

Article

# The ESG Disclosure and the Financial Performance of Norwegian Listed Firms

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**Abstract:** The world is constantly changing, and with an evolving global environmental crisis, there is a growing trend of Corporate Social Responsibility, and Environmental, Social, and Governance (ESG) disclosure initiatives. The final report on the new E.U. taxonomy for sustainable activities was released in 2020, making ESG disclosure more relevant. This paper investigates the effects of ESG initiatives on the financial performance of Norwegian listed companies from 2010 to 2019. ESG is measured through the Thomson Reuters Eikon ESG disclosure score and financial performance through ROA and Tobin's Q. To the best of our knowledge, this is the first time this relationship has been investigated in Norway. Using panel data regression analysis and two proxies for the dependent variable (financial performance), the results of this study are mixed. In particular, findings suggest a strong significant relationship between ESG initiatives and financial performance. More specifically, the regression model, with ROA as the dependent variable, suggests that ESG initiatives have a clear negative impact. On the other hand, the variable Tobin's Q increases when ESG increases. This could be explained by the different horizons of the measures and other factors affecting the business environment.

**Keywords:** ESG initiatives; financial performance; Norwegian listed firms



**Citation:** Giannopoulos, George, Renate Victoria Kihle Fagernes, Mahmoud Elmarzouky, and Kazi Abul Bashar Muhammad Afzal Hossain. 2022. The ESG Disclosure and the Financial Performance of Norwegian Listed Firms. *Journal of Risk and Financial Management* 15: 237. <https://doi.org/10.3390/jrfm15060237>

Academic Editor: Thanasis Stengos

Received: 4 February 2022

Accepted: 5 May 2022

Published: 26 May 2022

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## 1. Introduction

Forty years after the first world climate conference held in 1979, the bioscience journal published a statement. Recognised by 11.000 scientists from more than 150 nations, the message is clear: "There is no time to lose", referring to the quickly accelerating environmental crisis ([The Guardian 2019](#)). Climate change is one of the numerous factors contributing to the growing interest in Corporate Social Responsibility (CSR) among both businesses and scholars; the latter has led to several publications over the past few years (e.g., [Hoi et al. 2018](#); [Vu et al. 2020](#); [Jia 2020](#)).

There is an ongoing trend in the literature regarding the ESG initiatives ([Fijałkowska et al. 2018](#); [Hang et al. 2019](#); [Beck et al. 2018](#)). In line with the CSR trend that has evolved over recent decades, both investors and companies wish to be socially conscious. Thus, the attractiveness of sustainable investment has increased. Focusing on the ESG initiatives, net flows into sustainable funds in the U.S totalled \$20.6 billion in 2019 and have almost quadrupled compared with the previous year ([Morningstar Inc 2020](#)). Future-oriented investors strongly believe that non-financial information such as Environmental, Social, and Governance issues are necessary to build a sustainable global economy ([Jitmaneeeroj 2016](#)).

As one of the leading oil exporters globally, Norway needs to take action to meet the demand for sustainability. Thus, ESG is a growing trend among Norwegian listed companies. Norway's biggest company, Equinor, announced in 2020 that its ambition is to have zero emissions (in Norway) within 30 years ([Equinor ASA 2020](#)). Will this big investment affect their Financial Performance? This issue is explored below. The aims

and objectives of this research are to measure the effects of ESG initiatives on the financial performance of Norwegian listed companies over the past ten years.

When introducing the Task Force on Climate-related Financial Disclosures (TCFD), Michael Bloomberg said, “Today’s disclosures remain far from the scale the markets need to channel investment to sustainable and resilient solutions, opportunities, and business models” (Forbes 2019). Companies are now, more than ever, facing an increasing set of disclosure requirements relating to ESG factors (KPMG 2019). This is while the demand for gender diversity, ethical treatment of employees, and environmental consideration is growing.

The impact of ESG on financial performance has been researched within various countries and with a range of different measures; however, the topic has not been explored within a sample of Norwegian companies, even though Norway is a leading country in this field. Thus, this study contributes to the existing literature by investigating this research topic for the first time in the Norwegian market.

The rest of this paper is structured as follows: Section 2 presents and critically reviews the previous literature in the field and the hypothesis test of this study. In Section 3, the methodology is justified, including the data sample, description of the variables, and the empirical model. Section 4 analyses the data and presents the results. Finally, Section 5 summarises the main findings, research limitations, and suggests a scope for further research.

## 2. Literature Review

The literature review includes a brief section on the background on the topic, including CSR, ESG, and ESG disclosure practice. This is followed by a section about previous literature measures used on financial performance. Furthermore, past findings of the research objective are presented. Lastly, the literature researching CSR within Norwegian companies is discussed, including one study investigating almost similar research objectives. All this ultimately leads to the developed hypothesis test. Dahlsrud (2008) discusses the difficulty of defining CSR without being biased; however, one interpretation of CSR could be ‘situations where the firm goes beyond compliance and engages in actions that appear to further some social good, beyond the firm’s interests and that which is required by law’ (McWilliams et al. 2006, p. 1).

