



Vaasan yliopisto
UNIVERSITY OF VAASA

Samuli Uimaniemi

**Socially Responsible Investment Funds:
Performance during Brexit – an Event Study**

School of Accounting and Finance
Master's thesis in Finance
Master's Degree Programme in
Finance

Vaasa 2025

UNIVERSITY OF VAASA**School of Accounting and Finance**

Author: Samuli Uimaniemi
Title of the Thesis: Socially Responsible Investment Funds: Performance during Brexit – an Event Study
Degree: Master's Degree Programme in Finance
Programme: Finance
Supervisor: Sami Vähämaa
Year: 2025 **Sivumäärä:** 62

ABSTRACT:

Sosiaalinen vastuullisuus on kasvava teema koko yhteiskunnassa, mikä ei rajoitu vain sijoittamiseen tai tuottavuuteen. Se kuitenkin antaa mahdollisuuden sijoittajille tehdä päätöksiä eettisistä lähtökohdista lähtien. On erittäin mielenkiintoista tarkastella voiko sosiaalisesti vastuullisesti rajaamalla päästä kuitenkin samoihin tuottoihin verrattuna tavallisiin tuotteisiin, jotka eivät tällaista rajausta tee, ja näin ollen niin sanotusti "tehdä hyvää" tehden samalla tuottoa. Toinen merkittävä teema tutkimuksessa on sosiaalisen vastuullisuuden lisäksi Britannian ero Euroopan Unionista, eli niin kutsuttu Brexit. Britannian ero Euroopan Unionista on historiallisesti merkittävä tapahtuma, ja yksi koko Euroopan Unionin merkittävimmistä sen koko historiassa.

Tämän tutkimuksen tavoitteena on tarkastella sosiaalisesta vastuullisesti sijoittavien rahastojen tuottavuutta suhteessa indekseihin markkinatapahtumissa. Valittu tarkasteluajankohta tutkimuksessa on aiemmin mainittu Britannian eroaminen Euroopan Unionista. Tutkimuksessa kohdennetaan tarkastelu koskemaan kolmea markkinatapahtumaa liittyen Brexitiin. Nämä tapahtumat ovat kansanäänestys eroamisesta, eroaminen sekä siirtymäajan päätyminen. Tutkimuksen teoria puolestaan koostuu sosiaalisesti vastuulliseen sijoittamiseen liittyen, ja mitä sosiaalisesti vastuullinen sijoittaminen on. Lisäksi tutkimuksessa käydään läpi Brexitin eri vaiheet ja taustat. Tutkimus on tehty Event Study -menetelmää käyttäen. Event study -menetelmässä valitaan tietty tapahtuma, ja hyödynnetään sitä tapahtuman vaikutuksen arvioimiseen tuottavuuden kannalta. Tärkeitä menetelmiä vaikutuksen tuottavuuden laskemiseen liittyen ovat epänormaali tuotto hyödyntäen odotettua tuottoa, sekä kumulatiivinen epänormaalituotto. Näiden avulla voidaan laskea mikä vaikutus tapahtumalla oli tuotteiden tuottavuuteen sekä minkälaisen poikkeaman tapahtuma aiheutti. Tutkimuksen materiaali koostuu 13 rahastosta, jotka ovat MSCI ESG Fund Rating -luokituksessa "johtajia" eli saaneet vähintään luokituksen AA tai AAA. MSCI pidetään sosiaalisesti vastuullisten rahastojen luokittelun edelläkävijänä. Rahastojen tuottavuutta verrataan kahteen indeksiin, STOXX 600 ja FTSE 100. STOXX 600 edustaa koko Euroopan markkinoita, ja FTSE 100 puolestaan on keskitetty Ison-Britannian markkinoille.

Tutkimuksen tulosten perusteella voidaan todeta, että ensimmäinen, kansanäänestys, ja kolmas, siirtymäajan päätyminen, vaikuttivat tuloksiin ja tuotettavuuteen huomattavasti enemmän kuin toinen tapahtuma, eroaminen. Britannian markkinoita seuraava FTSE 100 indeksi oli huomattavasti negatiivisempi odotuksien suhteen jokaisessa tapahtumassa, kuin sosiaalisesti vastuulliset sijoittavat rahastot tai toinen indeksi, STOXX 600. Tämän johdosta se ylitti joka kerta odotetun tuoton, toisin kuin rahastot ja STOXX 600, jotka puolestaan jäivät odotuksista niin ensimmäisessä kuin kolmannessa tapahtumassa. Kaiken kaikkiaan sosiaalisesti vastuullisesti sijoittavien rahastojen tuotto oli lähes samalla tasolla indeksien kanssa, joten sijoittaja joka haluaa tehdä sijoituspäätöksensä eettisistä lähtökohdista lähtien, voi jatkossakin tehdä niin menettämittä tuottoja. Lisäksi on huomioitavaa, että jälkimmäisissä kahdessa tapahtumassa maailmaa ravisteli jo globaali pandemia CoVid-19, jonka vaikutusta ei voida yksilöidä ja erotella tuloksista.

KEYWORDS: Social Responsibility, Investing, Mutual funds, Event study, Profitability

Contents

1	Introduction	6
1.1	Purpose of the study and research question	9
1.2	Motivational factors	10
1.3	Possible limitations and the structure of the study	11
2	Theoretical background	14
2.1	Socially responsible investing	14
2.1.1	Defining socially responsible investing	14
2.1.2	SRI strategies and screening	15
2.1.3	History of SRI investing	20
2.2	Efficient Market Hypothesis	21
2.3	Modern Portfolio Theory	23
3	Literature review	25
3.1	Negative performance	26
3.2	Neutral performance	27
3.3	Positive performance	29
4	Brexit	33
4.1	History of Brexit	33
4.2	Financial impact of Brexit	35
5	Data and methodology	37
5.1	Data	37
5.2	Methodology	40
5.2.1	Event study methodology	40
5.2.2	Abnormal returns	42
5.2.3	Constant Mean-Return model	43
5.2.4	Market model	43
5.2.5	Cumulative Abnormal returns	44
6	Empirical results	45

6.1	Estimation period	45
6.2	The Referendum	46
6.3	The Withdrawal	47
6.4	The end of Transition period	48
7	Conclusions	50
	References	53
	Appendices	62

Pictures

Figures

Figure 1. The Six Principles of UN PRI (adapted from PRI, 2022)	7
Figure 2. SRI Strategies and screening (adapted from Eurosif, 2018).....	15
Figure 3. Overview of SRI Strategies (adapted from Eurosif, 2018)	19
Figure 4. The minimum-variance frontier of risky assets (Bodie et al. 2014: 220).	24
Figure 5. Brexit Timeline (Adapted from Stoupos and Kiohos, 2021)	34
Figure 6. Stoxx Europe 600 Index (adapted from Stoxx, 2022)	37
Figure 7. FTSE 100 Index (adapted from London Stock Exchange, 2022)	38
Figure 8. Fund ESG Quality Score (adapted from MSCI, 2022).....	39

Tables

Table 1. The results for the first event window, The Referendum.	46
Table 2. The results for the second event window, The Withdrawal.	47
Table 3. The results for the third event window, The end of Transition period.	48

Abbreviations

1 Introduction

Socially responsible investing has been receiving increasing interest since the beginning of 21st century. Socially responsible investing incorporates environmental, social and governance (ESG) factors in the investment evaluation and decision. Kyle Peterdy from the Corporate Finance Institute (2025) defines ESG as a framework which stakeholders can utilize in order to understand how different organizations administer different opportunities and risks related to the ESG factors. The public has become more aware on global issues such as climate change, pollution, global warming and human rights. Corporates that ignore said and other issues may face mass boycotts as news about the infringements travel way quicker than previously. As awareness related to the ethical and social conduct of businesses has surged, they have also become important aspects on investors investment decision making processes. To suit this social and ethical demand from investors, many different socially responsible investment funds have been created.

