

Do ESG Reports Financially Benefit Energy and Luxury Goods Companies?

ESG レポートはエネルギー・ラグジュアリー企業に財政的な利益をもたらすか？

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TABLE OF CONTENTS

Introduction	1
Chapter One: Background	4
1. Background	4
2. Recent Policy Legislation in Europe	6
2.1. The Sustainable Finance Disclosure Regulation (SFDR)	
2.2. The Corporate Sustainability Due Diligence (CSDD)	
3. Dilemma of the Private Sector	9
3.1. Sustainability and Commercial Success	
3.2. Fiduciary Duties of CEO	
Chapter Two: Literature Review	12
1. Past Research on the Correlation between Sustainability Report and Stock Price	12
2. Research Questions	13
Chapter Three: Theoretical Framework	14
1. Research Hypothesis	14
Chapter Four: Data and Methodology	16
1. Empirical Methodology	17
1.1. Stock Return Calculation	
1.2. Cumulative Abnormal Return	
1.3. Capital Asset Pricing Model (CAPM) for Event Study	

Chapter Five: Results and Discussion	20
1. Results for Energy Companies	21
2. Results for Luxury Goods Companies	22
3. Hypothesis Testing	23
4. Discussion	23
Conclusion and Directions for Future Research	25
References	26
Japanese Abstract	29

INTRODUCTION

Global leading banks declared their commitments to achieving net-zero carbon emissions by 2050 at UN COP26 held in 2021. However, these banks later realized that it is not currently realistic financially to cease investing in the fossil fuel industry (Marsh, 2022), despite the fact that the non-renewable energy industry is responsible for over half of the CO₂ emissions on the earth (Climate Watch).

The fashion industry, which accounts for approximately 10% of global greenhouse gas emissions (United Nations, 2018), also updated the Fashion Industry Charter for Climate Action during the UN COP26. The declaration aims to achieve the net-zero carbon emissions by 2050 and make a 100% commitment to renewable energy and environmentally friendly materials by 2030 (Friedman, 2022). However, those goals are overly ambitious to achieve when considering that the industry continues to promote consumption, and as U.N. Framework Convention on Climate Change reports, “emissions from textile manufacturing are projected to skyrocket by 60% by 2030” (Paton, 2022). Climate change poses a pressing challenge for all sectors, particularly for private actors such as the energy and fashion industries, whose business models historically rely on the extraction of natural resources and constant consumption.

Sustainability and ESG (Environmental, Social, and Corporate Governance) performance of the private sector are attracting increasing attention from investors. The social and environmental impacts of companies’ business activities are often discussed through the term Corporate Social Responsibility (CSR), which signifies “the way through which a company achieves a balance of economic, environmental and social imperatives” (UNIDO).

Enterprises often publish sustainability reports to disclose their non-financial performance to stakeholders. The number of companies self-disclosing their nonfinancial performance has increased dramatically in recent years, with 72% of S&P 500 companies publishing sustainability reports in 2013, compared with less than 20% in 2011 (Du et al., 2017, p. 313).

Previous literature on this topic, such as Campbell (2007), David (1973), Du et al. (2017), Knox et al. (2005), has focused on the business incentives for sustainability reporting, but there is a limited number of research conducted on the financial benefits of releasing sustainability reports. The assumption behind this inquiry is that corporations generally view environmental sustainability either as a factor to improve their public images or as a risk for their business operations, and they would take it seriously only when there is evidence of financial benefits associated with a deeper commitment to environmental sustainability.

This paper aims to contribute to the existing literature by investigating stock market returns around the release of sustainability reports for three energy companies and two luxury goods companies listed on the New York Stock Exchange (NYSE), Euronext Paris, and the SIX Swiss Exchange. The study seeks to explore whether there are positive abnormal market returns around the release of sustainability reports for these companies and examine if the short-term financial benefits serve as motivations to enhance companies' commitments for environmental sustainability.

The rest of this paper is organized as follows. Chapter one provides a detailed background of the research theme. Chapter two presents an overview of relevant past academic research and research questions. Chapter three introduces Efficient Market Hypothesis (EMH) as a theoretical framework for formulating the research hypotheses. Chapter four describes the dataset used for regression analysis, equations for calculating stock market returns and cumulative abnormal

returns, and, the empirical methodology, Capital Asset Pricing Model (CAPM). Chapter five presents the empirical results, whether they support or refute the hypothesis, and provides a discussion of those results. The final chapter concludes the research by suggesting future directions for further study.

CHAPTER ONE

BACKGROUND

1. Background

Private organizations are ultimately “the system of primary stakeholder groups” (Clarkson, 1995, p.264), and the companies that invest the most resources in social responsibility today are those that are already profitable enough to do so or that receive harsh criticism over the environmental impacts of their business (Knox et al., 2005, p.20). Du et al. (2017, p. 314) identify higher stakeholder loyalty and better risk management as primary motivations for the release of sustainability reports.

