CORPORATE SOCIAL RESPONSIBILITY AND FINANCIAL PERFORMANCE IN ECONOMIC RECESSIONS

EVIDENCE FROM THE COVID-19 CRISIS IN SWEDEN

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Abstract:

We examine the link between corporate social responsibility (CSR) and corporate financial performance (CFP) during the Covid-19 crisis of 2020. More specifically, we run various regressions to see how stock returns and accounting metrics are affected by CSR-ratings. We present evidence that companies with higher environmental CSR-rating underperform their peers during the first wave of the pandemic in Sweden; a one-standard-deviation increase in pre-crisis environmental CSR is associated with a decrease in the crisis-period return of 7.50 percentage points. The evidence points towards a decrease in sales for these companies, and we draw the conclusion that it is the cultural environment that causes the effect of CSR on CFP.

Keywords:

Corporate Social Responsibility, CSR, Crisis, Recession, Corporate Financial Performance, Sweden, Covid-19

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One classic view within finance holds that the only responsibility of companies is to maximize shareholder value, and not to serve other stakeholders or to enhance general welfare (Friedman, 2007; Bénabou and Tirole, 2010). Hence, in line with this view, corporate social responsibility (CSR), a term describing behaviors that improve the welfare of stakeholders other than shareholders, is seen as an agency cost, where managers engage in ESG[1] activities to further their own agenda at the expense of shareholders. A contrasting view proposes that engaging in stakeholder-oriented behavior can be in line with the interests of shareholders, as CSR could enhance corporate financial performance (CFP) (see for example Porter and Kramer (2006, 2011); Dowell, Hart, and Yeung (2000); Orlitzky, Schmidt, and Rynes (2003); Renneboog, Ter Horst, and Zhang (2008, 2011); Guenster, Bauer, Derwall, and Koedijk (2011); Deng, Kang, and Low (2013); Flammer (2015); Krüger (2015); Dimson, Karakaş, and Li (2015)). This is often referred to as "doing well by doing good".

In recent years, the world has become more aware of sustainability issues. The Paris agreement and UN's goals for sustainable development are manifestations of this increased awareness. In the corporate world, increased regulations are put in place to mitigate corporate social irresponsibility. In 2016, the Global Reporting Initiative (GRI)[2] launches the first global sustainability reporting standard (GRI, 2021), and the European Green Deal presented in December 2019 by the European Commission is an overarching framework aiming to transform the European economy and make Europe climate neutral by 2050 (European Commission, 2020). The EU Taxonomy, being related to the Green Deal, is setting new requirements for the disclosure of corporate sustainability, making it more transparent and comparable for investors (European Commission, 2019). Moreover, firms are in fact engaging more in CSR than what is required by regulators (Wagner, Lutz, and Weitz, 2009).

In light of this, it is more relevant than ever to address the two contrasting views on CSR. Is there a relationship between CSR and CFP, and is the relationship positive? In other words, does it pay to be good? The main objective of this paper is to address this issue.

This field of study is not new. In fact, it has been explored for decades. Margolis, Elfenbein, and Walsh (2009) examine 214 articles published between 1972 and 2006 in a meta-study investigating the link between CSR and CFP. They conclude that only a modest positive correlation is confirmed. Margolis et al. (2009) do not find any significant difference between articles published before and after 1998, but the mixed results in the literature suggest that it would be interesting to look at data from different time periods. By its very nature, a causal link between CSR and CFP would be time variant and

[1]Environmental, Social and Governance

[2]Global Reporting Initiative, an independent international organization providing the world's most widely used standards for sustainability reporting

dependent on a large number of variables, including those representing the current culture and political situation. Recent literature on the topic mostly contributes incremental enhancements to the existing body of research by examining new circumstances under which a connection between CSR and CFP can be found. A study by Dorfleitner, Utz, and Wimmer (2013) suggests that the correlation between CSR and abnormal returns vary depending on geographical area and time horizon. Another study by Griffin, Guedhami, Li, and Lu (2020) also points to findings that the relationship between CSR and CFP is stronger in cultural environments where demand for CSR is higher. We investigate this issue further, and contribute to current literature by using data from Sweden, which seems to be ahead of the curve when it comes to cultures valuing sustainability. Not only is the country much less explored in the context of CSR compared to the US, which seems to be the most common geographical focus of other studies, we also believe that conducting our research in this environment could provide new insight. In line with the findings of Griffin et al. (2020), we hypothesize that the Swedish culture around sustainability could have an important effect on the outcome.

We contribute to the sub-field that examines the CSR-CFP relationship specifically during economic downturns. Some studies find that socially responsible companies are more resilient to economic downturns because investors with a preference for CSR generally have a longer investment time horizon, making ESG stocks less volatile (Bollen, 2007; Renneboog et al., 2011). Schnietz and Epstein (2005) find that CSR investments protect against falling stock prices because reputation serves as goodwill during crises. They examine the market reaction to the 1999 Seattle World Trade Organization (WTO) meeting, and the mass protests against the environmentally and labor abusing behaviors of multinational corporations that followed. They find that firms with a reputation for social responsibility experienced smaller declines in stock prices compared to firms without that reputation.

A more recent article published by Lins, Servaes, and Tamayo (2017) specifically identifies what Schnietz and Epstein (2005) call reputation as *social capital* or *trust*, where the two terms are used more or less interchangeably. Their main purpose is to explore the connection between social capital and stock performance in the US market. However, since trust is somewhat problematic to measure, they use CSR as a proxy, and fall back on previous research and a widespread view among practitioners that the two concepts are highly correlated. This way, Lins et al. (2017) indirectly address the effect of CSR on CFP. They provide evidence of a positive correlation during the part of the 2008 financial crisis when the market was experiencing a shock to overall trust. However, no correlation is found during the period before the shock to trust set in, nor after the crisis of trust. They conclude that a positive causal link between CSR and CFP only occurs during economic downturns that also involve a crisis of trust for businesses in general.

The Covid-19 induced recession of 2020 provides new data, and only a few studies have

been conducted on this topic using data from this time period. The closest literature are the papers by Bae, El Ghoul, Gong, and Guedhami (2020), and Albuquerque, Koskinen, Yang, and Zhang (2020), which both investigate the link between CSR and CFP using US data from the Covid-19 crisis. However, their findings differ; Bae et al. (2020) do not find any significant evidence that CSR impacts CFP, while Albuquerque et al. (2020) find a positive link between CSR and CFP. Bae et al. (2020) discuss these contradictory findings[3] and suggest that results are sensitive to regression specifications and sample composition, as the two studies use different methodologies and datasets.

The conclusions drawn by Lins et al. (2017) suggest that a statistically significant positive correlation between CSR and CFP should be found during a crisis that involves a shock to trust in corporations, while no results should be found otherwise. However, we find a statistically significant *negative* link between CSR and CFP during a crisis which does not involve a shock to trust. These results suggest that there is a direct effect of CSR on CFP caused by the external environment that has nothing to do with trust.