Numerous scholars presented in this paper have explored different aspects of CSR over the years (e.g., Bhattacharya et al. 2008; Jizi et al. 2013; Liang and Renneboog 2017; Hsu et al. 2019). Even though this paper focuses on the impact ESG has on financial performance, the importance of CSR extends far beyond that. According to Carroll (1999), the modern era of CSR started in the 1950s, and the definitions and empirical research within the field expanded through the 1980s. The field has experienced significant growth until today, and contains a variety of terminologies such as corporate citizenship and corporate sustainability (Garriga and Melé 2004).

### 2.1. Environmental, Social, and Governance (ESG)

Environmental, Social, and Governance refers to non-financial information about how a firm deals with issues on this matter, and its importance for firm valuation is growing (Bassen and Kovács 2008). Even though ESG information might lack standardisation, scholars argue that it can help adapt to environmental changes and even be a part of a company’s competitive strategy (Galbreath 2013).

As ESG scores are easy to access, it is often used as a proxy for corporate sustainability performance (Drempetic et al. 2019). To understand this connection, a breakdown of the term is necessary. The ESG score is often divided into three, where each company gets an individual score for environmental, social, and governance initiatives. The environmental disclosure score covers, e.g., CO<sub>2</sub> emissions and the total waste of a company. Furthermore, the social disclosure score measures equality, human rights, and labour conditions. Lastly, the governance disclosure score covers, among other things, shareholder rights and corruption. Overall, this makes up the total ESG disclosure score that several

well-known databases offer, including ASSET4, SAM, Bloomberg, and Thomson Reuters Eikon™ (Dorfleitner et al. 2015). The latter is used in this study.

## 2.2. ESG Disclosure

In addition, to emphasise companies' increasing focus on CSR, Porter and Kramer (2006) also discuss different methodologies to rank companies on their CSR performance. Companies now face an increasing set of disclosure requirements, and it is argued that companies use time and money to voluntarily disclose their initiatives (Elmarzouky et al. 2021; Gamerschlag et al. 2011); however, Han et al. (2016) discuss the problem of biased disclosure when relying on the companies' own CSR reports and propose using third-party ratings to get an unbiased view. Furthermore, one of the main indexes within this field is the ESG disclosure score used in this research study.

The problem of biased disclosure might disappear in the near future as the E.U. taxonomy for sustainable activities was presented on the 22 June 2020. This classification system aims to determine if a company and its activities are environmentally sustainable (Lucarelli et al. 2020) and might thus be the regulatory framework that the field needs.

## 2.3. Measures of Financial Performance

A variety of measures are used to calculate a company's performance, and profit is one of the central ones for many companies (Waters 2011). Prior literature that investigates the relationship between ESG scores and performance uses the following measures: Stock Returns (e.g., Brammer et al. 2006), Return on Assets (ROA) (e.g., Xie et al. 2019) and Return on Equity (ROE) (e.g., Atan et al. 2018). Although the research is slightly old, Griffin and Mahon (1997) reveal that 80 different performance measures have been used in their reviewed literature (51 research studies). Out of these 80 measures, the most frequently used measures are firm size, ROE, and ROA.

Velte (2017) emphasises the importance of using market-based accounting measures as a proxy for financial performance, naming ROA as the most common accounting measure. He used this measure and Tobin's Q to conduct his research. The same two variables are also used by several others, such as Atan et al. (2018) and Dalal and Thaker (2019).

## 2.4. Past Findings

According to Friede et al. (2015) the first article researching the relationship between ESG and financial performance was done in early 1970. After this, several scholars have contributed to the literature (more than 2200 according to Dremptic et al. 2019). Furthermore, these scholars and professionals have used a diverse number of terms within the category of ESG; however, whether the term used is Socially Responsible Investing (SRI), Corporate Social Performance (CSP), or ESG, the studies measure more or less the same criteria in terms of assessing how being sustainable pays off.

### 2.4.1. The Positive Relation between ESG and Performance

Several scholars find that sustainability improves financial performance (Barnett and Salomon 2006; Peiris and Evans 2010; Jo and Harjoto 2011 among others). Table 1 outlines the literature on the positive association between ESG and firm's financial performance.

In 2003, Orlitzky, Schmidt and Rynes did a meta-analysis of 52 prior studies, covering most quantitative studies in the field until 2003. With a sample size of 33,878 observations, they found that environmental responsibility is "likely to pay off".

Filbeck et al. (2009) conducted a study on "the 100 best Corporate citizens", a list from 2000 to 2007. The list was first published in 1999, and it ranked the largest 1000 US companies on their ESG performance (Corporate Responsibility Magazine 2019). The findings suggest that the companies tested outperformed the S&P 500 index in the first years after testing. Using "return on assets" (ROA) and Tobin's Q as measures, Velte (2017) also found that ESG impact the two measures positively. Furthermore, he found that governance strongly impacts financial performance. A recent study on 65 Indian companies from 2015 to

2017 proves that a high ESG score improves financial performance (Dalal and Thaker 2019). Xie et al. (2019) found mixed results, but concluded that the positive relationship between ESG activities and a company's performance is not doubted.