The United Nations defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” at the World Commission on Environment and Development in 1987 (the United Nations, 1987, p. 16). However, there are no shared definitions on the terms such as sustainability and degrowth, which people use in different ways, according to economist and a research professor Daniel Susskind at King’s College London and Oxford University (Paton, 2022).

In this paper, environmental sustainability refers the sustainable use of natural resources without diminishing biological diversity. Numerous global issues concerning the environment exist today, such as air and water pollution, greenhouse gas emissions like carbon dioxide (CO₂) and methane, and the consumption of non-renewable energy sources, such as petroleum and coal. While the term sustainability itself and ESG (Environmental, Social, and Corporate Governance) performances generally encompass concern social issues, including human rights and diversity in racial and gender representation, this paper focuses specifically on environmental sustainability.

Sustainability reports contain qualitative and quantitative non-financial information about companies' ESG aspects (Du, Yu et al., 2017, p. 313). These documents enhance the company's information transparency for stakeholders and shareholders, providing more detailed information on the organization's sustainability performance compared to advertisements or websites (pp. 313-314). Stakeholders here refer to any individuals or groups who have an influence on or are influenced by the business activities of a company, such as consumers, suppliers, and trade associations. Shareholders are individuals or organizations who own shares in a company's stock. Critics of sustainability reporting point out the absence of rigorous rules, shared definitions, and measures regarding the terms such as ESG performance and sustainability (Dordon, 2022). Dordon further highlights in the Financial Times that while investment in assets labeled as responsible for ESG aspects is a trend, evaluating sustainability without regulations or shared definitions of related terms can result in greenwashing and distract clients from the real challenges of today's environmental issues (2022).

2. Recent Policies Related to Environmental Sustainability in the Private Sector in Europe

Though a majority of publicly traded companies publish sustainability reports, their efforts alone are not enough to reduce the environmental impacts of the private sector. This situation raises the question of how society can more effectively measure companies' environmental sustainability performance. One answer is regulation by the public sector, as exemplified by recent regulations adopted by the European Union (EU).

The EU has recently enacted legislation related to environmental sustainability in the private sector and ESG investing, such as Sustainable Finance Disclosure Regulation (SFDR) and Corporate Sustainability Due Diligence (CSDD). These policies provide qualitative and quantitative measures to specify what sustainability means, which would be able to facilitate a better evaluation of the private sector's environmental contribution and improve the content of sustainability report. While these policies may not cover every aspect, they help differentiate between companies that use "sustainability" to satisfy their commercial goals and companies that use the term "sustainability" to genuinely commit to creating environmentally sustainable business practices. Examples of such practices include reducing greenhouse gas emissions and using environmentally friendly materials.

2.1. The Sustainable Finance Disclosures Regulation (SFDR)

The Sustainable Finance Disclosure Regulation (SFDR) is an obligation adopted by the European Commission in April 2022 for financial market participants, including asset managers, institutional investors, insurance companies, and pension funds, to disclose the sustainability-related components of their financial instruments to ultimate buyers (European Commission, Sustainability-related disclosure). It classifies financial products

registered in the European Union (EU) or sold to EU investors into three categories: “Article 9 funds,” “Article 8 funds,” and “other.” Article 9 funds, also known as Dark Green funds, directly and positively impact the environment and society (Morgan Stanley, 2021). Article 8 funds, or Light Green funds, “promote " environmental and social efforts or exclude the assets that do not comply with the sustainable development principles and objectives (Morgan Stanly). Funds in the “other” category, which do not meet the requirements for Article 8 or 9, do not undergo sustainability assessments or undergo only the baseline assessments (Morgan Stanly).

This regulation aims to enable investors to compare financial products based on shared standards set by the EU and choose more sustainable or less sustainable products to invest in. It serves as an alternative and complement to sustainability report as SFDR evaluates companies’ sustainability performance as a third party and can motivate individual enterprises who are not classified as Article 8 or 9 funds to enhance their environmental performance to meet the SFDR’s criteria and attract investors.

Moreover, if the SFDR classification works effectively, it might be able to accelerate green finance, where individuals choose the commercial bank, pension funds, investment funds, insurance companies based on the sustainability disclosure of these organizations. For example, they can consider whether these organizations invest significantly in fossil fuels or not (European Commission, how green are your finances?).