We are looking at how CSR affects CFP and not the other way around. However, it is crucial to bear in mind that the inverse relationship could also be true. In earlier studies, there have been discussions on whether a positive correlation between CSR and CFP might be due to the ability to invest more in CSR when a company is doing well financially (e.g. Hong, Kubik, and Scheinkman (2012)). The independent variables in our regressions are collected shortly before the crisis period, which means that our results should not suffer from problems with companies changing their CSR investments during the crisis. This, in combination with the fact that our results show a negative relationship between CSR and CFP eliminates the concern that there might be a reverse correlation effect.

We recognize that the culture in Sweden is largely centered around the environmental aspect of sustainability, and therefore choose to focus on the three individual dimensions of CSR separately to be able to draw more granular conclusions, and to maximize the practical utility of our findings. Through this, we find that the environmental component of CSR is the only factor which affects stock returns negatively.

The paper is organized as follows. In Section I, we discuss the theoretical background of our regressions and related literature. In Section II, we discuss data sources and present summary statistics. In Section III, we present our results. Finally, in Section IV, we conclude.

[3]The ones by Bae et al. (2020) and Albuquerque et al. (2020)

I. Trust, CSR and the Covid-19 Crisis in Sweden

A. Sweden – a Unique Environment

According to Liang and Renneboog (2017), CSR performance is highly correlated with legal origin. Firms in civil law countries, especially in Scandinavia, tend to have higher CSR ratings. Civil law countries are associated with state intervention and a more stakeholder-orientated economic environment. Sweden is one of the CSR intensive Scandinavian civil law countries.

Liang and Renneboog (2017) suggest that the general level of CSR is also affected by the preferences of shareholders and other stakeholders regarding sustainability. As a country, Sweden has a strong focus on sustainability, especially environmental sustainability. Environmental Performance Index is a dataset developed by Yale university, measuring the environmental health and ecosystem vitality of 180 countries based on 32 indicators such as "Air quality", "Biodiversity and habitat" and "Fisheries". Currently[4], Sweden is ranked 8th in this index. In a survey conducted in 2019 by the Swedish company Insight Intelligence AB, 1000 Swedes between the age of 16 and 70 are interviewed regarding their view on sustainability. The results show that 95% of the population consider sustainability important, and climate action[5] is the most crucial issue when Swedish people rank the UN's seventeen goals for sustainable development. The focus on environmental issues can also be seen in the country's policies; in 2020, Sweden is the country with the highest carbon tax in the world, with 126 USD per ton of CO2 emissions (Samuel, Ydstedt, and Asen, 2020).

It is clear that Sweden is at the forefront of sustainability, and that there is high awareness for issues around sustainability among the country's citizens. However, the implications on the link between CSR and CFP are unclear. Do Swedish business actors set the bar higher for companies they transact with? Do Swedish companies over-invest to the point where any economic benefits are diminished? Do Swedish consumers make purchase decisions that lead to a positive link between CSR and CFP even without a crisis of trust?

To address these questions, we first look at the issue of trust. According to Lins et al. (2017), it is only during a crisis where the overall trust in corporations has decreased that CSR can act as insurance against falling stock prices. However, somewhat problematic in the study by Lins et al. (2017) is that trust and social capital are concerned with opinions and expectations of stakeholders, which are hard-to-quantify, abstract concepts. To get around this on the microeconomic level, Lins et al. (2017) take advantage of the fact that popular definitions of social capital overlap with those of CSR, and that there

[4]In the Environmental Performance Index from 2020

[5]The 13th among UN's goals for sustainable development. In the survey by Insight Intelligence, 45% of respondents choose this goal as the most critical one

is a widely held opinion among practitioners that CSR investments build trust. On the macroeconomic level, they partly fall back on surveys for corroborating their claims that a certain economic crisis either did or did not involve a society-wide crisis of trust. The Edelman Trust Barometer is used by Lins et al. (2017) as partial corroborative evidence for their claim that the 2008 financial crisis was indeed a crisis of trust. For consistency, we start by looking at the same barometer for determining whether the Covid-19 crisis includes a decrease of overall trust in businesses.

Each year, Edelman Data & Intelligence, Edelman's own data and analytics consultancy, conducts surveys across the globe to establish the general trust level for different institutions as well as business sectors, etc. The results are summarized in a Trust Index, indicating the average percentage trust in NGOs, businesses, government and media. It is first published as a response to the 1999 WTO protests in Seattle, and therefore there are no data pre-dating this crisis. However, in the report from 2001, the *"Battle of Seattle"*[6] is regarded as a wake-up call for trust issues. Moreover, NGOs is the most favorable category in regards to trust, while the government, corporates and media lags behind. This often happens when there is low trust for the government and business sectors. Therefore, we consider the 1999 WTO crisis, explored by Schnietz and Epstein (2005), to also have been a crisis of trust. This makes the results found by Schnietz and Epstein (2005) compatible with those of Lins et al. (2017).

We examine how trust levels are affected by the 2008 financial crisis by looking at the report from 2009, in which we see the trust level plunge as a result of the 2008 Great Recession. Globally, the average percentage of people who trust companies *less* than one year before, in 2007, is 69%. However, as the report also shows, the drop in trust is country specific. Here, one can observe that Sweden as a country experiences a lower shock to trust than the US. As a matter of fact, companies headquartered in Sweden are found to be the most trusted among the surveyed countries.

The report from 2021, in which the research is conducted from October 19 to November 18 2020, shows that the Covid-19 pandemic creates personal and societal fears and mistrust. The index also shows that there is a burst of a trust bubble in the government institution, as well as record low trust in the media institution. Surprisingly, however, one can observe that the general level of trust in society increases two index points between 2019 and 2020. In fact, the business sector even *gains* trust, and is regarded as the most trusted among the four institutions[7]. Among the surveyed people, 86% of them agree with the statement that CEOs should step in to lead on societal issues. This shows a trend opposite to the societal mood directly after the 2008 crisis. Unfortunately, the Edelman Trust Index data from 2021 do not include Scandinavia. To specifically examine the trust levels in Sweden, we use "Förtroendebarometern" produced by the Swedish

[6]The 1999 Seattle WTO protests are sometimes called "The Battle of Seattle"
[7]NGOs, Government, Media and Businesses

company Kantar Sifo[8]. The report is conducted on an annual basis with the aim of keeping track of the Swedish population's trust in different institutions. Each report is based on surveys of randomized respondents over the age of 16, conducted over a span of several weeks. In the report from 2020, that has 1200 respondents, the overall exhibited trust in corporations is around 32%. In comparison, the trust in the healthcare sector is around 62%, and the trust in the Swedish government is 42%. It might seem like the relative trust in corporations is low. However, this is not a new phenomenon caused by the Covid-19 crisis. In fact, lower trust in corporations has always been the case in Sweden. When examining the development of trust in corporations between 2010 and 2020, one sees that trust in corporations is always fluctuating around 25% to 30%. The trust in the business sector actually increased by 3 percentage points between 2019 and 2020, from 29% to 32%.