**Table 1.** Literature on the positive association between ESG and performance.

Authors (Year)	ESG Measure	Performance Measure	Sample Period	Country	Findings
Barnett and Salomon (2006)	Cost of social responsibility	Risk-adjusted financial performance of a given SRI fund	1972–2000	USA	Positive Relationship
Peiris and Evans (2010)	ESG factors	Return on assets and Market-to-book-value	1991–2006	USA	Positive Relationship
Filbeck et al. (2009)	Business ethics samples	Market capitalization and Book value of Equity/Market value of equity (BE/ME) ratio	2000–2007	USA	Positive Relationship
Velte (2017)	ESG performance	Return on assets	2010–214	Germany	Positive Relationship
Dalal and Thaker (2019)	Sustainability ratings by NSE 100 and indices	Return on assets	2015–2017	India	Positive Relationship
Xie et al. (2019)	Bloomberg ESG disclosure score	Corporate efficiency (revenue earned, ROA)	2015	International (74 countries)	Positive Relationship
Lo and Sheu (2007)	Sustainability index (DJSI USA)	Tobin's Q ratio	1999–2002	USA	Positive Relationship
Lourenço et al. (2012)	Corporate sustainability performance	The market value of equity	2007–2010	Canada & USA	Positive Relationship
Derwall et al. (2005)	Eco-efficiency score	Stock price	1995–2003	USA	Positive Relationship
Zhao et al. (2018)	ESG performance index	ROCE as financial performance indicator & Debt to Equity ratio	2017	China	Positive Relationship

A few studies measuring corporate sustainability should also be mentioned due to the close resemblance to ESG. When studying how Corporate Sustainability affects market value, Lo and Sheu (2007) found a significantly high correlation. They argue that the findings support the idea that being sustainable can increase firm value, and thus, higher financial performance. Lourenço et al. (2012) found the same results when studying corporate social performance (CSP); with being a member of the Dow Jones Sustainability Index as the proxy, CSP has strong explanatory power over the book value of equity and earnings.

Focusing on “eco-efficiency”, which is defined as the economic value created by a company about the waste produced, Derwall et al. (2005) present findings that an eco-efficient portfolio outperforms a less eco-efficient portfolio; however, they also question the possibility of measuring the impact of CSP on firm performance.

Other scholars that find a positive relationship between ESG and financial performance are Friede et al. (2015), Zhao et al. (2018), and Doh et al. (2009).

#### 2.4.2. The Negative Relation between ESG and Performance

Another view is that investing in ESG negatively relates to financial performance. Table 2 outlines the literature on the negative association between ESG and firm's financial performance. Brammer et al. (2006) argued this by analysing many U.K. firms, using market returns as the measure. The analysis observed that firms with a CSP (corporate

social performance) score of 0 outperform the market. [Barnett \(2007\)](#) argues that it is natural to assume that investing in CSP will be a disadvantage due to the reallocation of resources from the shareholders to other stakeholders.

**Table 2.** Literature on the negative association between ESG and performance.

Authors (Year)	ESG Measure	Performance Measure	Sample Period	Country	Findings
<a href="#">Brammer et al. (2006)</a>	EIRIS scores	Stock returns	2002–2005	The U.K.	Negative Relationship
<a href="#">Lee et al. (2009)</a>	Dow Jones Sustainability Indexes	ROA, ROE, and ROE	1998–2002	Multiple countries	Negative Relationship
<a href="#">Nollet et al. (2016)</a>	ESG disclosure score	ROA and ROC	2007–2011	USA	Negative Relationship
<a href="#">Garcia and Orsato (2020)</a>	Measured by ranging from 0% to 100%, based on information on governance, environmental, and social pillars of firms	ROA and DCF (free cash flow)	2007–2014	Multiple countries (mainly USA)	Negative Relationship
<a href="#">Folger-Laronde et al. (2020)</a>	Eco-fund ratings are sourced from Corporate Knights, a research firm that provides R.I. ratings	Weekly financial returns during COVID-19	2019–2020	Canada	Negative Relationship
<a href="#">Mittal et al. (2008)</a>	CSR disclosure	Economic value added (EVA) and Market value added (MVA)	2001–2005	India	Negative Relationship
<a href="#">Crisóstomo et al. (2011)</a>	CSR index based on Ibase’s information	ROA and ROE	2001–2006	Brazil	Negative Relationship
<a href="#">Velte (2017)</a>	ESG performance data, collected from the Thomson Reuters Datastream database	ROA as financial performance	2010–2014	Germany	Negative Relationship

Another study that found a negative correlation between ESG and performance is by [Lee et al. \(2009\)](#); however, they also emphasise the value of being sustainable and that investors often require lower returns for companies with higher ESG scores.