Socially responsible investing, SRI, also often referred as sustainable investing or ethical investing, is a long-term focused approach in investing, that incorporates and focuses on environmental, social and governance (ESG) factors. Additionally, responsible investing incorporates the six principles published in 2006 by UN PRI. Principles for Responsible Investment, PRI, is a United Nations supported international network of investors that work towards incorporation of ESG factors into investment and ownership decisions. The six principles are presented in Figure 1. (PRI, 2022)

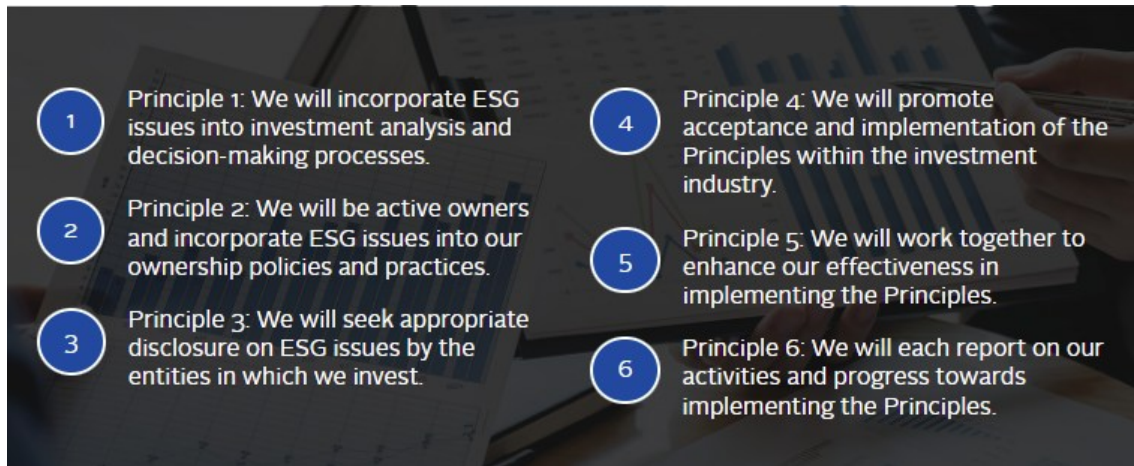


Figure 1. The Six Principles of UN PRI (adapted from PRI, 2022)

Even though socially responsible investing and socially responsible funds have been around for almost 50 years, first socially responsible fund being established in the 1973 (Metoyer, 2015.), it is the last 25 years that the investing world has seen the rise of different funds coming to existence. In 1995, the sustainable investments accounted in the for 639 billion dollars in the US. By 2020, the number had increased to 16 564 billion dollars, from which 3 060 billion was in mutual funds (US SIF Foundation, 2020.).

When socially responsible investing is researched, it is often questioned whether it is possible to do well while doing good. This is somewhat misleading, as socially responsible investing should not be considered to be a method of charity or philanthropy. Socially responsible investing seeks out maximized returns just like conventional investing does, but the proposition of it is that integrating personal values and social responsibility and sustainability will not limit profitability. In theory, as Markowitz noted in his study in 1952, limitations in the security selection leads to inefficient risk-return relationship in a portfolio. As socially responsible investing restricts the asset pool, by for an example exclusions, in theory it should not be able to reach fully optimal risk-return relationship for a portfolio. However, there are other arguments, such as presented by Wagner et al. (2001), that being socially responsible benefits the company as it gives a competitive advantage, which then leads to increased performance stock wise. The results in general for the performance of socially responsible investing are conflicted.

Every now and then something special or unfortunate happens in the world, which leads to a market event. The event can be quite miniscule, affecting only part of the market, such as launch of a new satellite (SpaceX, 2021.), or it can be a container ship getting stuck in canal leading to temporary shortage of daily goods (Goodman & Yee, 2021.). However, it can also be huge and lead to global crisis. In 2008, the whole financial world had a massive shock when financial crisis hit. It caused recession, and its effect can still be seen today. Latest big market event is the Covid-19 global pandemic. Covid-19 caused massive crash in stock exchanges around the globe when it truly hit in March 2020. After the crash hit the bottom, stock exchanges surged and exceeded values prior to the crash. Studying the performance of socially responsible investing during market events can provide investors additional information on how socially responsible investments fare when compared to conventional counterparts.

The financial crisis of 2008 – 2009 displayed the importance of corporate social responsibility. World Bank (2003) states that corporate social responsibility represents the commitment for participation in sustainable economic development. Corporate social responsibility and socially responsible investing are often affiliated in both, academic literature and in practise. Lins et al. (2017) studied the social capital of companies by measuring the corporate social governance intensity. Their study took place during the crisis of 2008 – 2009, and the results indicated that companies with high social capital had higher returns on their stocks.

The main feature of the thesis is the Britain's exit from the European Union, the Brexit, and how it impacted the stock market from the perspective of socially responsible investing. Brexit is a major event in the history of the European Union and Europe in whole, as Britain is the first ever member state to leave the union. Britain remained in the European Union for almost 50 years but withdrew from it as a result of a referendum held in 2016. As it is such a novel event, the full impact of it has not yet been seen. The financial impact has been studied a bit so far (e.g., see Sampson (2017), Eichengreen (2019)

and Kiohos and Stoupos (2021)) and the consensus among scholars seems to be that Britain will suffer economic losses due to the Brexit. The reason why Brexit is chosen as the time period for the study, is that it is such a novel event in history in terms of geopolitical changes within the Europe. Additionally, it has not yet been studied as much as other important events like the financial crisis of 2008-2009. By focusing the study on Brexit, it is possible to draw conclusions on how socially responsible investment funds react and fare in sudden major market changes.

This study will focus on the key dates of the Brexit, and how the socially responsible mutual funds performed during those event dates. Event study methodology will be applied in order to examine the impact of the event on the performance. The key dates include the day the referendum was held, 23rd of June 2016, 31st of January 2020 when Britain officially withdrew from the European Union and 31st of December 2020 when the transition period ended, and the United Kingdom completed its separation from the European Union.