All this is in line with what the Edelman Trust Barometer shows, both regarding Sweden's strong trust in the government[9], but also regarding the fact that corporate social capital has not been affected by the pandemic. With these data in mind, we consider the Covid-19 crisis of 2020 to be different from 2008 in that it did not include a significant shock to trust of the kind described by Lins et al. (2017).

However, the overall lack of trust in corporations in Sweden is worth addressing, as it is another factor that distinguishes Sweden from earlier research environments, where the US is often in focus. In the US, corporations seem to be the most trusted institution except for NGOs[10]. However, in Sweden, not only is the general trust in corporations relatively low, people also do not trust companies' ability to work sustainably. The survey[11] conducted by Insight Intelligence from 2019 shows that 77% of respondents consider it difficult to measure a firm's level of sustainability due to the lack of standardized KPI:s for consumers. In line with this, only 19% of respondents trust corporations to act as the biggest contributor towards a more sustainable world, although corporations are considered to have large potential[12] to achieve a positive impact. In other words, the transparency around CSR is perceived to be low, and the communication around firms' sustainability work seems to be insufficient. This, combined with the high awareness regarding sustainability among Swedish citizens seems to have evoked a sense of skepticism around CSR. This attitude, we argue, might lead to CSR and social capital being somewhat decoupled. An increase in CSR may not necessarily lead to higher trust in companies, as the sustainability awareness makes people more critical regarding poorly conveyed CSR. Thus, it would be more difficult to justify using CSR as a proxy for social

[8]A Swedish company primarily engaged with market research, opinion polls, etc.

[9]As shown in the Edelman Trust barometer from 2019

[10]As shown in the Edelman Trust barometer between 2010-2020

[11]The survey of the view on sustainability in Sweden, which is based on 1000 randomized Swedish respondents between the age of 16 and 70, and conducted during March 2019.

[12]45% of the respondents chose corporations as the institution that could achieve the highest potential impact on sustainability issues

capital in Sweden. If this holds true, we have found a unique environment in which to conduct research on the link between CSR and CFP; a crisis which does not involve a shock to trust in corporations, and a country with high CSR intensity, but with a culture that is highly critical of CSR. It is reasonable to believe that these circumstances could affect the outcome of empirical studies on this subject.

B. CSR and Financial Performance

All firms have to make decisions related to social and environmental factors of some sort; they must decide on the way to compensate investors, employees and management, as well as the environmental impact of its operations. These decisions result in various degrees of, oftentimes negative, externalities. Different regulatory measures such as carbon taxes, emission and fishery permits, minimum wages, etc. are examples of policy makers' attempts to cope with the negative externalities. However, by engaging in CSR, firms themselves are mitigating these social and environmental externalities. Using the definition by Aguinis (2011) which is later adopted by others (e.g. E. Rupp (2011); Rupp, Williams, and Aguilera (2011)), CSR is *"context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance."* Although referring to actions taken by organizations, the definition is applicable on actors at institutional, organizational, and individual levels. CSR can often be divided into three areas: environmental, social and governance, to address different types of CSR actions. These areas are jointly referred to as ESG, which is often used as a synonym to CSR in a corporate context. Institutions such as MSCI, Moodys, Morningstar, etc, have created rating systems to rank firms according to their performance in ESG. The exact measures under each ESG area differ depending on the rating institution.

To investigate the relationship between CSR and CFP, we must first define CFP. Financial performance could be measured in a few different ways. We could for example look at stock returns, accounting based metrics or volatility.

Stock returns directly reflect the investor valuation on a firm, which could be based on both the underlying, historical performances and the expected performances of the company. In other words, stock returns are contingent on investors' estimate of the future, which could vary depending on the assumptions used for the estimates. An interesting aspect related to this is whether the stock market is efficient enough to price the CSR benefits correctly. Dorfleitner et al. (2013) investigate the link between the bid-and-hold abnormal returns of a long or short investment strategy and each of the ESG dimensions. The study is conducted with a world-wide perspective, and significant results are found suggesting that the financial market is not capable of properly pricing ESG performance. Dorfleitner et al. (2013) argue that the benefits of CSR efforts and the corresponding cash

flows are not shown until much later, and are more uncertain since they are dependent on future changes in regulations and customer preferences. Since stock markets are more focused on quarterly published financial reports, the benefits of socially responsible activities are harder to appreciate.

Furthermore, investor sentiment, defined by Baker and Wurgler (2007) as *"a belief about future cash flows or investment risks that is not justified by the facts at hand"*, can also affect stock prices without the underlying performance of firms having changed as much. Hence, there is reason to consider the impact of investor sentiment when investigating the relationship between CSR and CFP.

On the other hand, in contrast to the findings by Dorfleitner et al. (2013), Hartzmark and Sussman (2019) show that investors collectively and systematically value sustainability. The study is conducted on the US mutual fund market, and the results show that funds with a higher sustainability rating experience a higher fund inflow. However, no significant results are found which supports the hypothesis that high sustainability funds outperform low sustainability funds. In other words, the higher demand for sustainable funds is not purely driven by rational beliefs regarding higher expected returns, but rather non-pecuniary motives as well. In their paper, Hartzmark and Sussman (2019) suggest that investors may value sustainability itself, and are therefore willing to pay for it. This could derive from more altruistic motives and hopes to improve social welfare.

Other studies on sustainable and responsible investments examine investor behavior during crises and show that ESG investors, i.e. investors who are more prone to invest in ESG stocks, exhibit a more resilient behavior regarding the financial performance of their holdings, compared to regular investors (Bollen, 2007; Renneboog et al., 2011). Therefore, in times of crisis, they are not as eager to sell off their stocks, which results in firms with higher ESG ratings having higher valuations during crises.

There are many ways through which CSR can affect CFP. These for example involve customers being more or less loyal (Lins et al., 2017; Albuquerque, Koskinen, and Zhang, 2019), suppliers estimating lower or higher risks (Zhang, Ma, Su, and Zhang, 2014), and employees being more or less productive (Backhaus, Stone, and Heiner, 2002; Shan and Tang, 2020). These aspects can in turn impact accounting fundamentals, which is another type of CFP. Accounting based metrics are free from stock market mania and external biases. Despite the fact that the numbers used in the metrics could lack some degree of comparability due to different accounting methods and the way the firms acquire properties, accounting metrics are in general robust when comparing firm performance. However, these metrics are not as frequently updated; at best, reports are published every quarter. Therefore, when comparing crisis CFP, accounting based metrics may be lagging behind. In comparison, stock return as a metric for firm performance incorporates shareholders' expectations of the future outlook of the firm, rather than solely its current condition. This provides a more flexible valuation, since stock returns adapt swiftly to

market and company conditions, which in times of crises might reflect to a greater extent the financial health of a firm.

A customer loyalty effect from CSR is observed in the literature. Lins et al. (2017) find evidence of CSR intensive companies being able to keep their customers to a larger extent compared to other companies during the 2008 financial crisis. Another way to look at it is that CSR engagement is part of an "augmented product" that provides added value to customers in the form of differentiation. According to Albuquerque et al. (2019), firms invest in ESG policies as a product differentiation strategy, which in turn leads to more loyal customers and lower price-elasticity of demand for the products provided. These factors in turn enable firms to charge a higher profit margin, which ultimately results in increased firm value.