[Nollet et al. \(2016\)](#) used accounting- and market-based performance indicators to investigate the relationship between CSP and Corporate Financial Performance (CFP). Even though they found a significant negative relationship between CSP and one of the accounting-based indicators, they found evidence of CSP effects being positive in the long run. Furthermore, they found that the G (Governance) is the key driver affecting the relationship.

A recent study investigating the relationship in emerging countries finds that the dependent variables, “ROA” and “Free Cash Flow”, are negatively affected by ESG initiatives ([Garcia and Orsato 2020](#)). The authors predicted this result due to the lack of capital in emerging countries and the necessity to prioritise its investments. Another relevant study conducted during the COVID-19 pandemic found that ESG was negatively related by financial returns due to the pandemic. ([Folger-Laronde et al. 2020](#)). Other research studies that find that ESG initiatives have a negative impact on firm value or performance are, e.g., [Mittal et al. \(2008\)](#), [Crisóstomo et al. \(2011\)](#), and [Velte \(2017\)](#).

#### 2.4.3. Mixed Relation between ESG and Performance

The third group of scholars found mixed results when investigating the relationship between ESG and performance.



[Brammer and Millington \(2008\)](#) found that a company has higher financial performance, both when the level of corporate social performance (CSP) is unusually high and unusually low. Furthermore, they argue that companies with low CSP perform better in the short run, whereas companies with high CSP perform best in the long run.

Another research study with varied results is [Han et al. \(2016\)](#), who split the ESG score into individual Environmental, Social, and Governance scores. They found a positive relationship between governance and financial performance and a negative relationship with the environmental score. As for the social responsibility score, there was no relationship.

#### 2.4.4. No Relation between ESG and Performance

Even though the abovementioned studies present both positive and negative correlations between ESG initiatives and performance, some studies find no correlation between the two ([Atan et al. 2018](#); [Galema et al. 2008](#); [Humphrey et al. 2012a](#)).

[Humphrey et al. \(2012b\)](#) conducted a study on 249 UK firms, and by separating E, S, and G, they explored the independent effects on performance. Even though they concluded that there is no significant cost (in terms of risk or return) when investing in ESG, they also found no benefit. In other words, there is no difference in performance between a company with a low ESG ranking and a company scoring highly.

#### 2.5. Norwegian Companies

Even though Norway is one of the leading countries in corporate social responsibility ([Debt, Strategy and CSR Practices 2018](#)), there is still no research connecting ESG with the financial performance of Norwegian companies; however, various authors have explored CSR and ethical investing, which are both connected to Norwegian companies and the Norwegian Government Pension Fund (“the oil fund”) ([Ditlev-Simonsen and Wenstøp 2013](#); [Hoepner and Schopohl 2016](#); [Ihlen and Von Weltzien Hoivik 2015](#); [Næss 2019](#)).

A comparative analysis between the U.K. and Norway regarding charity ethical investments has been done ([Kreander et al. 2015](#)), and a few studies on different aspects of CSR in Norwegian SMEs ([Fassin et al. 2015](#); [Laudal 2011](#); [Von Weltzien Hoivik 2011](#)). [Nyborg and Zhang \(2013\)](#) have explored whether CSR is associated with lower wages, using Norwegian register data and data on firm reputation. Furthermore, a few studies have been undertaken on CSR and retail in Norway ([Loussaïef et al. 2014](#); [Utgård 2018](#)), as has a study of the integration of CSR in a well-known Norwegian shipping company ([Hargett and Williams 2009](#)).

Similarly to this study, research conducted by [Blomgren \(2011\)](#) seeks to investigate if CSR influences profit margins. Blomgren uses a case study methodology and analyses 15 Norwegian textile firms. This differs from similar studies because a qualitative research approach is used with interviews as the collection method. There are no findings of CSR helping achieve above average profits in the study.

#### 2.6. Hypothesis Test

Scholars present different answers to questions regarding the effect that ESG initiatives have on financial performance. Some argue it is beneficial to be sustainable, and some argue it has no relation. It can thus be questioned whether ESG affects financial performance or if there is no significant relationship between the two measures. Even if the results are mixed, most scholars find that ESG affects financial performance significantly in one way or another. Thus, given the aforementioned discussion in the literature, the following hypothesis is tested:

**Hypothesis 1 (H1).** *There is a significant relationship between ESG factors and financial performance.*

In conclusion, the field of CSR and Environmental, Social, and Governance initiatives has been widely researched and explored by various scholars over recent years. The results were mixed by using various ESG scores and financial measures when investigating the

relationship between ESG and financial performance. The question of whether there is a relationship between the two measures arises, as some scholars find no relationship; however, most research suggests a significant relationship, and the developed hypothesis reflects this.