2.2. The Corporate Sustainability Due Diligence (CSDD)

The Corporate Sustainability Due Diligence (CSDD) is a policy proposal by the European Commission that introduces enhanced rules on human rights and environmental issues in the private sector (European Commission, Corporate sustainability). The proposal

sets duties for enterprise directors to incorporate due diligence into their corporate strategies and report them to their board members (European Commission). These rules apply to EU companies and non-EU companies of different sizes that operate businesses in the EU, including companies' value chains inside and outside Europe, with an emphasis on high-impact sectors such as textiles, agriculture, extraction of minerals (European Commission). Companies with more than 500 employees and a turnover exceeding €150 millions have to ensure that their businesses are in line with the Paris Agreement, limiting global warming to 1.5°C (European Commission). However, CSDD is not comprehensive since it does not account for small and medium-sized enterprises (SMEs), which represent 99% of all businesses in the EU (European Commission, SMEs).

If this proposal realizes, the EU can better monitor the sustainability performance of the private sector as companies will have responsibilities to report their concrete strategies to fulfill the proposed duties on environmental responsibility and human rights. This proposal also serves as an alternative and complement to sustainability report and sets shared standards and measures of sustainability practices.

As shown above, the public sector can define shared definitions and play a role in monitoring companies' environmental performance. However, how aware is the private sector of the environmental impacts of its business activities? Are there any changes occurring within the industries? The following sections investigate the insights of the founders of the Danish fashion brand GANNI's on this matter.

3. Dilemma of the Private Sector

3.1. Sustainability and Commercial Success

Nicolaj Reffstrup, the CEO of GANNI, a Danish fashion brand known for its sustainable practices, and the brand's creative director Ditte Reffstrup, discuss the anxiety they feel in choosing the “right” fabrics. They are seeking alternatives to real leather since a large part of carbon footprints comes from fabric production, with leather accounting for a large portion of their greenhouse gas emissions (37:00-39:30, Garcia). However, finding alternatives is challenging because today's popular alternative, vegan leather, is made of plastic. The other, more environmentally friendly alternative, pineapple leather, is as expensive as real leather (40:00-40:40), making commercial success more difficult.

Furthermore, Nicolaj Reffstrup points out that the real impacts will only be visible when fashion conglomerates such as Kering, Phillips-Van Heusen Corporation (PVH), Moët Hennessy Louis Vuitton (LVMH) exclusively practice production with environmentally certified fabrics (42:00-43:30). The ultimate question Nicolaj Reffstrups asks is how much people are willing to spend on environmental sustainability, as environmentally certified fabrics cost 8-10 % more expensive than conventional fabrics (42:00-43:30).

Kering, PVH, LVMH report their nonfinancial performance, specifically the environmental aspects, through sustainability reports or corporate responsibility reports. Today, Kering owns brands such as Gucci, Saint Laurent, Bottega Veneta, Balenciaga, and Alexander McQueen; PVH owns Calvin Klein, and Tommy Hilfiger; and LVMH owns Tiffany & Co., Christian Dior, Fendi, Givenchy, Marc Jacobs, Stella McCartney, Loewe, Loro Piana, Kenzo, and Celine. In other words, many thriving retail companies that claim

to be sustainable continue to prioritize profits and choose to remain competitive in the market instead of transitioning to more environmentally sustainable business practices. Although small changes are noticeable among startups and small firms, companies with significant production scales in the market do not necessarily prioritize reducing energy consumption, chemical usage, and greenhouse gas emissions.

3.2. Fiduciary Duties of CEOs

One of the reasons why the private sector may not prioritize environmental sustainability, as mentioned earlier, is because companies operate based on the interest of primary stakeholder groups, such as shareholders and board members. They view sustainability and sustainability report as opportunities to increase stakeholder loyalty and better manage business risk. Specifically, the legal obligations of CEOs encourage them to put their commercial interests over ecological interests.

As the highest status in a company, the CEOs have fiduciary duties, that legally require them to maintain profitability of the business for the benefit of shareholders. According to the American Bar Association states that CEOs' fiduciary duties toward shareholders are legally enforceable and involve the responsibility of shareholders' property (Brown, 2018). Therefore, even if CEOs recognize the importance of environmental sustainability, it can be challenging for them to take action if it does not contribute to commercial success. In summary, it is crucial to establish incentives and financial benefits that align board members and shareholders' interests with environmental sustainability.

Considering the primary interests and characteristics of the private sector, the question arises as to how much value companies and their stakeholders place environmental sustainability and whether they are willing to prioritize it over profits. The following chapter will present evidence from previous academic literature to further enrich the discussion.

CHAPTER TWO

LITERATURE REVIEW

1. Past Research on the Correlation between Sustainability Report and Stock Prices

As commercial success and financial benefits are priorities of the private sector, this research focuses on the potential short-term financial benefits, specifically stock market returns, associated with the release of sustainability report. There has been limited research conducted on whether investors care sustainability reports or not, particularly studies that demonstrate positive correlations between the release of sustainability report and stock market reactions. The following highlights key findings from these studies.