In a paper by Zhang et al. (2014), evidence is found supporting that a superior CSR performance in Chinese firms leads to easier access to trade credit from suppliers. Zhang et al. (2014) also find that a superior CSR performance attracts suppliers, and is linked to lower perceived risk and ability to establish a stable long-term relationship.

Evidence also supports that CSR enhances a company's attractiveness as an employer (Backhaus et al., 2002), suggesting that CSR investments could help attract top talent. This in turn increases firm value, since talented employees are important assets of a firm, although it is hard to measure the exact values of human resources. Moreover, employee satisfaction is often a factor involved when measuring the social performance of a firm. According to Shan and Tang (2020), who examine employee satisfaction in Chinese firms, firms with greater employee satisfaction endure the Covid-19 crisis better than other firms.

C. The Covid-19 Crisis

In December 2019, the first case of Corona disease 2019 (Covid-19), was detected in the Chinese city of Wuhan (World Health Organization, 2020). Due to lack of information and local transparency, news about the virus was not made public until the beginning of 2020. The disease spread, and became the largest pandemic since the outbreak of the Spanish flu in 1918. The Covid-19 pandemic, induced by the spread of the Sars-CoV-2 virus, led to a world-wide economic crisis starting early 2020. According to IMF (2020), the world GDP growth was -3.3 percent in 2020 as a result of the pandemic. Advanced economies were more affected compared to emerging economies; the GDP growth was -4.7% for the former group of economies and -2.2% for the latter. The world had not seen a negative GDP growth since the financial crisis of 2008, when the world GDP drop was merely 0.1%.

In summary, the economy suffered an unparallelled, exogenous shock due to the outbreak of Covid-19. The economic effect of the pandemic varies depending on domestic

pandemic policies. Nevertheless, as economies are tightly intertwined, an economic downturn in one country inevitably transcends its borders. According to Albuquerque et al. (2020), the main reason for the pandemic-induced economic recession and the stock market crash was the global lock-down, which markedly diminished the productivity of firms, since it left labor supply severely restricted. This caused unemployment to spike, which in turn affected consumption and demand.

In this aspect, the Covid-19 crisis was driven by completely different forces compared to the Great Recession (the financial crisis of 2008). While the pandemic itself serves as an exogenous shock which emerged from non-economic conditions, the Great Recession originated from corruption and misconduct within the financial sector. During the 2008 crisis, a shock to credit supply was followed by severed trust. However, as mentioned before, there was no significant decrease in the overall trust in corporations during the Covid-19 crisis.

Furthermore, the Covid-19 stock market crash happened much more rapidly compared to the Great Recession of 2008. The stock market crash between February 9 and March 15, 2020 was a plunge of around 32% for the S&P 500, and the same number was around 28% for Sweden's OMX30. In comparison, the market crash during 2008 happened over the course of six months, beginning in September 2008[13] and hitting the bottom in March 2009. The S&P 500 plunged by 43%, while in Sweden, the OMX30 dropped 25%. As there has been limited time for firms to adjust to the Covid-19 crisis, the stock market reactions are mostly based on pre-pandemic firm conditions, especially in regards to CSR.

II. Sample and Summary Statistics

A. Sample Construction

We collect data from four different sources available to us through the Swedish House of Finance: The *Nordic Compass* dataset contains ESG data for publicly traded Nordic companies, *Serrano* has data from Swedish annual reports, *Finbas* has stock price data from the Nordic stock exchanges, and *Fama French Factors* is a collection of daily, weekly and monthly Fama and French factors for Swedish stocks. On top of this, we extract data from publicly available financial reports, and estimate market and risk-free returns in Sweden by using the SIXRX index and the yield of 1-month Swedish T-bills.

We choose to look at two different types of return: *raw return* and *abnormal return*. The raw return is the buy-and-hold return over the defined time period, and abnormal return is derived by subtracting the expected return, as defined by a market model such as CAPM or Fama French, from the raw return.

Our data differ from those used by Lins et al. (2017) primarily in how we design our

[13]With the Lehman Brothers Bankruptcy

CSR features; the data available in the Nordic Compass dataset is different from those used by Lins et al. (2017) as we examine Swedish data. We also choose to combine our CSR data into three separate features[14] instead of combining environmental and social metrics into one and using governance data to construct multiple control variables. That being said, we consider the governance component to be more of a control variable, since corporate governance affects external stakeholders more indirectly by mitigating agency problems. Furthermore, we choose not to exclude companies in the financial industry. This is because during the Covid-19 crisis, in contrast to the 2008 recession, financial firms are not the ones from which the crisis originated, and the financial industry does not receive special treatment in the form of government aid.

When defining the timespan of the crisis period, we look more into detail about the pandemic in Sweden. The first case of Covid-19 was seen on January 31 (Folkhälsomyndigheten, 2020). This date marks the official starting point for the spread of the virus in Sweden. This makes for an appropriate starting point of the crisis, although the market did not react immediately to the news. During the following months, as the situation worsened, the surrounding economies initiated lock-downs as measures to prevent the spread of the virus. While the circumstances deteriorated, the Swedish stock market started to plunge. It began around February 16 and reached its lowest point on March 15 – a crash of 28%[15]. The nature of the Coronavirus makes cases come in "waves" (Lai and Cheong, 2020). The end of the first wave in Sweden, defined as the day when the number of cases decreases to 5% of the peak value, was determined to be July 25, 2020 (Svt, 2020). We define the crisis period as the time between the first Swedish Covid-19 case and the end of the first wave.

To construct our sample, we start with all available companies in the Nordic Compass dataset and filter out those that do not have a Swedish country code component in their International Securities Identification Number (ISIN). Small-cap companies, i.e. companies with a market capitalization under 150 MEUR, are also removed. These stocks usually have lower liquidity and higher bid-ask spreads, and are therefore more exposed to potential price pressure effects (Lins et al., 2017). The remaining companies are combined with data from the other datasets[16], and tuples with missing values are removed. This resulted in a sample size of 162.

The Nordic Compass dataset classifies CSR data into the three ESG categories. We use these predefined categories to construct separate ESG scores. Our CSR variables are combinations of almost exclusively binary components indicating company characteristics

[14]Environmental, Social and Governance
[15]OMX Stockholm 30 Index (OMX:IND), Yahoo Finance
[16]Serrano, Nordic Compass and Fama French Factor

such as GRI Compliance or whether the company discloses its use of raw materials[17].

Our goal is to construct linear features that range from low to high CSR engagement. Therefore, variables that are not positive nor negative, like for example average board duration, or variables where CSR engagement as a function of that variable is not linear, like number of female employees or board size, are excluded. Some variables are excluded because they are perfectly correlated with other variables, and others are excluded because there are too many companies with missing values or obvious reporting mistakes. Continuous variables are normalized to the range [0, 1] and the combined CSR features used in the model are the average of all their sub-components.

Except for crisis returns, data are collected pre-crisis. ESG data and accounting metrics are collected from the latest available public reports. All variables are winsorized at the first and 99th percentiles to deal with outliers.