1.1 Purpose of the study and research question

This study focuses on the performance of socially responsible investment funds during Britain's exit from the European Union, and whether the performance of said funds differs from conventional, unscreened indices. Three key dates have been selected to measure the impact of the event, the 23rd of June 2016, the 31st of January 2020 and the 31st of December 2020. Previous studies conducted on the performance of socially responsible indices in general have produced mixed results. Some studies have found that socially responsible investing outperforms conventional benchmark indices, and vice versa, while some have produced results that there are no statistically significant differences in the performances between the two. This leads to first hypothesis, the null hypothesis:

H_0 : Britain's exit, Brexit, does not have an impact on the returns of socially responsible investment mutual funds.

However, study conducted by Lins et al. (2017) found that firms that had high CSR-rating (Corporate Social Responsibility) outperformed firms with low CSR-rating during financial crisis of 2008-2009. Nakai et al. (2016) indicate that the reason why socially responsible investment mutual funds outperform conventional funds, is that investors may see the companies having a stable long-term strategy due to company's interest and investment in CSR.

H₁: Socially responsible investment mutual funds outperform conventional benchmark indices in terms of abnormal returns during Brexit.

Nakai et al. (2016) studied the impact of the global financial crisis on mutual funds. Their results indicate that socially responsible mutual funds suffer less than conventional mutual funds from a negative market event, such as financial crisis. However, they do state that the reasoning behind it remains uncertain. From there we can also draw a conclusion that negative market events have lesser impact on SRI securities and indices.

1.2 Motivational factors

The increase of awareness in the eye of the public towards sustainability and social responsibility makes the topic interesting. As a trending topic, a lot of new research is being conducted on the socially responsible investing, and that combined with the increased awareness towards the issues makes the topic both interesting and significant in terms of both in business and in general. This is one of the motivating factors behind the thesis. The purpose of the study is to expand on the topic and study the impact of an event on the returns of socially responsible investment mutual funds.

Another motivational factor is that most studies focus comparing the socially responsible investment mutual funds to conventional mutual funds using methodology such as the Fama and French Three Factor Model, Capital Asset Pricing Model or some other multi-

factor model. This study uses the event study -methodology which can be used to isolate the effect of the event on the possible abnormal returns it results in. This allows a more specific examination of the event rather than overall performance comparison between the SRI mutual fund and conventional mutual funds.

As for the event in question, the Brexit, it is such a novel and unseen event that has not yet been researched a lot. Some studies have been conducted on the topic (e.g., Chiappini and Vento, 2018), but they mostly focus on the reaction of the stock market to the referendum held in June of 2016. This thesis intends to expand it to cover additional key dates related to the event, with the inclusion of the official withdrawal date and the transition period end date.

1.3 Possible limitations and the structure of the study

There are some restrictions and limitations that need to be taken into account related to the study. Firstly, as the study is conducted upon mutual funds, the capabilities of the fund managers need to be noted. Kempf and Osthoff (2007) noted that it is difficult to separate the impact on returns that the fund manager may have with his exceptional skills from the impact the socially responsible investing's attributes induce.

Another important issue is related to the Brexit itself. As Brexit is still relatively new event, its full financial and social impact is yet to be discovered. Additionally, with the global pandemic, COVID-19, the results may be partly contaminated by the pandemic, as it is virtually impossible to separate the pandemic's effect on the latter key dates.

In relation to socially responsible investing itself, there is still no universally accepted consensus on the terminology and performance measures. This leads to reporting still searching for a globally accepted formatting. Without universally accepted terminology and measuring methods, there is a potential for greenwashing of the securities, with them being marketed as being more responsible than they actually are. It can also create problematic comparisons. This is one of the reasons why the results of different studies

vary so much according to Halbritter and Dorfleitner (2015). Additionally, they emphasize the impact the responsibility resource-ranking may have on the study.

The study is structured the following way: Second chapter of the study focuses on the theoretical background of socially responsible investing and core theories related to finance, efficient market hypothesis and modern portfolio theory. Chapter 2.1 explains and defines socially responsible investing (SRI) and takes a look at the history of the concept. The different screening techniques and strategies are explained in detail in the sub-chapters. Second part, chapter 2.2, focuses on the efficient market hypothesis and chapter 2.3 covers the subject of modern portfolio theory.

From there the study will move forward to third chapter, which covers literature review. Third chapter is divided in to three chapters, that take a look at different studies with different results. Chapter 3.1 focuses on literature related to socially responsible investing that found negative outcomes on performance. In chapter 3.2 switches to studies with neutral performance. Lastly, on chapter 3.3 the study takes a look a literature conducted on socially responsible investing that resulted in positive performance compared to conventional indices.

After literature review, the study moves forward to the fourth chapter, where the topic of Britain's exit from the European Union, Brexit, is covered. Chapter 4.1 dives in the history of the subject, and in chapter 4.2 the study goes through different estimates on the financial impact of Brexit.

In chapter five, data and methodology used in the study are presented. Chapter 5.1 focuses on data and describes the selection criteria for the study. After data, the thesis moves on to methodology used in the study. In chapter 5.2 different methods used are explained. Subchapter 5.2.1 goes through methodology related to event studies and the rest subchapters describes different performance metrics and methods used.

Chapter six is divided into four different subchapters: in 6.1 the estimation period is described with its results presented, 6.2 discusses the effect on performance when the referendum took place, and 6.3 looks at the withdrawal date and 6.4 presents the results for the end of the transition period. Lastly, in chapter seven, summary of the study is provided, and conclusions will be drawn from the results, with the possible further research topics presented.

2 Theoretical background

In this chapter the study breaks down the different parts of theoretical background related to socially responsible investing and the United Kingdom's depart from the European Union, widely regarded as Brexit. As socially responsible investing is relatively new and developing topic, there is not yet a single definition that could be agreed upon by investors and academics. As for Brexit, the United Kingdom leaving the European Union, it is a major event in the history of the European Union and never seen happen before.

2.1 Socially responsible investing

As the study focuses on Brexit and European market, socially responsible investing is mostly looked at from European point of view. However, some differences and equivalents from rest of the world are also brought up in order to widen the perspective.

2.1.1 Defining socially responsible investing

Socially responsible investing does not have a single definition and differs between different perspectives. It can be said though, that there is a modest consensus regarding the terminology related to socially responsible investing (Sandberg et al. 2009). The European Sustainable Investment Forum, Eurosif, defines socially responsible investing in the European SRI 2018 Study as following:

“Sustainable and responsible investment (“SRI”) is a long-term oriented investment approach which integrates ESG factors in the research, analysis and selection process of securities within an investment portfolio. It combines fundamental analysis and engagement with an evaluation of ESG factors in order to better capture long-term returns for investors, and to benefit society by influencing the behaviour of companies.”

According to Renneboog et al. (2008a), socially responsible investing can be brought down to inclusion of social, ethical and environmental issues in the investment decision making process. However, as the area is constantly evolving, even the advocates for the socially responsible investing, Eurosif and its U.S. based counterpart US Sif (The Forum for Sustainable and Responsible Investment), have had a hard time with a single definition with it varying regularly. Although, Eurosif composed the definition presented in the previous chapter in 2016 and has stuck with it ever since.

2.1.2 SRI strategies and screening

There are several different strategies how investors can implement socially responsible investment criteria in their decisions. In the following table, seven different strategies, defined by Eurosif (2018), are introduced and later explained. Also, the corresponding strategies from different advocates are also presented.