According to Du et al. (2017), previous research has shown that there were daily abnormal returns on the release date of the sustainability report for companies such as the retail brand Gap in 2011 and the beverage company Coca-Cola in 2008 (p.315). Their research revealed that organizations with weaker information environments experienced more significant impacts on stock prices (p. 314), as the release of the report appeared unexpected and surprising. In the long term, companies that publish release sustainability reports tend to have higher sustainability performance values, which can contribute to stronger stakeholder loyalty and increased market value (p. 327).

Nugroho and Arjowo (2014) investigated the influence of sustainability report disclosure on returns on assets using companies listed on Indonesian Stock Exchange. They found positive market returns, but the effects on other factors used to measure companies' financial performances, such as dividend payment ratio, were not statistically significant (p. 236).

Research conducted by Berthelot et al. (2012) on Canadian companies listed on the Toronto Stock Exchange indicates that investors value sustainability report positively (p. 361). Grewal et al. (2019) state that statistically significant and positive results are more pronounced for companies with lower sustainability ratings or significant investment in ESG performances of their business operations (p. 536).

In short, there is some evidence of positive market reactions, but there are still research gaps that this research aims to address and contribute to.

2. Research Questions

In particular, this research poses the following question: Do ESG reports provide short-term financial benefits to energy and luxury goods companies? Specifically, it investigates whether there are abnormal market returns surrounding the release of sustainability report. The subsequent chapters examine the impact of sustainability report releases by three energy companies, Chevron, Equinor, Enbridge, as well as two fashion conglomerates, LVMH and Richemont. These two sectors were chosen for two reasons: (a) businesses in these sectors have had significant impacts on the environment and (b) companies in these sectors are increasingly emphasizing their commitment to environmental sustainability and ESG performance.

CHAPTER THREE

THEORETICAL FRAMEWORK

In the past, economists assumed adaptive expectations, which implied that investors formed expectations about the market based on past experiences and events (Mishkin, 2018, p. 197). However, since new information can also influence investors' expectations, adaptive expectations may be imprecise. The theory of rational expectations, developed by John Muth, incorporates this idea and expands it into the Efficient Market Hypothesis (EMH). EMH states that the expected return on a security will equal the optimal forecast of its return (p. 200). This relationship can be demonstrated by the following equation:

$$R^e = R^{of} \quad (1)$$

Where

R^e = the expected return on the security

R^{of} = the optimal forecast of the return

In other words, stock prices immediately incorporate the new information without being influenced by the previous day's price fluctuations (Malkiel, 2003, p. 59).

1. Research Hypothesis

Based on the theoretical framework and research objectives, this study has formulated the following hypotheses to examine the impact of the sustainability report releases on daily abnormal stock returns:

H1: The release of a sustainability report changes the optimal forecast of a given company's return, indicating support for the Efficient Market Hypothesis (EMH).

H2: The release of a sustainability report leads to a statistically significant increase in stock returns, demonstrating the value investors place on the sustainability reports.

CHAPTER FOUR

DATA AND METHODOLOGY

1. Data

Table 1. Descriptive Statistics for Daily Closing Prices, USD, Jan-Aug 2022

	No. of Obs.	Mean	Standard Deviation	Min	Max
Chevron Closing Price	63	155.2	11.8	135.94	181.13
Equinor ASA Closing Price	61	34.02	3.29	28.2	39
Enbridge Closing Price	61	43.38	1.83	40.49	47.53
LVMH Closing Price	63	608.08	33.79	542.6	671.8
Richemont Closing Price	62	103.34	5.17	91.76	112.5
NYA Closing Price	185	15491.53	830.20	14097.05	17069.66
CAC40 Closing Price	63	6445.28	183.90	5962.96	6792.16
Swiss Market Index Closing Price	62	11182.21	419.16	10451.31	12001.88

Time series data on the daily stock prices of five publicly traded companies in the energy and luxury goods industries (n) listed on NYA, CAC40, or Swiss Market, yields 310 ($N=n*T$) observations. The sample for each company includes 61-63 days (T) around the release of sustainability reports. As the release dates differ for each enterprise (07/13/2022 for Chevron, 03/18/2022 for Equinor, and 06/22/2022 for Enbridge), the NYA closing price has 185 observations to cover all the selected dates, CAC40 has 63 observations around the event date of 04/28/2022 for LVMH, and Swiss Market Index has 62 observations around the sustainability report release of Richemont on 06/02/2022.

This paper utilizes data from four publicly traded companies listed on the New York Stock Exchange (NYSE), Euronext Paris, or SIX Swiss Exchange: Chevron, Equinor ASA, and Enbridge Inc, Moët Hennessy Louis Vuitton (LVMH), Compagnie Financière Richemont S.A. (Richemont). The stock prices of these companies are available on Bloomberg Terminal. As a market benchmark,

this paper refers to the NYSE market index NYA, the Euronext Paris market index CAC40, and Swiss Market Index, whose prices are available also on Bloomberg Terminal. The event date is determined as the first available press release date found on the internet. The release dates were identified by referencing press pages of the respective company's websites or various sources on the internet, such as Reuters and CSR wire.