B. Descriptive Statistics

Descriptive statistics for our cross-section dataset are shown in Table I. Our primary independent variable of interest, CSR-environmental, has a mean of 0.539 and a median of 0.625. The other CSR variables, CSR-social and CSR-governance have a mean of 0.558 and 0.395, and a median of 0.583 and 0.399 respectively. The raw crisis return mean is 0.003, and the median is -0.048. This means that the market has basically recovered at the end of the defined crisis period. However, as the 25th percentile shows -0.202, there is a possibility that a relatively strong concern remains from investors and other

[17]The environmental component consists of the following binary variables: "CEO/Chair/Executive Sustainability Statement", "Environmental Policy and Assessment", "Targets associated with, Environmental Performance", "Steps taken to reduce negative environmental impact", "Increased usage of renewable energy", "Disclosure of raw material consumption", "Targets associated with Efficient use of Resources", "Disclosure of Water Discharges".

The social component consists of the following binary variables: "Board of Directors responsible for Environmental/Social performance", "Board compensation linked to Environmental/Social performance", "Senior Executives responsible for Environmental/Social performance", "Senior Executive compensation linked to Environmental/Social performance", "Senior Executive with Core Business Background in charge of ESG", "Environmental/Social responsibility at the divisional level", "External audit of ESG reporting", "Reporting on male/female pay equality", "Equal Opportunity Policy or Statement", "Training & Education policy for employees", "Disclosure of types of Injury and by Region and/or Gender", "Health & Safety Policy", "Health & Safety Risk Assessment", "Pandemics Policy", "Disclosure of Supplier Evaluation Procedures", "Supplier assessment for labor practices", "Supplier assessment for human rights", "Supplier assessment for environmental impact", "Whistleblower mechanisms / hotlines", "Anti-Corruption Policy or Statement, including extortion and bribery", "Human Rights Policy or Statement", "Code of Conduct / Ethics Policy", "Social impact assessments on local communities", "Local community development programs", "GRI Compliance", "GRI External Assurance".

The governance component consists of the following binary variables: "Separate CEO and Chairman of the Board", "Chairman of the Board Independent of Company and Senior Management", "Chairman of the Board Independent of Major Shareholders", "Lead / Presiding Director", "Majority Voting Policy for election of Directors", "CEO Share based compensation". Two continuous variables are also added to the governance component: the first is constructed by dividing "Number of Independent Directors" with "Board Size including employee representatives" and the second is constructed by dividing "Number of Employee and/or Union Representatives on Board" with "Board Size including employee representatives". Both variables are normalized to the interval [0, 1].

stakeholders regarding the survival prospects of some firms in their portfolios, companies they work for, or have business relationships with. Table I also contains other variables, most of them are used as control variables in our main regression. *EBIT margin growth*, *Net income growth*, *Net profit growth*, *ROE growth*, *Sales growth* and *Total assets* are not used in our main regression.

Table I
Descriptive Statistics

This table presents descriptive statistics for our cross-section dataset. The sample consists of 162 firms. *CSR-environmental*, *CSR-social* and *CSR-governance* are constructed by combining metrics from the Nordic Compass dataset and ranges from 0 to 1. CSR information and accounting metrics are collected from the latest available reports before the crisis period. Raw crisis return is the stock return for the crisis period January 31 to July 24, 2020. Momentum is the raw return for the year predating the crisis. *B1*, *B2* and *B3* are the Fama-French factor-loadings calculated for each company using monthly returns for the five years before the crisis. *Firm size* is the natural logarithm of the market cap. *Idiosyncratic risk* is the residual variance from the Fama-French model. *Cash holdings* is the ratio of cash or cash equivalents to total assets. *Profitability* is operating profits over total assets. *Short-term debt* is current liabilities to credit institutions over total assets. *Long-term debt* is non-current liabilities to credit institutions over total assets. *Total assets* is the balance sheet total. *EBIT margin growth* is the difference in EBIT margin from Q2 2019 to Q2 2020. *Net income growth* is the percentage change in net income from Q2 2019 to Q2 2020. *Net profit growth* is the difference between Q2 2020 net profits and Q2 2019 net profits. *ROE growth* is the difference in ROE from Q2 2019 to Q2 2002. *Sales growth* is the percentage change in sales from Q2 2019 to Q2 2020.

	Mean	Standard deviation	25th percentile	Median	75th percentile
Abnormal crisis return	-0.003	0.370	-0.224	-0.054	0.147
B1	1.047	0.505	0.754	1.018	1.292
B2	0.060	0.494	-0.256	-0.018	0.281
B3	-0.157	1.171	-0.490	-0.158	0.198
Book to market	0.314	0.303	0.108	0.227	0.385
CSR-environmental	0.539	0.220	0.375	0.625	0.750
CSR-governance	0.395	0.116	0.280	0.399	0.512
CSR-social	0.558	0.162	0.500	0.583	0.667
Cash holdings	0.080	0.178	0.000	0.009	0.065
EBIT margin growth	-0.040	1.005	-0.069	-0.008	0.018
Firm size	23.196	1.409	22.121	22.958	24.310
Idiosyncratic risk	0.004	0.014	0.001	0.002	0.003
Long-term debt	0.078	0.139	0.000	0.000	0.103
Momentum	0.426	0.408	0.171	0.382	0.613
Net income growth	-2.029	22.791	-0.809	-0.290	0.151
Net profit growth	-0.284	2.385	-0.093	-0.018	0.012
ROE growth	-0.022	0.093	-0.033	-0.014	0.003
Raw crisis return	0.003	0.350	-0.202	-0.048	0.125
Sales growth	0.035	0.837	-0.185	-0.036	0.050
Short-term debt	0.040	0.091	0.000	0.000	0.026
Total assets	15.424	1.557	14.242	15.252	16.475
Profitability	-0.001	0.107	-0.011	-0.004	0.000