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

Figure 2. SRI Strategies and screening (adapted from Eurosif, 2018)

In the figure 2, Eurosif refers to the aforementioned European Sustainable Investment Forum and GSIA refers to the Global Sustainable Investment Alliance, which includes Eurosif, US Sif and few others. PRI-equivalent stands for the United Nations supported

Principles for Responsible Investment, and EFAMA is the European Fund and Asset Management Association.

In the European SRI Study 2012 (Eurosif, 2020.) the exclusion of holdings from investment universe strategy is defined as an approach that rules out explicit investments or classes of investments from the universe that the investments are selected from. The exclusion is based on, for example, company practices, controversies or product categories, and can be applied to select companies, industries or countries. In 2012, Baker and Nofsinger indicated that negative screening was the oldest screening strategy and referred to the excluded investments as “sin stocks”. Most common criteria for said “sin stocks” includes exclusion of companies involved in weapon industry, tobacco, alcohol, animal testing and pornography. Eurosif (2018) notes that, although withdrawing from investing in such stocks is a good practise, exclusion has been criticized for not fulfilling requirements for being an actual SRI strategy, and that it needs to be paired with engagement and voting for it to be actually impactful. It does create a dilemma, as an investor needs to own some “sin stocks” in order to be able to exercise their right to vote. Yet, exclusion strategy remains as the biggest strategy in socially responsible investing with over 9 464 billion euros in assets under management in 2017 and having compounded annual growth rate of 23.5 percent during the previous eight years.

Best-in-class investment selection is often referred as positive screening, whilst they are not identical. Humphrey and Tan (2014.) define positive screening as including companies with positive traits, like community involvement, into the portfolio. According to Global Sustainable Investment Review (Global Sustainable Investment Alliance, 2021) selecting best-in-class option means choosing best-performing investment that has a positive ESG performance compared to industry peers and fulfils particular set of requirements in both financial analysis and in ESG matters. According to Renneboog et al. (2008a), best-in-class strategy is often combined with positive screening. In the report of 2018, Eurosif notes that Best-in-class -strategy has increased its popularity among

investors, and reached 585 billion euros mark by 2017, have by nine percent of compounded annual growth rate (CAGR), having started from 493 billion euros mark in 2015.

Norm-based screening is one of the few things related to socially responsible investing, that can be seen to have a universally accepted definition with little to no variation. According to Eurosif (2012), it is essentially excluding certain investments, if said investments are found to not be compliant with international norms and standards, set by such bodies as the UN for example. Norms refer to different specific areas, such as labour standards, environmental protection, human rights and anti-corruption principles. The norms are based upon different guidelines, and Eurosif (2018) lists the following as notable guidelines: the OECD Guidelines for Multinational Enterprises, the UN Global Compact, the ILO Tripartite Declaration of Principles regarding Multinational Enterprises and Social Policy, and the Guiding Principles on Business and Human Rights: Implementing the United Nations framework for Protect, Respect and Remedy. Although the strategy can be used as the sole screening strategy, it is often combined with either exclusion and/or engagement. This is concurred by Gunilla Hjalmarsson (2014), who also adds that the norm-based screening is mostly used in the Scandinavia and the Netherlands. Eurosif's (2018) statistics partly agree with Hjalmarsson, but France should be included, as France has the largest amount invested with norm-based screening -strategy. Italy used to be up there as well, but it has dropped significantly between the years 2015 to 2017. The whole norm-based screening -strategy has lost its popularity with a drop of 38 percent. Eurosif considers this to be the result of investors becoming more sophisticated and demanding better strategies.

Sustainability themed investment strategy approaches investing with a focus on investments that create solutions for sustainability. Eurosif (2018) states, that the idea is that investing in such themes naturally advance solving different challenges related to environment or social issues. In 2008, it became mandatory for funds to screen investments or to have an ESG analysis as a provision for to be counted in this approach. The popularity of sustainability-themed investing has also increased with CAGR being 25 percent

during 2010 to 2018. One of the reasons Eurosif lists for the growth in popularity is the debate related to climate change and the attention it has received. Additionally, focus on water-specific funds has also gained traction.

Filbeck et al. (2019) define ESG integration as inclusion of environmental, social and governance factors into the firm valuation. This strategy considers how the ESG factors affect the company's financials, and then the results of it may affect the investment decision. The ESG integration strategy has grown significantly during the last two years. In Eurosif (2018) statistics, assets under management for the strategy have increased from being 2 646 billion euros in 2015 to 4 239 billion euros in 2017, with compounded annual growth rate of 21 percent. According to Amel-Zadeh & Serafeim (2017), ESG integration is more beneficial than negative screening. However, there stands an argument that integration may possibly cause unnecessary strains on to the investment process due to costs, which was confirmed by Kempf and Osthoff (2008), stating that funds involved with ESG integration charged more expenses. (Platinga et al., 2015.)

Sixth of the seven strategies related to the SRI is engagement and voting on sustainability matters. Eurosif (2012) defines the strategy as a way to engage in activities and active ownership via voting related to ESG matters. The strategy is for long-term, and it pursues to improve how business is conducted and to advance both ethical and moral considerations whilst maximizing risk-adjusted returns. Engagement and voting also has an important affiliation with fiduciary duty. It remains the second most popular investing strategy among socially responsible investors. In 2017, Eurosif (2018) noted that engagement and voting had sustained a 14 percent growth in CAGR. Engagement and voting also has a positive correlation with performance according to Dimson et al. (2015), as they state that positive correlation with profitability, efficiency, governance and operating performance is achieved when a company has successful engagement procedures.

Barber et al. (2021) define impact investor as someone, who seeks to create positive returns in social and/or environmental matters in addition to positive financial returns.

However, according to GSIA (2021), the impact must be measured, and the intentionality of the investor or asset must be proven. Community investing can be impact investing, but it is not limited to it as it can include other financial services such as targeted lending. Eurosif (2018) states that especially first time SRI investors are drawn to impact investing. Impact investing had a major growth burst between the years 2011–2015. During the time period, assets under management for impact investing strategy increased from 8 billion to 98 billion euros. After that, the growth settled down and asset under management were 108 billion euros at the end of 2017. Compounded annual growth rate for the six-year period was a staggering 52 percent. However, impact investing strategy represent a tiny marginal portion of SRI strategies. For example, when compared to the biggest strategy, exclusions, impact investing strategy had roughly 1.1 percent of assets under management from what exclusions strategy had.