2. Empirical Methodology

2.1. Stock Return Calculation

In order to assess the impact of sustainability reports releases, this paper employs the calculation of Cumulative Abnormal Return (CAR). Daily stock returns are determined by taking the difference between the closing price on day t and t-1, divided by the closing price on day t-1.

$$r_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad (2)$$

Where

$r_{i,t}$ = daily stock returns for the company i on day t

$P_{i,t}$ = closing price for company i on day t

$P_{i,t-1}$ = closing price for company i on day t-1

2.2. Cumulative Abnormal Return

The Cumulative abnormal Return (CAR) is calculating by summing the daily abnormal returns, which are the differences between the daily returns and benchmark returns, over the specific event window.

$$CAR(t, t + x) = \sum_{k=t}^{t+x} Y_{i,t} \quad (3)$$

Where

t = event day

$Y_{i,t}$ = daily abnormal return for company i on day t

2.3. Capital Asset Pricing Model (CAPM) for Event Study

The following regression examines the relationship between daily stock returns, benchmark returns, and an event dummy variable. The event dummy variable takes a value of 1 during the event window and 0 otherwise.

$$r_{i,t} = \alpha + \beta r_{m,t} + \sum_{k=t}^{t+x} \sigma_{i,t} d_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where

$r_{i,t}$ = daily abnormal returns for the company i on day t

$r_{m,t}$ = daily market return on day t

$d_{i,t}$ = event dummy for the company i on day t

$\varepsilon_{i,t}$ = error term

Using this equation (4), this research applies a multiple linear regression, specifically Ordinary Least Squares regression (OLS), to estimate coefficients and analyze the relationship between the event dummy and daily stock returns. The objective is to examine stock price reactions following the release of sustainability reports by the selected companies. The OLS regression tests the null hypotheses, which state that coefficients are

zero or there is no statistically significant relationship between dependent and independent variables. Rejecting the null hypothesis would provide evidence of a significant relationship between the report release and its short-term impacts on daily stock prices. Such evidence might be able to serve as a motivation for companies to enhance the quality of their sustainability reports.

CHAPTER FIVE

RESULTS AND DISCUSSION

Table 3 presents the results of the CAPM event study analysis for both energy and luxury goods companies. The adjusted R squared indicates the proportion of the variation in daily returns of companies' stocks that can be explained by the chosen independent variables of benchmark returns and event dummy. The adjusted R squared is relatively low, ranging from around -0.02 to 0.004 across all event windows, suggesting that this simple model of the daily stock return does not account for a significant portion of the actual variation in daily stock returns.

Table 3. CAPM Event Study Analysis Result for Energy and Luxury Goods Companies

	Event Window				
	t	t+1	t+3	t±1	t+7
Benchmark Return	-0.03	-0.03	-0.3	-0.03	-0.003
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Event Dummy	-0.01	-0.05	-0.002	-0.002	-0.002
	(0.01)	(0.01)	(0.004)	(0.006)	(0.004)
P-value	0.6	0.7	0.8	0.9	0.9
Adjusted R ²	-0.02	-0.02	0.004	0.0007	-0.02
Unbalanced Panel	n=5, T=61-63, N=310				
This table shows the statistical result for the equation (4).Standard errors are reported in brackets below each coefficient estimate.					

Additionally, the p-value for all event windows exceeds the significant level of 0.05, indicating that we cannot reject the null hypothesis that the coefficient estimates are zero at the 90% confidence interval. The p-value represents the probability of observing the null hypothesis as true.

1. Results for Energy Companies

Table 4. CAPM Event Study Analysis Result for Energy Companies

	Event Window				
	t	t+1	t+3	t±1	t+7
Benchmark Return	-0.04** (0.11)	-0.4** (0.1)	-0.4*** (0.1)	-0.4** (0.1)	-0.4** (0.11)
Event Dummy	-0.01 (0.01)	-0.004 (0.01)	-0.01 (0.004)	-0.002 (0.01)	0.005 (0.004)
P-value	0.004	0.005	0.003	0.005	0.003
Adjusted R ²	0.04	0.04	0.04	0.04	0.04
Unbalanced Panel	n=3, T=61-63, N=185				
This table shows the statistical result for the equation (4).Standard errors are reported in brackets below each coefficient estimate. ** and *** indicate statistical significance based on p-value at the 1 and 10 percent level respectively.					