Table II
Correlation matrix for the cross-section dataset

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) Momentum	1.00																					
(2) B1	0.11	1.00																				
(3) B2	-0.06	0.23	1.00																			
(4) B3	0.02	0.30	-0.19	1.00																		
(5) Raw crisis return	0.08	0.11	0.06	-0.08	1.00																	
(6) Abnormal crisis return	0.09	0.13	0.06	-0.04	0.98	1.00																
(7) Firm size	0.23	-0.11	-0.30	0.18	-0.04	0.01	1.00															
(8) Idiosyncratic risk	-0.04	0.58	0.08	0.68	0.05	0.11	-0.11	1.00														
(9) Book to market	-0.27	0.08	0.09	-0.02	-0.16	-0.18	-0.23	-0.01	1.00													
(10) Cash holdings	-0.18	0.34	0.10	0.12	0.24	0.26	-0.26	0.32	-0.06	1.00												
(11) Profitability	0.11	0.11	-0.13	0.25	-0.18	-0.13	0.15	0.21	-0.04	-0.11	1.00											
(12) Short-term debt	0.06	-0.02	-0.09	-0.09	0.06	0.04	-0.11	-0.04	-0.07	-0.15	0.00	1.00										
(13) Long-term debt	0.02	-0.10	-0.18	-0.07	-0.06	-0.08	-0.02	-0.06	-0.08	-0.16	0.00	0.29	1.00									
(14) Total assets	0.04	-0.12	-0.28	0.16	-0.22	-0.18	0.82	-0.15	0.20	-0.37	0.11	-0.04	0.04	1.00								
(15) Sales growth	0.05	-0.06	0.19	-0.02	0.28	0.26	-0.10	-0.09	-0.07	0.04	-0.34	-0.02	-0.06	-0.14	1.00							
(16) EBIT-margin growth	0.05	-0.16	0.11	-0.34	0.25	0.20	-0.06	-0.44	-0.02	-0.04	-0.57	-0.00	-0.05	-0.09	0.46	1.00						
(17) ROE-growth	0.14	-0.01	0.08	-0.13	0.23	0.24	0.03	-0.09	-0.26	-0.11	-0.02	0.07	-0.01	-0.05	0.46	0.38	1.00					
(18) Net profit growth	0.22	-0.06	0.03	-0.20	-0.43	-0.42	0.05	-0.24	0.01	-0.44	0.00	0.03	0.03	0.05	0.18	0.27	0.26	1.00				
(19) Net income growth	0.12	-0.13	-0.07	0.02	0.02	0.02	0.12	-0.02	-0.22	-0.08	0.02	0.02	0.03	0.06	0.04	0.03	0.05	0.00	1.00			
(20) CSR-governance	-0.24	0.09	-0.08	0.06	-0.02	-0.02	0.02	0.08	0.02	-0.03	-0.07	-0.07	0.08	0.09	-0.20	-0.08	-0.13	-0.10	-0.06	1.00		
(21) CSR-environmental	0.02	-0.23	-0.21	0.04	-0.29	-0.29	0.41	-0.24	0.01	-0.50	0.15	0.00	0.09	0.48	-0.25	-0.11	-0.13	0.11	-0.02	0.14	1.00	
(22) CSR-social	-0.06	-0.25	-0.30	0.04	-0.19	-0.19	0.52	-0.21	-0.01	-0.53	0.16	0.00	0.08	0.57	-0.18	-0.09	-0.01	0.12	-0.00	0.23	0.65	1.0

III. Crisis-Period Returns

A. Baseline and Main Results

We start by fitting four regression models to the data. The first model is a baseline model with raw or abnormal crisis return as the dependent variable and the three CSR metrics as the independent variables. The first two columns of Table III show the results from this model.

The second model, or our main regression model, is the same as the baseline model, but it also includes control variables. To address the issue that there might be a possibility that the correlation found between the environmental component of CSR and CFP is due to omitted variables rather than CSR itself, we begin with controlling for the firms' financial health prior to the crisis, using the firms' *Cash Holdings* (the ratio of cash or cash equivalents to total assets), *Short-Term debt* (current liabilities to credit institutions over total assets), *Long-Term Debt* (non-current liabilities to credit institutions over total assets) and *Profitability* (operating profits over total assets) as measures of financial health. Firms with a higher cash holding and low debt can continue to invest during crises without facing issues of insolvency, especially if the firm has a lower level of short-term debt.

However, other firm characteristics might also have an impact on stock returns (Daniel, Grinblatt, Titman, and Wermers, 1997). Therefore, we control for *firm size* (the natural logarithm of a firm's equity market capitalization), *Book-to-Market* (book value of equity divided by market value of equity), and *momentum* (the firm's raw return in the year preceding the crisis). Finally, we control for the firms' idiosyncratic risk, considering that stock return volatility might also affect the returns. We measure financial health and firm characteristics at the end of 2019. If no data are available from 2019, we use the most recent data available, which are mostly from end-of-year 2018. The results are presented in the last two columns of Table III.

Both our baseline and main regressions show that Swedish firms with a higher score on the environmental dimension of ESG are performing worse during the Covid-19 crisis. After controlling for industry fixed effects, our main regression shows that a one-standard-deviation increase in the 2019 CSR-environmental score (0.220) is associated with a change in crisis-period raw returns of -7.50 percentage points. The corresponding change in crisis-period abnormal returns is -7.90 percentage points. This indicates that an increase in environmental rating will induce a sharp decline of crisis return.

Table III
Crisis-Period Returns and CSR

This table shows estimates of the regression coefficients. The two first columns represent a regression model without controlling for firm characteristics or industry fixed effects. The results from the main regression are shown in the last two columns, where we control for *Momentum*, Fama French factor loadings (*B1*, *B2*, *B3*), *Book to market* ratio, *Cash holdings*, *Firm size*, *Idiosyncratic risk*, *Long-term debt*, *Short-term debt*, *Profitability* and industry fixed effects. Coefficients followed by ***, **, or * are significant at the 1%, 5%, and 10% level respectively.

	Raw return (1)	Abnormal return (2)	Raw return (3)	Abnormal return (4)
CSR-environmental	-0.415***	-0.438***	-0.341**	-0.359**
CSR-social	0.042	0.044	-0.079	-0.114
CSR-governance	-0.011	-0.013	-0.336	-0.305
Constant	0.198*	0.206*	-0.7	-1.317**
Momentum			0.145**	0.15**
B1			-0.008	-0.015
B2			-0.036	-0.022
B3			0.003	-0.008
Book to market			-0.061	-0.061
Cash holdings			-0.043	0.024
Firm size			0.029	0.052**
Idiosyncratic risk			-1.22	2.229
Long-term debt			-0.044	-0.096
profitability			-0.183	0.008
Short-term debt			-0.314	-0.2
Industry dummies			Yes	Yes

Turning to our control variables, we see that very few of them are significant. In fact, CSR-environmental is the only significant variable except for momentum, firm-size and some industry dummy variables. This suggests that investors seem to put a negative price premium on environmentally friendly stocks specifically, which may appear surprising.

B. Before and during the Crisis

Our results so far indicate that CSR negatively affects stock returns during the Covid-19 crisis, although there is no significant shock to trust in corporations. In this section, we examine whether this negative effect is exclusive to the crisis period, or if it is true across time. To address this question, we investigate monthly returns from January 2015, several years prior to the onset of the crisis, to July 2020, when the first wave of Covid-19 ends in Sweden. Specifically, we construct a panel dataset using a similar sample of companies as before[18]. We use monthly simple and abnormal returns and the

[18]This sample contains 191 companies since it is no longer strictly necessary for all companies to have available data up until July 2020.

same control variables used in the previous regression, aside from the Fama French factor loadings that are replaced with the CAPM beta[19], and idiosyncratic risk which is now derived from the CAPM. The control variables are calculated based on data available at a specific point in time. This means that momentum, the CAPM beta, and idiosyncratic risk are recalculated for every month, and accounting and CSR data from the previous year are used, with a one month buffer for financial reports to become public. For this panel dataset, we run the following regression:

$$
\begin{aligned}
\textit{Return}_{i,t} = b_0 \\
&+ b_1 \textit{CSR-environmental}_{i,t-1} \cdot \textit{Pre-crisis} + b_2 \textit{CSR-environmental}_{i,t-1} \cdot \textit{Crisis} \\
&+ b_3 \textit{CSR-social}_{i,t-1} \cdot \textit{Pre-crisis} + b_4 \textit{CSR-social}_{i,t-1} \cdot \textit{Crisis} \\
&+ b_5 \textit{CSR-governance}_{i,t-1} \cdot \textit{Pre-crisis} + b_6 \textit{CSR-governance}_{i,t-1} \cdot \textit{Crisis} \\
&+ \boldsymbol{B}_7 \boldsymbol{X}_{i,t-1} + \ \textit{Firm-fixed effects} + \textit{Time-fixed effects} + \epsilon_{i,t}
\end{aligned}
$$

where *Crisis* is a dummy variable set to one during the crisis period, *Pre-crisis* is a dummy variable set to one everywhere else, and $\mathbf{X}$ is a vector of control variables. We include firm- and time-fixed effects to control for omitted time-invariant factors.