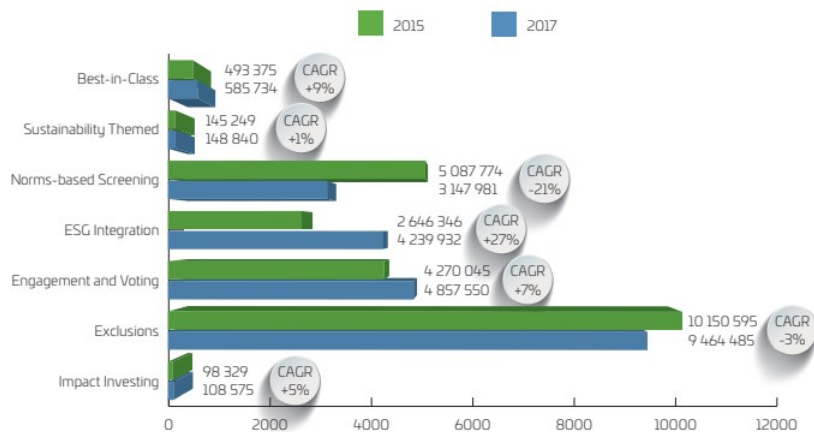


Figure 3. Overview of SRI Strategies (adapted from Eurosif, 2018)

As can be seen in the figure 3, negative screening is still most dominant strategy within the Europe when measured by assets under management. This does not come as a surprise, as like previously stated, it is considered to be the oldest screening strategy.

2.1.3 History of SRI investing

The first implications of socially responsible investing can be considered to be sources of ethical investing, dating back to ancient teaching of several religions. The Old Testament teaches that when lending money to the poor, you should not charge interest. (Renneboog et al. 2008a)

According to Renneboog et al. (2008a), Methodist church was on the forefront of ethical business, with founder John Wesley preaching about the use of money and how exploitation and “sinful” trades should be avoided. These “sinful” trades included dealing with companies that were in business of producing tobacco, alcohol and weapons, and additionally gambling. The first mutual fund that applied screening of said negative and “sinful” stocks was the Pioneer Fund, founded in 1928.

Whereas older ethical investing is more or less based on the teachings of different religions, the modern socially responsible investing is based more on the individual and the personal belief and convictions of the investor. Renneboog et al. (2008a) state, that since the 1960s, different movements like anti-war and anti-racist have had the effect on investors, that they have begun to assess the investments also from the social consequences point-of-view. This eventually led to the creation of first modern socially responsible mutual fund, the Pax World Fund, in 1971 in the US. The Pax World Fund was created in opposition of Vietnam War and militarism overall, and it avoided investing in weapons industry. Another remarkable event in 1980s was the apartheid in the South Africa, which led to mutual funds divesting from companies that had operations within South Africa.

Eventually this led to socially responsible investing gaining more and more footing with the investors. According to Eurosif’s SRI Study of 2012, the attention paid to the environmental issues increased, especially in the US, and investors followed the trend. This resulted socially responsible investing becoming more common investment strategy. The

1970s and 1980s is the time period where socially responsible investing can be seen to have moved away from the religious base.

Although it is often presented as that the modern socially responsible investing originates from the US, it is not universally agreed truth. Bengtsson (2008) states that it cannot be doubtlessly asserted that the modern socially responsible investing stems from the US. Bengtsson expresses that there is evidence presented in studies and releases, which demonstrate that during the same time period, 1960s and 1970s, there were modern funds founded with ethical perspective in different parts of the world other than the US.

2.2 Efficient Market Hypothesis

The efficient market hypothesis is one of the core theories related to finance. As the main objective of financial and capital markets is to allocate resources accordingly, the purpose of the theory is to explain how market operates or should operate. Eugene Fama stated in his study in 1970 that market efficiency boils down to asset and security pricing will reflect the information available completely and correctly. According to Brooks and Lim (2011), an efficient market is defined by its ability to swiftly and accurately reflect new information into the security and asset pricing. As a result, historical data and information should not affect the security pricing changes, only the new information provided.

Due to the pricing changes being linked with new information, the theory of random walk is often affiliated with the efficient market hypothesis. The rationale behind it is that previous pricing cannot be used to predict future changes, as if there is no regulation on the new information and the information is adapted instantly into the security and asset pricing, the pricing will follow a random walk. Burton Malkiel (2003) describes that it is integral that the pricing tomorrow is independent from today's pricing, along with the information. It is also fundamental that the new information is uncertain and unpredictable, as it results to pricing changes being also irregular and unpredictable.

The theory of the study conducted in 1970 by Eugene Fama breaks the efficient market hypothesis in three different forms. These forms are weak-form efficiency, semi-strong efficiency and strong-form efficiency. The lowest level of market efficiency is the weak-form efficiency. When weak form occurs, all the historical information is reflected upon security pricing. In the mid-level, when the efficiency is semi strong, security pricing reflects all publicly available information. This means that when information becomes public, security pricing adjusts to it quickly. Pricing also includes forecasts about future and possible developments and prospects. Strong form, the highest level of market efficiency, contains all the information included in the semi-strong form, but also adds private information. This means that in security pricing, insider-information is also reflected in addition to publicly available information.

The efficiency of markets is important to the study, as it detects how swiftly security pricing adapts to the new information when it becomes available. As this thesis uses event study approach, which can be used for examining the efficiency level of the markets. In 1991, in a study Eugene Fama argued that event study approach provides most conclusive evidence regarding the market efficiency, and that the evidence was strongest when measured on the daily level of returns.

Although the efficient market hypothesis is considered as a of the core theories in finance, it is not without its problems. Easton and Kerin (2010) noted that the financial crisis of 2008 – 2009 can be considered as an evidence against the EMH as the security valuation was incorrect prior to the crisis due to privately held information, which was not included in the pricing of the assets. Additionally, Malkiel (2003) noted that there can be irrationality found within the market participants, which can lead to mispricing of the securities.

2.3 Modern Portfolio Theory

The modern portfolio theory was developed by Harry Markowitz in 1952. It is based upon the idea of constructing the most efficient portfolio with maximized expected returns at a specified risk level. Risk reduction is done by diversifying the portfolio, constructing it with varying assets which reduces the total risk.

According to Sharpe et al. (1999), the total risk of an investment consists of two components. These components are systematic and unsystematic risk. The systematic risk represents the market risk, which cannot be eliminated through diversification as it can be considered the risk of being involved in the market. It includes events like, for example, natural disasters and wars that cannot be planned for or avoided. Unsystematic risk on the other hand, is a company specific risk, which can be reduced via diversification. Investing in different securities and assets, which are not positively correlated with each other.

Bodie et al. (2014) explain, that when an asset or security has optimal risk-return combination, it lays on an "efficient frontier". On figure 5 the minimum-variance frontier of risky assets is displayed along with the efficient frontier. The efficient frontier demonstrates risk-return combinations for an asset, that are the most efficient. In order for an investment to be considered rational, the asset's variance needs to be above the "Global minimum-variance portfolio" -point. At that point, the variance level is at its lowest point, while the return is at its highest for the level of variance.

