2), 250–265. <https://doi.org/10.1108/SRJ-06-2016-0103>
- Mccain, R. A. (1978). Endogenous Bias in Technical Progress and Environmental Policy. *The American Economic Review*, 68(4), 538 – 546.

- McGuire, J., Sundgren, A., & Schneeweis, T. (1988). Corporate Social Responsibility and Firm Financial Performance. *Academy of Management Journal* 31, 854–872.
- McWilliams, A., & Siegel, D. (2001). Corporate Social Responsibility: a Theory of the Firm Perspective. *Academy of Management Review*, 26(1), 117–127.
<https://doi.org/10.5465/amr.2001.4011987>
- Morgan Stanley Institute of Sustainable Investing. (2017). *Sustainable Signals: New Data from the individual Investor*. Retrieved 2022-2-30 from https://www.morganstanley.com/pub/content/dam/msdotcom/ideas/sustainable-signals/pdf/Sustainable_Signals_Whitepaper.pdf
- Mossin, J. (1966). Equilibrium in a Capital Asset Market. *Econometrica*, 34(4), 768.
<https://doi.org/10.2307/1910098>
- Nguyen, P. A., Kecskés, A., & Mansi, S. (2020). Does Corporate Social Responsibility create shareholder value? The importance of long-term investors. *Journal of Banking & Finance*, 112, 105217. <https://doi.org/10.1016/j.jbankfin.2017.09.013>
- Pedersen, E. R. (2009). Modeling CSR: How Managers Understand the Responsibilities of Business Towards Society. *Journal of Business Ethics*, 91(2), 155–166.
<https://doi.org/10.1007/s10551-009-0078-0>
- Pätäri, S., Arminen, H., Tuppara, A., & Jantunen, A. (2014). Competitive and responsible? The relationship between corporate social and financial performance in the energy sector. *Renewable and Sustainable Energy Reviews*, 37, 142–154.
<https://doi.org/10.1016/j.rser.2014.05.012>
- Renneboog, L., ter Horst, J., & Zhang, C. (2008). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking & Finance*, 32(9), 1723–1742. <https://doi.org/10.1016/j.jbankfin.2007.12.039>
- Refinitiv. (2020). Environmental, Social and Governance (ESG) scores from Refinitiv. Retrieved 2021-10-14 from https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf

- Schueth, S. (2003). Socially Responsible Investing in the United States. *Journal of Business Ethics*, 43(3), 189–194. <http://www.jstor.org/stable/25074988>
- Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance*, 19(3), 425. <https://doi.org/10.2307/2977928>
- Servaes, H., & Tamayo, A. (2013). The Impact of Corporate Social Responsibility on Firm Value: *The Role of Customer Awareness*. *Management Science*, 59(5), 1045–1061. <https://doi.org/10.1287/mnsc.1120.1630>
- Sustainable Development Goals (2015). Available at: <https://sustainabledevelopment.un.org/>
- Stellner, C., Klein, C., & Zwergel, B. (2015). Corporate social responsibility and Eurozone corporate bonds: The moderating role of country sustainability. *Journal of Banking & Finance*, 59, 538–549. <https://doi.org/10.1016/j.jbankfin.2015.04.032>
- Tinelli, M. L. (2015). Reflection: Responsible investment around the world. In T. Hebb, J. P. Hawley, A. G. Hoepner, A. L. Neher, & D. Wood (Ed.), *The Routledge Handbook of Responsible Investment* (1st edition, p. 365). New York: Routledge.
- Turker, D. (2009). Measuring Corporate Social Responsibility: A Scale Development Study. *Journal of Business Ethics*, 85(4), 411–427. <https://doi.org/10.1007/s10551-008-9780-6>
- US SIF, (2020). *US SIF Foundation's 2020 Report on US Sustainable, Responsible and Impact investing trends*. [online] Available through: <https://www.ussif.org/files/Trends%20Report%202020%20Executive%20Summary.pdf>. [Accessed 6.5.2022].
- US SIF Foundation. (2018). *Report on US Sustainable, Responsible and Impact Investing Trends 2018*. Retrieved 2022-6-5 from <https://www.ussif.org/files/Trends/Trends%202018%20executive%20summary%20FINAL.pdf>
- UNPRI, (2020). *Principles for Responsible Investment. An investor initiative in partnership with UNEP Finance Initiative and the UN Global Compact*. Retrieved 2022-05-06 from <https://www.unpri.org/download?ac=10948>

- Varma, A., & Nofsinger, J. R. (2012). Socially Responsible Funds and Market Crises. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2142343>
- Virvilaite, R., & Daubaraite, U. (2011). Corporate Social Responsibility in Forming Corporate Image. *Engineering Economics*, 22(5). <https://doi.org/10.5755/j01.ee.22.5.972>
- Voegtlin, C., & Pless, N. M. (2014). Global Governance: CSR and the Role of the UN Global Compact. *Journal of Business Ethics*, 122(2), 179–191. <https://doi.org/10.1007/s10551-014-2214-8>
- Votaw, D. (1972). Genius Becomes Rare: A Comment on the Doctrine of Social Responsibility Pt. I. *California Management Review*, 15(2), 25–31. <https://doi.org/10.2307/41164415>
- Wood, D. (2015). What do we mean by the S in ESG? In T. Hebb, J. P. Hawley, A. G. Hoepner, A. L. Neher, & D. Wood (Ed.), *The Routledge Handbook of Responsible Investment* (1st edition, p. 553). New York: Routledge.
- World Commission on Environment and Development (1987). *Our common future*. [pdf] [online] Available at: <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf> [Accessed at 6.5.2021]