### 3. Data and Methodology

In this section, firstly, the dataset is briefly explained, followed by descriptive statistics of the dataset. Furthermore, the empirical framework of the research study is presented, including a test for collinearity and a presentation of the panel data regression models. Two different models are used, one for each of the dependent variables. Lastly, the variables used in the study are presented before this paper is concluded.

#### 3.1. Sample Data

Of the 6000 companies on the Thomson Reuters Eikon database, only 267 are Norwegian public companies, and 67 of these companies reported ESG activities in 2019; however, ESG disclosure has been more common in the past few years, and the companies that have reported zero initiatives in one (or more) of the years from 2010 to 2019 need to be excluded from the dataset. The sample therefore includes 20 Norwegian public companies on the Norwegian Stock Exchange (Oslo Børs), covering the period from 2010 to 2019. This gives a total of 200 firm/years observations. A table of the sampled companies used in this study can be found in the appendices (Appendix A), and Table 3 describes the choice of sample data.

**Table 3.** Sample Data.

Scenario	Companies on Oslo Børs	Companies on Oslo Børs that disclosed ESG activities in 2019	Companies on Oslo Børs that disclosed ESG activities all years of a researcher exploring period
<b>Companies</b>	267	67	20
<b>Possible Datapoints</b>	2670	670	200

The variables mentioned below, Tobin’s Q, Leverage, and Size, are calculated manually using financial information of the chosen companies. This is due to limited access to databases during the COVID-19 pandemic. As with the ESG score, ROA can be collected directly from Eikon or other financial databases. In this study, ROA is collected from a Norwegian database called roof.<sup>1</sup>

#### Descriptive Statistics

The descriptive statistics of the used variables are summed up in Table 4. ROA is a number expressed as a percentage and is thus presented as a percentage in the table. The mean (median) for the financial performance measures is 7.841% (6.5%) for ROA and 1.885 (1.395) for Tobin’s Q, respectively. A Tobin’s Q above 1 implies that the stock is overvalued. As for the ESG score, the mean (median) is 51,129 (56,337). Furthermore, the same results for the control variables measured through size and leverage are 10,439 (10,405) and 6333 (2093), respectively. As for the latter, it should be mentioned that most of the companies’ leverage range between 1 and 5 across all the years; however, a few extreme numbers occur where a company has a significantly lower net worth than its assets or even a negative net worth in some cases. These two extreme cases represent the minimum and the maximum value in the last row in Table 4. Moreover, it is noted that the S.D. for all the variables is within the expected range.

**Table 4.** Descriptive statistics.

	Mean	Median	SD	Minimum	Maximum
<b>Dependent Variables</b>					
Return on Assets	7.841%	6.500%	10.27	−27.330%	63.5%
Tobin’s Q	1.885	1.395	1.84	0.486	19,040
<b>Independent Variables</b>					
ESG	51,129	56,337	22,379	8483	88,958
<b>Control Variables</b>					
Size	10,439	10,405	0.577	7920	11,929
Leverage	6333	2093	46,847	−75,789	616,666

### 3.2. Methodology

Most of the prior literature presented in this paper uses a quantitative methodology, with a few exceptions using a case study approach. Nyborg and Zhang (2013) use a survey for parts of their data; however, they investigate corporate social responsibility and firm reputation, where the latter has to be conducted using a qualitative methodology. As it is not possible to conduct financial numbers through a survey or another qualitative approach, this methodology does not fit the research objectives of this study.

On the other hand, quantitative research often studies the correlation between two or more variables expressed numerically (Elmarzouky et al. 2022; Saunders et al. 2019). As this study investigates the relationship between variables expressed numerically, this approach is the appropriate choice. Thus, to investigate the objectives of this study, this research methodology is chosen.

#### 3.2.1. Empirical Framework

To investigate the research objectives of this study, panel data regression is being used. The dataset consists of panel data, consisting of data from 45 companies over 10 years. Two variables are chosen to secure accuracy in the hypotheses test. Dalal and Thaker (2019) and Atan et al. (2018) use regression models (2019). The two models measure financial performance through profitability and firm value, respectively. The two models are presented in equation as below.

$$ROA_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon$$

$$Tq_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon$$

where,  $ROA_{it}$  and  $Tq_{it}$  are the dependent variables for firm  $I$  in period  $t$ , and  $ESG_{it}$  is the independent variable “ESG score” for firm  $i$  in period  $t$ . Furthermore, the control variables size and leverage are  $SIZE_{it}$  and  $LEV_{it}$  for firm  $i$  in period  $t$  and  $\varepsilon$  is the error term.

#### Hausman Test

To decide whether to use a fixed effect or a random effect model when conducting the regression, the Hausman test is used. The aim is to test the null hypothesis; therefore, the random effects model should be used. The results from this test, using the dependent variables ROA and Tobin’s Q, are presented in Table 5 below. The test shows that the p-value is significant at a 5% level for the ROA and insignificant at 5% for Tobin’s Q. The null hypothesis is thus rejected for the latter. Furthermore, this implies that a fixed effects test should be used when ROA is the dependent variable, and a random effect test should be used with Tobin’s Q as the dependent variable.