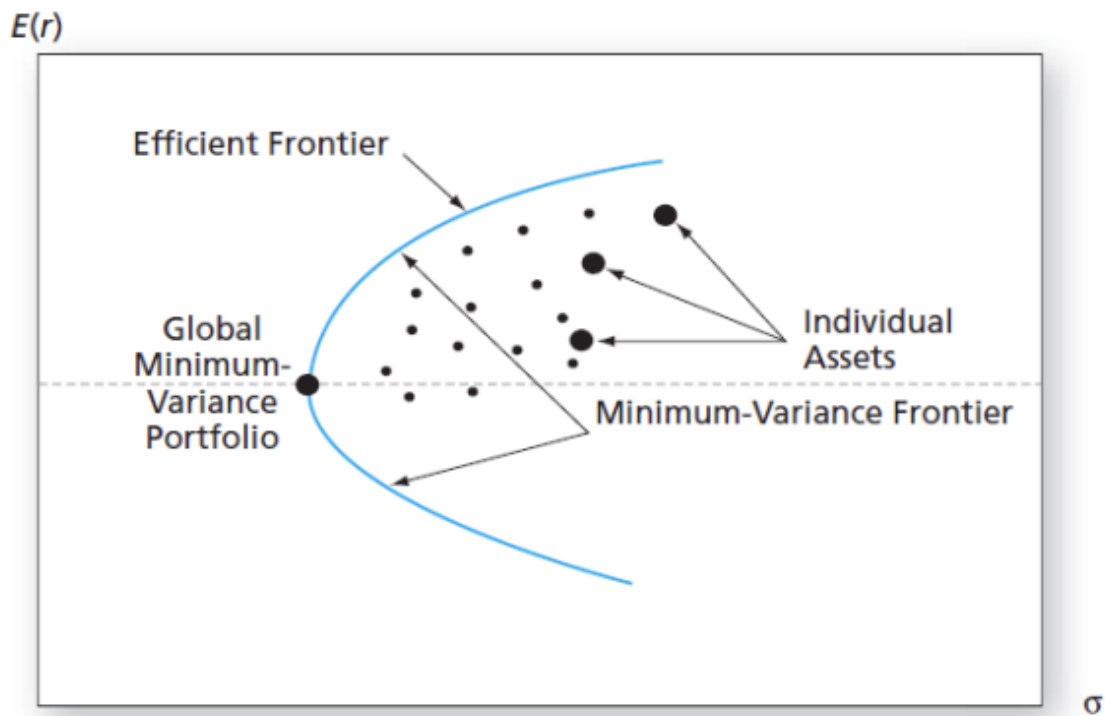


Figure 4. The minimum-variance frontier of risky assets (Bodie et al. 2014: 220).

Regarding socially responsible investing, Kurtz (2005) describes that due to the the limitations on asset and security selection set by the restrictions of socially responsible investing strategy and screening, responsible investors must settle for lower returns and risk-levels. This in concurred by the study conducted by Geczy et al. (2021), where they state that constraints set by socially responsible investing strategy lead to lower risk-adjusted returns. The lower returns are a result of diminished asset and security pool, from which the portfolio is built from, due to the constraints. Barnett and Salomon (2006) state that the possibility of a portfolio to be well-diversified decreases when socially responsible investing restraint are set, which can lead to said portfolio not being as efficient as possible and lying outside of the efficient frontier. This is coincided by Berry and Junkus (2012), who express that framework of efficient market is not being met when portfolio is built with restraints, and this causes portfolio to shift from the efficient frontier.

3 Literature review

This part of the study goes through and presents some of the previous literature and studies conducted on similar topics. As socially responsible investing is a trending topic, yet rather new, new studies are constantly being published and methods being developed. This can result to these studies and literature becoming outdated. In first chapter, we go through studies which had negative outcome in terms of performance for the socially responsible investments. The second chapter focuses on studies that found that being socially responsible had no impact on the outcome, resulting in neutral performance, and lastly in the third chapter we focus on studies that found positive results. As can be seen from the chapter division, the results vary a lot from study to study, and there is no unanimous agreement on the impact of socially responsible investing on performance.

The performance of socially responsible investing and investment funds have been widely researched in the academic community. There are vast amounts of studies conducted on the relationship between financial returns of the assets and securities and socially responsible and sustainable procedures.

Many of the studies conducted focus on the relationship and difference in performance between socially responsible investment mutual funds compared to the conventional mutual funds. Some studies also focus on the performance during different circumstances, like for example, Leite and Cortez (2015) focused on how SRI mutual funds performed in a crisis and non-crisis circumstances compared to conventional mutual funds. It is to be noted, as Kempf and Ostoff (2007) stated, that although there are differences between performances of the different mutual funds, it can be difficult to isolate the impact on the performance of the fund manager from the fund's performance in general, and how the much of an impact the asset selection criteria had instead.

3.1 Negative performance

When restraints, such as environmental, social and governance, are added to the selection criteria, in theory and logically though, this should lead to loss in returns. As restraints are set, it reduces the assets available for selection. This is supported by results provided by different studies conducted. However, some studies have provided contrary results. More on them in the next subchapters.

Renneboog et al. (2008b) found that socially responsible investment funds underperformed when compared to conventional benchmarks. The study focused on market in the United States, the United Kingdom, and few countries within Europe and Asia. The SRI funds underperformed their domestic benchmarks, loss ranging from 2,2 % to 6,5 % (Renneboog et al. 2008b.).

In a more recent study conducted in 2015, Leite and Cortez found that during non-crisis periods, socially responsible investment funds underperformed their matching counterparts significantly. During crisis periods, the performance of both, socially responsible and conventional, was equal. It is important to notice, that the underperformance was driven by negative screening. (Leite & Cortez, 2015.) Negative screening excludes certain things such as alcohol and tobacco. Funds, that used positive screening performed on similar level as their conventional counterpart.

Donath et al. (2018) conducted a study in order to analyse the difference in performance between traditional US mutual funds in comparison to SRI funds. They used Sharpe and Markowitz models to measure the performance, and the results of the study indicate that SRI funds lose to traditional mutual funds in performance. The authors do emphasize the nature of SRI strategies being long-term, and that despite results indicating worse performance than traditional funds, SRI funds are gaining increasing popularity with the investors adding them to their portfolios.

Jones et al. (2008) studied the performance of SRI mutual funds in Australian market using multi-factor models. Prior research had mostly relied on single- or at most two-factor models. The study had a lengthy time period, ranging from 1986 to 2005, and included 89 different mutual funds in Australia. The results of the study indicated that SRI mutual funds underperform in comparison to their counterparts. SRI funds underperformed significantly during the time period by a margin of 0.88 percent annually. The difference was even higher when only the most recent years, 2000 – 2005 were observed, with the margin being 1.52 percent per annum.

The performance of socially responsible investment mutual funds and traditional mutual funds in shocks were studied by Arefeen and Shimada in 2020. They conducted a study of how the SRI and conventional mutual funds reacted to the U.S. presidential election and the Brexit referendum in 2016 in Japan. The study was conducted using the event study methodology. The sensitivity of the funds to the uncertainty differed between the shocks, with SRI mutual funds being more sensitive regarding the presidential elections, were as the conventional mutual funds being more sensitive towards the Brexit referendum. The results indicated that during the uncertainty of the U.S. elections, SRI mutual funds were favoured for better returns in comparison to conventional funds, and during the Brexit referendum the conventional mutual funds outperformed the SRI mutual fund counterparts.