The results, presented in Table IV, show no significant effect of environmental CSR investments before the crisis, but the coefficient becomes significant during our defined crisis period and indicates a negative relationship. A one-standard-deviation increase in *CSR-environmental*Crisis* (0.243) is associated with a decrease in monthly raw return of 1.3 percentage points.

These results suggest that the effect of CSR is limited to the crisis period, which indicates that investors only put negative price premiums on environmental stocks during economic downturns.

[19]The Fama French dataset available from the Swedish House of Finance does not include data for 2020. We chose to drop the two extra factors and simply go with the CAPM beta since data for the market return and risk-free rate are more readily available.

Table IV
CSR and Returns Before and During the Crisis

This table presents the regression coefficients after fitting the following regression model to our panel dataset:

$$
\begin{aligned}
\textit{Return}_{i,t} = {} & b_0 \\
& + b_1 \textit{CSR-environmental}_{i,t-1} \cdot \textit{Pre-crisis} + b_2 \textit{CSR-environmental}_{i,t-1} \cdot \textit{Crisis} \\
& + b_3 \textit{CSR-social}_{i,t-1} \cdot \textit{Pre-crisis} + b_4 \textit{CSR-social}_{i,t-1} \cdot \textit{Crisis} \\
& + b_5 \textit{CSR-governance}_{i,t-1} \cdot \textit{Pre-crisis} + b_6 \textit{CSR-governance}_{i,t-1} \cdot \textit{Crisis} \\
& + \boldsymbol{B}_7 \boldsymbol{X}_{i,t-1} + \ \textit{Firm-fixed effects} + \textit{Time-fixed effects} + \epsilon_{i,t}
\end{aligned}
$$

where $\textit{Return}_{i,t}$ is the monthly raw or abnormal return, and X is a vector of control variables. The control variables are the same as those in Table III, except for the CAPM beta replacing the Fama French factor loadings, idiosyncratic risk being derived from the CAPM and firm-fixed effects being used instead of industry dummies. In the panel dataset, we collect monthly returns from January 2015 to July 2020. All independent variables are updated for every month with the data that were publicly available at the time. Coefficients followed by ***, **, or * are significant at the 1%, 5%, and 10% level respectively.

	Raw return	Abnormal return
CSR-environmental * pre-crisis	0.001	0.004
CSR-environmental * crisis	-0.054***	-0.059***
CSR-social * pre-crisis	0.008	0.007
CSR-social * crisis	0.01	0.009
CSR-governance * pre-crisis	-0.028*	-0.031*
CSR-governance * crisis	-0.043	-0.048
Book to market	0.033***	0.03***
Firm size	-0.029***	-0.027***
Short-term debt	-0.047*	-0.053*
capm_beta	0.008	-0.007
Cash holdings	0.028	0.024
Idiosyncratic risk	-0.146	-0.191
Long-term debt	-0.004	0.001
Momentum	0.0	-0.001
profitability	0.036	0.037
Firm-fixed effects	Yes	Yes
Time-fixed effects	Yes	Yes

C. Examining Accounting Fundamentals during the Crisis

Our findings so far provide evidence for a negative price premium on environmentally superior stocks during the Covid-19 crisis period, when the overall level of trust in corporations does not decrease. Next, we examine the reasons behind the negative price premium. One plausible explanation is that market sentiment drives this effect, which means that company value may not be properly reflected by the stock price. Another

explanation for the negative price premiums placed on environmentally friendly stocks could be that these firms indeed underperform their peers during the crisis when it comes to accounting fundamentals, which provides a reason for a lower valuation. To investigate this possibility, we look at accounting and valuation metrics that might affect investors' opinions of the firms.

One ratio that affects valuation of firms is revenue growth. It reflects for example the health of sales and customer loyalty. To investigate whether CSR has affected revenue growth during the pandemic, we construct a regression model with sales growth[20] from the second quarter of 2019 to the same quarter in 2020 as the dependent variable and CSR scores as the independent variable. We control for *cash-holdings*, *total assets*, *short-term*and *long-term debt*, and include industry dummies to control for industry fixed effects. We use the same ESG scores as our previous regression models. Table V shows the result of the test.

Table V
Growth of Sales, EBIT-margin, ROE, Net Profit and Net Income

This table presents regression estimates of the coefficients from five different regression models. The independent variables are *Sales growth*, *ROE growth*, *Net income growth*, *EBIT margin growth* and *Net profit growth*, where *Sales growth* and *Net income growth* are percentage changes from Q2 2019 and Q2 2020, and *ROE growth*, *EBIT margin growth*, *Net profit growth* are calculated as differences between Q2 2019 and Q2 2020. We control for *Cash holdings*, *Long-term debt* and *Short-term debt*, as well as *Total assets*. We also include industry dummies. All control variables are measured at the same time as those in table II. Coefficients followed by ***, **, or * are significant at the 1%, 5%, and 10% level respectively.

	Sales growth (1)	ROE growth (2)	Net income growth (3)	EBIT growth (4)	Net profit growth (5)
CSR-environmental	-1.154**	-0.06*	-2.224	-0.931	-0.801
CSR-social	-0.059	0.069	2.22	-0.309	-0.331
CSR-governance	-1.037	-0.079	-1.395	-0.678	-0.668
Cash holdings	-0.881	-0.059	-1.872	-1.962**	-1.674**
Constant	1.585	-0.096	-3.675	1.9	1.737
Long-term debt	-0.103	0.008	1.993	-0.408	-0.243
Short-term debt	-1.239	-0.037	-0.326	-0.917	-1.249
Total assets	-0.035	-0.003	0.092	-0.045	-0.036
Industry dummies	Yes	Yes	Yes	Yes	Yes

The results in the first column of Table V show that there is a negative link between growth in sales and the environmental component of CSR, which indicates that sales has decreased to a larger extent for environmentally friendly firms. This contradicts previous evidence[21] that points to a higher customer loyalty among high CSR performers.