**Table 5.** Hausman Test Results.

Dependent Variable	Test Summary	Chi-Square Statistic	p-Value
ROA	Fixed effects test	18.87	0.0003
Tobin’s Q	Random effects test	1.04	0.798

Tobin’s Q measures market performance and includes factors such as net worth. It is a measure of a company’s performance in the long term, which might fit better with ESG initiatives as this is a long-term investment and might not be significant for a company in the short term. A firm’s market value reveals how much the market evaluates the company’s wealth and can also reflect non-financial measures like ESG initiatives.

### 3.2.2. Measurement of Variables

#### Dependent Variables

Griffin and Mahon (1997) argued that return on assets (ROA) is a widely used measure of operating performance; thus, this is being used in this study. Another measure used by various scholars (e.g., Atan et al. 2018; Dalal and Thaker 2019, etc.) is Tobin’s Q, calculated manually for the selected companies. A longer time horizon is secured using these two measures, as Tobin’s Q can be viewed as a proxy for growth. Following Dalal and Thaker (2019), and other scholars prior to them, “book value of total assets” is used as a proxy for “replacement cost of assets” in Tobin’s Q formula. Tobin’s Q is calculated using the equation presented in Table 6, where the net worth is the company’s total equity.

**Table 6.** Variables of the Study.

Dependent Variables	Explanation
Return on Assets (ROA)	Net Profit/Average total assets
Tobin’s Q	(Total assets + market capitalization-net worth)/Total assets
Independent Variables	Explanation
ESG	Environmental, social and governance performance scores collected from Bloomberg
Control Variables	Explanation
Size	Measured by the natural logarithm of total assets
Leverage	Total debt/total equity

#### Independent Variables

The independent variable in this study is the “ESG score” (Singh et al. 2012). A third-party rating is used to get an unbiased view; hence, the ESG score is measured using Thomson Reuters Eikon™ ESG score, which has previously been used by numerous scholars (e.g., Garcia et al. 2017; Duque-Grisales and Aguilera-Caracuel 2019). Thomson Reuters has more than 150 research analysts collecting data from over 6000 companies (Thomson Reuters Eikon™ 2017). The ESG score is built from ten themes within the three pillars Environmental (Emissions, innovation, and resource use), Social (Workforce, human rights, community, and product responsibility), and Governance (Management, shareholders, and CSR Strategy) based on reported company data. The score ranges from 0 (D-) at its poorest to 100 (A+) at its best.

#### Control Variables

Stock and Watson (2015) emphasise the use of control variables, as they are factors that can influence the other variables. Hence control variables are:

- (i) Firms’ size: Previous research proves a positive relationship with ESG disclosure and is measured by the firm’s total assets (Clarkson et al. 2008; Atan et al. 2018).

- (ii) Leverage: Leverage is considered a control variable because of its effect on the company’s financial performance. Leverage is the total debt divided by total equity.

**4. Results and Discussion**

In this section, the dataset is analysed, and the hypothesis test results are presented.<sup>2</sup> A confidence interval of 95% is used, which implies that the null hypothesis may be rejected if the statistical significance is below 0.05. Firstly, the correlation results are presented using the Pearson correlation matrix. Furthermore, the regression results are presented, followed by a discussion of these results. Lastly, the section is concluded.

*4.1. Correlation Results*

In addition to the variance inflation factor presented above, a bivariate correlation analysis presented by the Pearson correlation matrix (PCM) for all the variables in Table 7 below. As observed, the ESG score is neither correlated with ROA nor Tobin’s Q. Furthermore, we can observe that some of the other variables are statistically significant at the 0.01 level (e.g., ROA and Tobin’s Q), which indicates that they tend to increase together. This is expected as the two variables include some of the same financial information, but this is not a problem as they are presented in two different regression models. Another observation is that ESG and Size tend to increase together, indicating that the bigger the company, the higher the ESG score, which is argued by previous research studies (e.g., Clarkson et al. 2008; Atan et al. 2018); however, as Table 3 (IVF) suggests, the correlation is below the threshold, suggesting no multicollinearity problems.

**Table 7.** Pearson Correlation Matrix.

	ROA	Tobin’s Q	ESG	Leverage	Size
ROA	1				
Tobin’s Q	0.213 ***	1			
ESG	0.034	0.58	1		
Leverage	−0.195 ***	−0.33	0.052	1	
Size	−0.058	−0.270 ***	0.466 ***	−0.32	1

\*\*\* = Correlation is significant at the 0.01 level.

*4.2. Regression Results*

Tables 8 and 9 present the results of the regression models, where the *p*-values, *z*-statistics, and coefficients are summarised. The panel regression is conducted in Stata for more precise results. If the other variables stay constant, the value in the coefficient column explains how the independent variable contributes to forecasting the variation in the dependent variable. The *p*-value column explains how significant the effect is and is marked with \* if it is significant at the 0.05 level. The lower part of the table contains different measures of the model’s fit.