3.2 Neutral performance

In one of the first distinguished studies conducted on the performance of socially responsible investment mutual funds compared to the conventional mutual funds, Hamilton et al. (1993) found that there are no significant differences between them. Their study included 32 different socially responsible mutual funds, which were examined between the start of 1981 until the end of 1990. Hamilton et al. used Jensen's Alpha as a measure for the excess return. Their results indicate that socially responsible investment mutual funds do not differ from conventional mutual funds in terms of performance,

and socially responsible investment mutual funds are not able to generate statistically significant excess returns.

In 2005, Bauer, Koedijk and Otten studied 103 different ethical mutual funds between years 1990 and 2001. Origin of the funds were German, the UK and the US. Bauer et al. tested the performance using the Carhart multi-factor model in order to remove benchmark issue previous studies had encountered. By doing so, there was no significant differences found in the performance of ethical or conventional mutual funds for the sample period.

In 2006, Bauer, Otten and Rad continued studying ethical investing, this time in the Australian market. Sample period used for the study was 1992-2003 and provided mixed results. At the beginning of the sample period, during years 1992-1996, ethical funds underperformed their conventional counterparts by a significant margin. However, after that their performance was more closely matched. Bauer et al. disclosed this being a catch up -phase, as the concept was newish.

Cortez et al. (2009) found that there is no statistically significant difference in performance between socially responsible mutual fund and conventional mutual funds. Cortez et al. used time-varying extended conditional model in their study. The results implicated that investors will not have to sacrifice performance while screening investment for social criteria.

The results are in line with a study of Lobe and Walkshäusl (2014), where they measured the performance of investing strategies, with those strategies being socially responsible and what is considered to be unethical investing. Lobe and Walkshäusl created a “sin-index” which was constructed of 755 stocks in 51 countries, and the stocks were related to industries such as alcohol, gambling, adult entertainment, weapons and tobacco. The sin-index was then compared against 32 different renowned SRI indices and the MSCI World Index was selected to represent the conventional indices. Their results indicated

no significant difference in either performance or risk-adjusted returns. Based on their results, they determined that as there is no significant difference in performance, investors can choose to invest in a responsible and sustainable way without being punished.

Also, according to previously discussed study conducted by Leite and Cortez (2015), where socially responsible investment funds' underperformance was driven by negative screening, another study conducted by Humphrey and Tan (2014) found no difference in performance between neither positive or negative screening and unscreened portfolios when performance was assessed by either risk or return. According to the study, there investors will not gain or lose performance when choosing socially responsible investment fund (Humphrey & Tan, 2014.). Additionally, Berry and Junkus (2012) explained that there are no differences between returns whether different screening techniques are applied into the asset selection or not.

Halbritter and Dorfleitner conducted a study in 2015, where they noted that the performance and return of the investment portfolio does not differ substantially whether the portfolio has been built with the inclusion of CSR elements or not. They also noted that the possible benefits of socially responsible investing in terms of returns on investments diminish in the long term. The results are in line with the study conducted by Revell and Viviani in 2015, where they stated that the addition of social responsibility does not pay off for the investors in a significant way but does not create additional costs to the investor either.

3.3 Positive performance

In 2014, Nofsinger and Varma conducted a study investigating the performance of socially responsible investing mutual funds in the United States and their conventional counterparts. The study accounted for year between 2000 and 2011, and included both crisis and non-crisis periods. The study accounted for 240 US domestic equity SRI mutual funds. According to the study, the SRI funds outperformed their counterparts during

market crisis by 1,61-1,70 percent on annual level (Nofsinger & Varma, 2014.). This in line with the results provided by study conducted by Hill et al. in 2007. Hill et al. examined the performance between socially responsible mutual funds and stock markets' returns in Asia, Europe and the United States. Their study yielded results that socially responsible mutual funds outperformed markets when the time period was long term (Hill et al. 2007.). Nofsinger and Varma (2014) do note that even though SRI funds do outperform the conventional mutual funds during crisis periods, during non-crisis period the conventional mutual funds perform better than SRI funds by a margin ranging from 0.67% to 0.95%.

Along with the results of the previously mentioned studies, Statman and Glushkov (2009) reached similar conclusion on their study. Statman and Glushkov studied portfolios comprised of stocks fitting the social criteria compared their counterparts between the years 1992 and 2007. Additionally, in the study that Statman conducted in 2006, it is stated that SRI indices create better return for investors when compared to traditional S&P 500 index. The study included four SRI indexes, which were compared to S&P 500. Statman also noted that there is a high correlation between the benchmark S&P 500 index and the four SRI indexes in question.

Morgan Stanley conducted a study of their own in 2015. The purpose of the study was to understand the significance of sustainability in the performance of the mutual funds. The study included both managed and open-ended mutual funds, with managed funds being represented by 2,874 different funds, and open-ended by 10,228 funds. The study also included indices, with MSCI KLD 400 Social Index representing companies that score high on ESG criteria, and S&P 500 as a benchmark for US stock market in more extensive way. The results of the study indicate that funds focused on sustainability are able to produce better returns on average, or at least be on the same level as traditional funds. The MSCI KLD 400 Social Index has also outperformed S&P 500 by 45 basis points. However, it must be noted that in another publication by Morgan Stanley, in 2019, no differences were found between sustainable mutual funds in comparison to the traditional

ones. The main difference between the studies were the time period they were conducted for. In the latter study, 2019, Morgan Stanley do note that even though returns might not differ, sustainable funds may be able to provide lower risk than traditional funds for the same return.

Copp, Kremmer and Roca (2010) conducted a study on performance during economic downturns. Their study focused on the Australian market and worldwide in general. Copp et al. analysed how socially responsible investments measured against conventional investments in terms of risk-adjusted returns. The study included two socially responsible investment indices and two indices represented conventional investments. The results of their study indicate that during economic downturns, the returns, both of socially responsible investments and conventional investments, diminish, but the impact is lower on the socially responsible investments. They do also note, that according to their research, conventional investments appear to be less riskier than their socially responsible counterparts during economic downturns.

Lucy Beverley (2008) defines event study analysis as a part of econometrics that pursues to measure how different economic events and shocks affect the valuation of asset pricing and companies by analysing stock market data. Craig MacKinlay (1997) stated that event studies have multiple applications. In the field of finance, event study is often used to study the effects of market wide and firm specific events. Firm specific events can include cases like earnings announcements, mergers and acquisitions and issuance of new debt or equity. On market wide level, the events can include shocks like the Brexit, or an announcement of trade deficit on macroeconomic level.

The methodology that is typically used in event studies even this day originates from the studies conducted by Ball and Brown in 1968, and by Fama, Fisher, Jensen and Roll in 1969. In the study, Fama et al. (1969) investigated the effect of stock-splits whilst the dividend increases happening the same time had been controlled. Ball and Brown (1968) focused on the effect and the information content provided in the earnings

announcements. Event studies in general have even longer history, and what is considered as the first published study goes back to 1933, in where James Dolley analysed the effect of stock splits in pricing.

In more recent studies, event study methodology has been used to assess the impact of the COVID-19 pandemic on stock markets. He et al. (2020) analysed the impact on Chinese stock markets. They found that it had different effect. The Shanghai Stock Exchange received a negative impact, where as Shenzhen Stock Exchange benefitted from the event and had a positive impact. He et al. stated that the results indicate that the traditional industries did not do well because of the pandemic, but high-tech industries benefitted from it.