[20]Sales data are collected manually through publicly disclosed quarterly reports of the sample companies, and the data of interest is the company revenue from Q2 2019 and Q2 2020 respectively

[21]Lins et al. (2017); Albuquerque et al. (2019)

Instead, the results so far suggests that there is a lower demand on environmentally friendly products during crises. One explanation could be the premiums charged on such products, which deter customers who are already more financially constrained during economic downturns. In other words, being a high CSR performer on the environmental dimension requires a markup which customers are not willing to pay for during a crisis. The same reasoning applies regardless of whether the transaction is B2C or a B2B. This leads to lower sales growth, which in turn affects investor valuations of the stock. A higher price for sustainable products does not necessarily have to be true, it would suffice that sustainable products are perceived to have a higher price, which would impair willingness to buy. The survey[22] by Insight Intelligence from 2019 shows that although 77% of Swedes want to live more sustainably, money constraint is seen as the main obstacle to a more sustainable lifestyle. In fact, 32% of the respondents answer that they refrain from buying sustainable products because of the higher price. This issue is even more tangible during an economic crisis, as in the survey from 2020[23], the corresponding share of people considering money as the main issue is 43%. In other words, there is an increase of 11 percentage points between 2019 and 2020, which is most likely caused by the pandemic induced economic downturn. This might be one of the reasons why there is less demand for sustainable products during the crisis. This, in combination with the earlier discussed skepticism among Swedish consumers against CSR, could enhance the effect of consumers abandoning CSR products under economic constraints.

Another important accounting metric for valuation is Return on Equity (ROE), which captures the direct return of shareholders. To investigate whether the negative premium on environmental stocks is due to a lower ROE, we conduct the same test as above but with ROE[24] growth as the dependent variable.

The second column of Table V shows the results from this regression model. The specifications indicate that there is a weak negative correlation between ROE and firms that exhibit a higher environmental score. This suggests that environmentally friendly firms are generating a lower return on shareholder equity during the Covid-19 crisis compared to their peers. This could partially be due to lower sales showcased by the same firms during this period, which ultimately affects ROE negatively. Regardless of the reason behind a lower ROE, there is now one more plausible reason for investors to value environmentally friendly stocks negatively, as they exhibit lower return on shareholders' equity.

As ROE is composed of net income and shareholders' equity, there is a possibility

[22]Based on 1000 randomized Swedish respondents between the age of 16 and 70. Conducted during March 2019.

[23]Conducted by Insight Intelligence

[24]The ROE of interest are the ones from Q2 2019 and Q2 2020. Each period's ROE is calculated by dividing the net income with the average equity, i.e., (opening balance equity + closing balance equity)/2. Both net income and equity are collected manually from company quarterly reports.

that a lower net earnings growth is the reason behind the lower ROE exhibited by environmentally friendly firms. To address this, we conduct the same test on net income. Data on net income are gathered manually through firms quarterly reports[25].

The results, shown in the third column of Table V, provide no evidence that CSR has affected earnings growth. There still might be other reasons behind the lower ROE among environmentally friendly firms; perhaps equity related changes that are not associated with net incomes.

However, seeing how CSR has affected both sales and ROE negatively, it still seems that environmentally friendly firms are exhibiting real underperformance in some aspects. Therefore, we further investigate whether profit has been affected in the same way. Hence, the fourth valuation metric we examine is how EBIT margins vary depending on CSR performance. By choosing EBIT margin, we focus on the operational efficiency of firms during the pandemic, and thereby isolate the effect from financing. We conduct the same test as above, with EBIT margin[26] growth as the dependent variable.

The fourth column of Table V presents our results, which show no significant link between the change in EBIT margin and CSR. Thus, there is no evidence that CSR has impacted the operational efficiency of firms during the crisis. Therefore, we cannot conclude that the larger decrease of ROE among environmentally friendly firms is due to lower operational efficiency.

To investigate this matter further, we examine how CSR has affected firms' net profit growth, as the metric reflects the total performance of the firm, including financing efficiency and tax effect. Especially interesting is the financing effect, as credit supply and interest rates could all be affected by a crisis. Data on net profit are computed in the same way as EBIT margin, where net incomes and sales of firms are collected manually through their quarterly reports[27]. Presented in the final column of Table V, our results show once again a lack of significance.

After investigating the actual performance of firms, we find a negative link between revenue growth and the environmental dimension of CSR, as well as weak evidence of CSR contributing to an inferior ROE. Seeing these results, the aggregated conclusion is that the negative premiums placed on environmentally friendly stocks is not solely due to crisis market sentiments, but also because of actual underperformance. Although it is hard to estimate how much underperformance drives the lower valuation, our tests on some of the fundamental valuation metrics show that there is indeed a rationale for investors to place a negative premium on these stocks.

[25]Net income is gathered from the Q2 reports from 2019 and 2020

[26]EBIT data are collected manually from firms' quarterly reports and is thereafter divided by the sales from the same period to calculate the EBIT margin. For consistency, we look at Q2 EBIT-margin from 2019 and 2020.

[27]Net profit is computed by dividing net income with sales. The periods of interest are Q2 2019 and Q2 2020

IV. Conclusion

After controlling for a variety of firm characteristics, as well as industry and time-fixed effects, we find that firms with higher environmental CSR components underperform their peers both regarding raw and abnormal returns during the Covid-19 crisis of 2020. We find no such effect in the five year period predating the crisis.

Our data indicate that environmentally friendly firms exhibit lower revenue growth. We also find weak evidence of lower ROE growth. These results hint at some rationale behind the negative price premium during the crisis, but it is possible that the truth lies somewhere in between an effect from company fundamentals and market sentiment.

The culture around sustainability in Sweden seems to have led to widespread skepticism towards CSR and the ability of companies to do good, limiting the usefulness of CSR investments for building trust (see Section I). Looking at the observations by Lins et al. (2017), we would expect no significant results since the Covid-19 crisis does not involve a shock to trust. It is likely that our results stem from a direct effect of CSR on CFP rather than an indirect effect by way of accumulated social capital.

Transacting with CSR-intense companies is partly an act of charity, and financially constrained consumers are likely to cut down on such spending. However, this alone is not enough to explain the impaired revenue growth among environmentally intense firms since such an effect would also be observed by Lins et al. (2017). Instead, we believe that the external environment plays a significant role in catalyzing this effect; financially constrained consumers are more likely to cut down on "CSR charity" if they are already sceptical of the concept.

In contrast to previous research (e.g. Schnietz and Epstein (2005); Bollen (2007); Renneboog et al. (2011)), which mostly suggest that CSR has a positive impact on stock returns during economic downturns, our results show that investments in the environmental component of CSR could have a negative effect on financial performance. Cultural awareness of sustainability and attitude towards CSR seem to affect the relationship between CSR and CFP. In a culture with high awareness and a skeptical attitude, the practical utility of building trust through sustainable investments and using CSR as insurance is limited.

Our regressions could, despite our best efforts to include control variables and time- and entity-fixed effects, suffer from unobserved heterogeneity. Furthermore, crises are rare, and we have only looked at one. Future studies should examine the recovery phase of the Covid-crisis that still lies ahead as well as previous and future financial crises in Sweden.

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