Table 4 presents the CAPM event study analysis for a subsample of all data set, focusing on the following energy companies: Chevron, Equinor, and Enbridge. The adjusted R-squared for this regression is as low as 0.04 for all the event windows, which leads to the rejection of both H1 and H2. Contrary to the hypothesis based on past academic literature, the coefficients, except for

the event window t+7, are negative. This indicate that there are not positive market returns around the release of sustainability reports for these companies.

2. Results for Luxury Goods Companies

Table 5 presents the identical study for two luxury goods companies: LVMH and Richemont. The adjusted R-squared for this regression is as low as 0.06-0.08 for all the event windows, indicating that this result is statistically insignificant, and the coefficients for the event dummies are negative. Therefore, these results also reject the H1 and H2. As shown in the CAR in Table 2, it is evident that there is also no significant daily returns around the release of sustainability reports by Chevron, Equinor, Enbridge, LVMH and Richemont. Based on these results, this research does not find a correlation between the release of sustainability reports and positive market returns.

Table 5. CAPM Event Study Analysis Result for Luxury Goods Companies

	Event Window				
	t	t+1	t+3	t±1	t+7
Benchmark Return	0.4**	0.39**	0.4**	0.4**	0.39**
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Event Dummy	-0.005	-0.004	-0.002	-0.004	-0.01
	(0.01)	(0.01)	(0.006)	(0.009)	(0.005)
P-value	0.007	0.007	0.007	0.006	0.002
Adjusted R ²	0.06	0.06	0.06	0.06	0.08
Number of observations	n=2, T=62-63, N=125				
This table shows the statistical result for the equation (4).Standard errors are reported in brackets below each coefficient estimate. ** and *** indicate statistical significance based on p-value at the 1 and 10 percent level respectively.					

3. Hypothesis Testing

Hypothesis (H0) : There is no evidence of statistically significant influences on daily stock returns of the chosen energy and luxury goods companies associated with the release of sustainability reports.

$$H_0: \widehat{\sigma}_0 = 0$$

$$H_A: \widehat{\sigma}_0 \neq 0$$

According to the results, at the 95% confidence level, the null hypothesis states that $\widehat{\sigma}_0 = 0$. This suggests that there is no statistically significant influence on the daily stock returns of the chosen energy and luxury goods companies regarding the release of sustainability reports.

4. Discussion

The above results lead to several insights regarding the relationship between market reactions and sustainable reports published by private companies. Firstly, since most publicly traded companies now publish sustainability reports, the report release may not appear particularly surprising or significant for investors in the short term. In other words, it is not significant to the extent that investors may regularly check articles and press releases related to the release of the reports frequently on the internet. This finding aligns with the understanding of Efficient Market Hypothesis (EMH), indicating that the release of sustainability reports does not provide new information that would be the optimal forecast of market returns, thus rejecting both H1 and H2. This contrasts with previous literature such as the research conducted by Du, et al. (p. 315, 2007), where it was more common to compare the financial benefits between companies that do and do not publish sustainability reports.

Additionally, the impact of sustainability reports may depend on the companies' information environment, as sustainability reports from companies already known for their sustainable practices may not come as a surprise (Du et al., p. 314, 2007). Nowadays, there is a stronger information environment regarding companies' sustainable practices through advertisements and corporate websites today, which could be another reason why the release of sustainability reports does not appear to significantly impact investors.

Furthermore, investors might not pay much attention to sustainability report, especially in the short term. This could be due to the lack of general understanding and shared definitions related to environmental sustainability, which might make arguments regarding environmental sustainability unclear or confusing. To address this issue, third-party organizations or the public sector could play a role in creating legislation and shared measures for related terms.

Another reason for the statistically insignificant results of this research may be that investors, particularly those seeking short-term gains from investments such as stocks, may typically prioritize immediate financial returns and might not consider long-term factors as environmental sustainability. In contrast, investors of financial products for long-term investment, such as pension funds, may have different perspectives. According to an online business journal published by the Wharton School of the University of Pennsylvania, pension funds are characterized by their inherent long-term investment horizon (The Wharton School, 2021). Since measuring the cumulative progress of long-standing global issues like climate change takes years, if not decades, individuals can be more likely to prioritize environmentally sustainable investment options in pension funds. Therefore, comparing market reactions between stocks and pension funds could be a suitable area for future research.

CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

This research examined whether the stock market observes positive abnormal returns around the release of sustainability reports and tested the presence of statistically significant relationship between market reactions and the release of the sustainability report for three energy companies and two luxury companies listed on the New York Stock Exchange (NYSE), Euronext Paris, and SIX Swiss Exchange. Event analysis using panel data regression reveals no statistic evidence that such a correlation exists, and it is unlikely that the financial market for the energy industry responds to sustainability report releases.