**Table 8.** Fixed Effects (GLS), Dependent Variable: ROA.

	Coefficient	Std. Error	t	<i>p</i> -Value
Constant	−9.34	26.655	−0.35	0.726
ESG	−0.237	0.087	−2.71	0.007 ***
Leverage	−0.036	0.015	−2.34	0.020 **
Size	2/82	2.571	1.10	0.274
Mean Dependent Var	7.841		SD dependent Var	10.27
R Squared	0.0725		Log−Likelihood	−596.32
Schwarz Criterion	4689.538		Akaike Criterion	2512.648

Note: \*\* *p* value is significant at the 0.05 level. \*\*\* *p* value is significant at the 0.01 level.

**Table 9.** Random Effects (GLS), Dependent Variable: Tobin’s Q.

	Coefficient	Std. Error	z	p-Value
Constant	14.725	3.271	4.50	0.001 ***
ESG	0.0189	0.009	2.02	0.044 **
Leverage	−0.0006	0.002	−0.25	0.804
Size	−1.322	0.324	−4.08	0.001 ***
Mean Dependent Var	1.885		SD Dependent Var	1.84
R squared	0.199		Log-Likelihood	−616.93
Schwarz Criterion	5451.267		Akaike Criterion	2825.806

Note: \*\* p value is significant at the 0.05 level. \*\*\* p value is significant at the 0.01 level.

#### 4.2.1. ROA

We can conclude from the *p*-value that ESG affects ROA at 0.05 and 0.01 levels. This implies a strong, significant relationship. Furthermore, the ESG coefficient is negative, indicating that ESG negatively affects ROA. Leverage also has a significantly negative effect on ROA, but the coefficient, and thus the effect, is smaller than for ESG. Lastly, size has a positive coefficient of no significance.

In the lower part of the model, we can observe that the standard deviation of the dependent variable is higher than the mean, which means varies greatly with the values of ROA. The numbers range from high negative values to high positive values. As for the fit measures on the model, the numbers explain more when compared with an alternative model. R squared explains how the data fit the regression model and can range between 0–1. The low value of 0.0725 thus indicates that the model does not fit the data very well. The Log-Likelihood, Schwarz Criterion, and Akaike Criterion, are also higher than what is preferred, but they are roughly at the same levels as similar studies (Dalal and Thaker 2019).

#### 4.2.2. Tobin’s Q

Having the description of the columns above in mind, we observe that ESG contributes in a positive way to the dependent variable, in this case, Tobin’s Q. Together with the *p*-value of 0.044, we can conclude that ESG affects the dependent variable significantly at the 0.05 level, and thus, this confirms the hypothesis test. As for the two control variables, Leverage and Size, they affect Tobin’s Q negatively; however, the coefficient of leverage is minimal and not significant at 0.05.

For Tobin’s Q, the mean is slightly higher than the standard deviation for the dependent variable; the values for Tobin’s Q in the dataset are close to the mean. R squared is a bit higher than for ROA, but is still too small compared with the benchmarks. Even though the values on the other measures are similar to other studies, it also suggests that a different model could be chosen.

#### 4.3. Discussion

The results above are mixed, as reported in the literature (e.g., Han et al. 2016). This study suggests that ROA is affected negatively by ESG initiatives, which is suggested by the theory. As Barnett (2007) argues, resources are allocated from the shareholder when investing in socially responsible activities, and thus, it is natural that a measure based on net profit/loss is affected negatively by this. Norway is a rich country, and its economy is greatly affected by oil prices. The research period is characterised by fluctuations in the oil prices and repercussions of the financial crisis (SSB 2019). Some factors affect a company’s profitability and can also explain why the dataset contains a large proportion of negative ROAs compared with other sample periods. As Lee et al. (2009) argued, investors value their company as sustainable, which might explain why ESG affects Tobin’s Q positively.

It is also important to mention that the study could suffer from an omitted variable problem, as there might exist other variables that affect the dependent variables and correlate with the other variables. This sector can be an example, as different sectors value sustainability differently. This is discussed further in the conclusion section.

In conclusion, the hypothesis is tested using panel data regression with two different models for the two different dependent variables. Even though the two variables are getting different results, one proving a positive relationship and one proving a negative relationship, both indicate that ESG affects financial performance. Furthermore, the variables can be interpreted as one capturing the short-term impact and the other the long-term impact. More specifically, the results suggest that ESG affects financial performance negatively in the short run and positively in the long run.

## 5. Conclusions

This study investigates the effects of ESG initiatives on the financial performance of Norwegian listed companies. The sample data consists of 20 companies between 2010 and 2019. Using ROA and Tobin's Q as the dependent variables, a panel data regression model is used to investigate the research objective and hypothesis. Recent literature has been inconclusive in terms of how being sustainable and investing in ESG initiatives affect a company's profitability, value, and performance, and if it pays off to be sustainable. Due to the mixed results presented by scholars, the hypotheses are presented without a direction for the relationship. Norway is a small country, but nevertheless, it is a leading country in the field of sustainability. Furthermore, a lot of research has been conducted on Norwegian firms in relation to CSR and sustainability, but none of them investigates if being sustainable pays off; therefore, this study contributes to the literature, even if the sample size is small.

Findings suggest that investing in Environmental, Social, and Governance initiatives affects the firm's financial performance significantly at a confidence level of 95%. This suggests that the hypotheses test is accepted; however, the two dependent variables measuring financial performance are affected in different ways by the ESG disclosure score. ROA is affected negatively by the increased investment in ESG initiatives, and Tobin's Q is affected positively. Furthermore, ROA can be seen as a measure of short-term financial performance and Tobin's Q as a proxy of growth and long-term performance. These findings can be important for policymakers, as it suggests that investing in ESG affects the financial performance of companies in Norway. Local country data is important for consistency in policymaking, and this study will contribute to this matter.

Even though this study contributes to the current literature by adding Norway to the map, this has also been one of the main limitations. Out of the 267 companies on the Norwegian Stock Exchange (Oslo Børs), only 20 reported ESG activities every year for the past ten years. This was surprising, as Norway is one of the leading countries in the field. This small number of samples is a limitation, as the tests might have more power, and the results might be more reliable, if the number of companies was higher. Another limitation, as noted in previous studies in the field (e.g., [Nollet et al. 2016](#); [Han et al. 2016](#)), is that the actual CSR initiatives a company is involved in are not taken into account by the ESG score. A company may be more sustainable and engage in more CSR activities than the ESG score reflects, thus demonstrating the lack of ESG disclosure regulations. As mentioned earlier, the model used, and the dataset, could have fit better even though the relationship between these two factors is significant. The final limitation, also mentioned by other scholars (e.g., [Bagnoli and Watts 2003](#); [Dalal and Thaker 2019](#)), is that there might be an omitted variable problem with other variables affecting either financial performance and/or ESG. These variables might be "degree of competition" or other factors affecting the chosen companies' business environment.

Environmental, Social, and Governance is a field that is constantly evolving, and the limitations discussed above could be eliminated in a few years; however, these issues will still be relevant for future research. The number of Norwegian companies with ESG disclosure scores in 2019 is 67. Thus, this is an opportunity for future research and may be more statistically significant. As previously mentioned, the new E.U. taxonomy for sustainable activities take effect in 2022, which is another reason to investigate potential growth in a number of Norwegian companies.

The sustainability taxonomy might also solve the second limitation discussed above and make ESG score a covering term that reflects a company's CSR activities correctly. Another suggestion is to investigate the individual effects of environmental, social and governance initiatives. Previous scholars have done this before, but never for Norwegian companies. Nevertheless, the popularity and relevance of this field will, if possible, grow even more in the future, and future research will be interesting to follow.

Our findings are extremely important and add value to the stakeholders to better understand the consequences of the ESG disclosure, especially the standard setters and regulators to enforce a framework that can be used to improve the ESG disclosure. Our findings suggest that more needs to be done to provide more precise guidelines for ESG disclosure to help stakeholders make a better decision. Our unique findings help professional bodies to improve the guidelines of the current standards.

**Author Contributions:** Conceptualization, R.V.K.F. and G.G.; methodology, R.V.K.F. and G.G.; software, R.V.K.F.; validation, R.V.K.F. and G.G.; formal analysis, R.V.K.F.; investigation, R.V.K.F.; resources, R.V.K.F.; data curation, R.V.K.F.; writing—original draft preparation, R.V.K.F.; writing—review and editing, M.E., K.A.B.M.A.H. and G.G.; visualization, R.V.K.F. and K.A.B.M.A.H.; supervision, G.G.; project administration, M.E. and K.A.B.M.A.H. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Data are available upon request.

**Conflicts of Interest:** The authors declare no conflict of interest.

## Appendix A

**Table A1.** Sampled companies.

Company Common Name	Country of Exchange
Subsea 7 SA	Norway
Akastor ASA	Norway
Dnb ASA	Norway
Dno ASA	Norway
Frontline Ltd	Norway
Mowi ASA	Norway
Norsk Hydro ASA	Norway
Orkla ASA	Norway
PGS ASA	Norway
Prosafe SE	Norway
REC Silicon ASA	Norway
Schibsted ASA	Norway
Seadril Ltd	Norway
Stolt-Nielsen Ltd	Norway
Storebrand ASA	Norway
Equinor ASA	Norway
Telenor ASA	Norway
TGS NOPEC Geophysical Company ASA	Norway
Tomra Systems ASA	Norway
Yara International ASA	Norway

## Notes

<sup>1</sup> [www.proff.no](http://www.proff.no) (accessed on July 2020).

<sup>2</sup> When analysing the data, the statistical tool Stata/SE 16.1 was used.



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