Chapter one and two provided perspectives from public policy, business, economics on environmental sustainability in the private sector, highlighting the crucial question of how much individuals, companies, institutions are willing to invest in this topic. It was noted that when companies' claims regarding environmental sustainability in advertisements and ESG or sustainability pages on their websites do not align with the actual environmental impacts of their business practices, their information transparency may be questionable. Given the growing importance of sustainability, ESG, CSR to younger generations, this research theme will continue to be crucial.

In future research, it would be beneficial to expand the dataset to include a larger sample size, encompassing a wide range of company types. This would provide more precise results and a broader understanding of the topic. Additionally, conducting qualitative analysis of sustainability reports could offer insights into the various measures that companies employ to assess their ESG performance, as well as their definitions and understandings on environmental sustainability.

Furthermore, comparing the characteristics and investor preferences of long-term and short-term financial assets would practice a more accurate picture of characteristics investors value in ESG investment. Exploring these ideas would contribute to a better understanding of the intersection of profit maximization and corporate social responsibility, ultimately leading to practical solutions for incentivizing environmental sustainability in the private sector. I look forward to exploring these research ideas and related questions in future studies.

REFERENCES

- Al-Shaer, H., Albitar, K. & Liu, J. CEO power and CSR-linked compensation for corporate environmental responsibility: UK evidence. *Rev Quant Finan Acc* 60, 1025–1063 (2023). <https://doi.org/10.1007/s11156-022-01118-z>.
- Berthelot, S., Coulmont, M. and Serret, V. (2012), *Do Investors Value Sustainability Reports? A Canadian Study*. *Corporate Social Responsibility and Environmental Management.*, 19: pp. 355-363. <https://doi.org/10.1002/csr.285>.
- Brown, Sara Ann. (2018). D&O Fiduciary Duties During Insolvency. American Bar Association. <https://www.americanbar.org/groups/litigation/committees/business-torts-unfair-competition/practice/2018/d-and-o-fiduciary-duties-during-insolvency/>. Accessed on 26 April 2023.
- Campbell, J. L. (2007). Why Would Corporations Behave in Socially Responsible Ways? An Institutional Theory of Corporate Social Responsibility. *The Academy of Management Review*, 32(3), 946–967. <http://www.jstor.org/stable/20159343>.
- Cremers, Jan., Houwerzijl, Mijke. (2021), Subcontracting and social liability, European trade union confederation, Brussels, https://www.etuc.org/sites/default/files/2021-10/Subcontracting%20and%20social%20liability_EN.pdf.
- Clarkson, M. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *The Academy of Management Review*, 20(1), 92-117. <https://doi.org/10.5465/amr.1995.9503271994>.
- Climate Watch. *Historical GHG emissions by sectors*. https://www.climatewatchdata.org/ghg-emissions?breakBy=sector&chartType=area&end_year=2019&start_year=1990. Accessed on 4 March 2023.
- Degrees, Hans., Kim, Moshe., Ongena, Steven. (2009). *Microeconometrics of Banking: Methods, Applications, and Results*. p. 9-25, p. 26-56. <https://podcasts.apple.com/jp/podcast/entreprendre-dans-la-mode/id1300541489?i=1000546003331>

- Dordon, Sarah. (2022) *How to make sustainable investing work*. Financial times. <https://www.ft.com/content/911a90ea-0438-436f-9ae4-17c15ba2481c>. Accessed on 5 March 2023.
- Du, S. et. al. (2017) The Business Case for Sustainability Reporting: Evidence from Stock Market Reactions *American Marketing Association*, 313-330, Sage.
- European Commission. *Corporate sustainability due diligence*. https://commission.europa.eu/business-economy-euro/doing-business-eu/corporate-sustainability-due-diligence_en. Accessed on 26 April 2023.
- European Commission. *Sustainability-related disclosure in the financial services sector*. https://finance.ec.europa.eu/sustainable-finance/disclosures/sustainability-related-disclosure-financial-services-sector_en. Accessed on 26 April 2023.
- European Commission. *Internal market, industry, entrepreneurship and SMEs* https://single-market-economy.ec.europa.eu/smes_en. Accessed on 26 April 2023.
- European Commission, *How green are your finances?* https://ec.europa.eu/green-finances/index_en.html. Accessed on 26 April 2023.
- Grewal, J., Hauptmann, C. & Serafeim, G. (2021). *Material Sustainability Information and Stock Price Informativeness*. *Journal of Business Ethics* 171, pp. 513–544. <https://doi.org/10.1007/s10551-020-04451-2>.
- Knox, S., Maklan, S., & French, P. (2005). Corporate Social Responsibility: Exploring Stakeholder Relationships and Programme Reporting across Leading FTSE Companies. *Journal of Business Ethics*, 61(1), 7–28. <http://www.jstor.org/stable/25123598>.
- Marsh, A. (2022). *Banks try quiet quitting on net zero. Last year's enthusiasm for GFANZ turns into anxiety*. Bloomberg. <https://www.bloomberg.com/news/articles/2022-10-14/banks-try-quiet-quitting-net-zero-as-fortune-favors-fossil-fuels?leadSource=uverify%20wall>. Accessed on 4 March 2023.
- Malkiel, B. G. (2003). The efficient market hypothesis and its critics. *The Journal of Economic Perspectives*, 17(1), 59-82. <https://doi.org/10.1257/089533003321164958>.
- Mishkin, Frederic. (2018) *The Economics of Money, Banking and Financial Markets*. Chapter 7.

- Kahn, M. E. (2015). A review of the age of sustainable development by jeffrey sach's. *Journal of Economic Literature*, 53(3), pp. 654-666. doi:<https://doi.org/10.1257/jel.53.3.654>.
- Mankiw, Gregory (2020). *C.E.O.s Are Qualified to Make Profits, Not Lead Society*. *Economic Review*. The New York Times. <https://www.nytimes.com/2020/07/24/business/ceos-profits-shareholders.html>. Accessed on 23 April 2023.
- Morgan Stanly (2021). *Sustainable finance disclosure regulation*. <https://www.morganstanley.com/im/en-la/intermediary-investor/about-us/newsroom/press-release/sustainable-finance-disclosure-regulation.html#:~:text=Article%20%20products%20are%20those,process%20in%20a%20binding%20manner>. Accessed on 26 April 2023.
- Nugroho, P. I., & Arjowo, I. S. (2014). *The effects of sustainability report disclosure towards financial performance*. *International Journal of Business and Management Studies*, 3(3), pp. 225-239.
- Paton, Elizabeth. (2022). *Why does fashion love this radical anticapitalist concept?* The new york times. <https://www.nytimes.com/2022/11/17/fashion/degrowth.html>. Accessed on 26 April 2023.
- Penny, Daniel. (2023). *Can fashion week's trash problem be solved?* The new york times. <https://www.nytimes.com/2023/01/31/style/copenhagen-fashion-week-sustainability.html>. Accessed on 26 April 2023.
- The Wharton School of the University of Pennsylvania. (2021). *How far could pension funds drive sustainable investing?* Knowledge at Wharton. <https://knowledge.wharton.upenn.edu/article/far-pension-funds-drive-sustainable-investing/>. Accessed on May 28 2023.
- United Nations (2018). *UN helps fashion industry shift to low carbon*. <https://unfccc.int/news/un-helps-fashion-industry-shift-to-low-carbon>.
- UNIDO (United Nations Industrial Development Organization). What is CSR? <https://www.unido.org/our-focus/advancing-economic-competitiveness/competitive-trade-capacities-and-corporate-responsibility/corporate-social-responsibility-market-integration/what-csr>. Accessed on 30 May 2023.

和文抄訳

気候変動はあらゆるセクターにとって緊急の課題であり、特にエネルギー産業やファッション産業などの、天然資源の採取と絶え間ない消費によってビジネスモデルを構築してきた民間企業にとっては、なおさらである。上場企業は、ステークホルダーに非財務的なパフォーマンスを開示し、社会的イメージを高めるために、しばしばサステナビリティレポートを発行している。しかし、サステナビリティやESG（Environmental, Social, and Corporate Governance）パフォーマンスといった用語は定義が共有されていないため、文脈によって意味が異なり、サステナビリティに関する取り組みの実際の成果はあまり考慮されていない。欧州では近年、SFDR（Sustainability Finance Disclosure Regulation）やCSDD（Corporate Sustainability Due Diligence）という法律が制定され、民間企業の環境責任の基準設定や、企業の環境持続性への取り組みに基づく金融プロダクトの分類が試みられている。一方で、商業的成功やCEOの忠実義務など、根本的に経営者が事業運営において環境に配慮した決断を下すことを妨げる要因がある。

しかし、仮にサステナビリティレポートが短期的に財政的な利益をもたらすとしたらどうだろうか。サステナビリティレポートの発表前後に株式市場の異常リターンがあったとしたらどうだろうか。この場合、サステナビリティレポートは、企業はレポートの質を高め、自社の環境責任を批判的かつ科学的に測定する動機付けとなるのだろうか。本稿では、ニューヨーク証券取引所（NYSE）、ユーロネクスト・パリ、スイス証券取引所のいずれかに上場しているエネルギー企業3社と高級品企業2社によるサステナビリティレポートの発表前後の株式市場のリターンを調査する。その結果、レポートの発表と株式市場の反応との間には統計的な相関関係がみられなかった。有力な理由として、根本的に株式投資において短期間のリターンが期待されていることや、今日多くの上場企業がサステナビリティレポートを公開しているために投資家にとってレポートの開示が衝撃でないことなどが挙げられる。これらの仮定を検証方法として今後も研究を進めていきたい。