Gavalas, Syriopoulos and Tsatsaronis (2022) studied the impact of the COVID-19 on a specific industry. Authors used the market-model approach to determine the effect of the pandemic on shipping industry. The results of the study were mixed, as in one event window, the industry seemed to be pandemic-proof, but later windows indicated otherwise. Gavalas et al. do note that as the pandemic is still going on, further research is required on the topic.

4 Brexit

One of the biggest events in the history of the European Union was when the citizens of the United Kingdom voted to withdraw from the union on June 23rd, 2016, making the United Kingdom the only member state ever to have done so (Sampson, 2017). The withdrawal was quickly named British exit, Brexit.

4.1 History of Brexit

After the European Coal and Steel Community was established in the 1940s (European Union, 2021), the United Kingdom formally joined the European Communities on January 1st, 1973. The United Kingdom remained a member state for almost 50 years, and officially departed from the European Union on January 31st, 2020.

Although the United Kingdom was not a founding member, it had a major role within the European Union as a leading member. According to Menon and Salter (2016), the United Kingdom did not integrate optimally into the Union, withdrawing from some key elements of integration such as declining to join the Schengen area and refusal of the Euro-currency. Despite of this, the United Kingdom was an integral part of development of some of the key features within the European Union today, like the EU Regional Policy. There have been two referendums held in the United Kingdom regarding the membership of the European Union. The first one was held only two years after joining the European Economic Community in 1975. The second one was held in 2016, which led to the withdrawal of the United Kingdom from the European Union, by 51.89 % of voters voting for Leave.

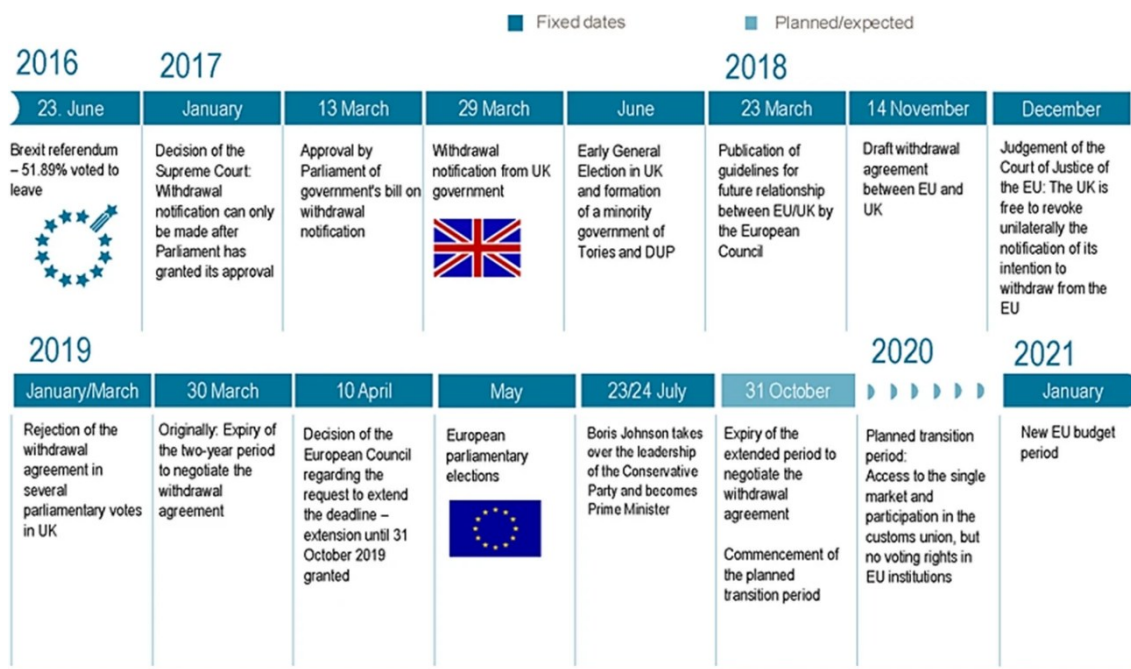


Figure 5. Brexit Timeline (Adapted from Stoupos and Kiohos, 2021)

There are several reasons behind what drove the United Kingdom to leave the European Union and pinpointing a single most important driving factor is impossible. According to Chan et al. (2020) one of the main factors was “being left behind”, as in most of the citizens voting for leaving the EU were people located in the economic areas that did not benefit as much from globalization and European integration. Colantone and Stanig (2018) characterized these areas as for having higher unemployment rates, lower wage growth and increase in both poverty and inequality. Diane Coyle (2016) described Brexit “as a vote against globalization and its uneven impact on different parts of the country.” This led to dissatisfaction of the voters and therefore increased Euroscepticism resulting in the withdrawal from the European Union.

Second viewpoint behind Brexit was that it is not related to economics at all. According to Chan et al. (2020), another motivator for leave-voters was rather national identity than economic effects of the European Union. They argue that defining national identity is difficult and complex due to how the United Kingdom is constructed of four nations and because of tight integration to Europe. Krishan Kumar (2010) argues that as Scots

and Welshmen are keen on having Scottish and Welsh identities, the English are satisfied calling themselves either English or British.

4.2 Financial impact of Brexit

The financial impact of Britain's exit from the European Union are yet to unfold. The discussion related to the impact revolves around whether the exit will either be "soft" or hard". Simon Hix (2018) defines the soft form of the exit as that the United Kingdom remains in the European Economic Area (EEA) and agrees to act under its agreements. The hard exit on the other hand is that the United Kingdom abandons the European Union's single market and signs its own free trade agreements. The third option is that there is no deal found, and the United Kingdom trades with the European Union as a member of World Trade Organization (WTO).

As Brexit is still such a novel event, the full effects and impact of it will be seen in the future. However, there have already been studies conducted on the topic. Razinskaite and Srovnalikova (2017) claim that the exit will have an impact on the direct foreign investments. In a study Dhingra et al. (2017) estimate that Brexit affects the average income per capita negatively. They estimate that if the soft exit happens, the effect of it will be 6.3 %, and with hard exit the effect will be around 9.4 %. This is partly due to decline in foreign direct investments. Kiohos and Stoupos (2021) indicate that the possible decrease in foreign direct investments will ultimately also affect the nominal exchange rate of the British Pound.

The capital flows to the United Kingdom have been studied in abundance, and there is a high degree of consensus regarding it. The consensus is that the United Kingdom has benefited in terms of capital inflow for joining the European Union in the 1970s. Barry Eichengreen (2019) cites several studies related to the topic, which conclude that members of the European Union receive 28 % more foreign direct investments than other OECD countries, and the membership also increases the foreign direct investments from

other membership countries by 28 % and 15 % from other countries. According to the study conducted by Kalemi-Ozcan et al. (2010), capital flows, when banks act as intermediaries, are twice the size in amount when both countries are part of the European Union. They expect that as Brexit occurs, both the inflow and outflow will be cut by half between member states of the European Union and the United Kingdom.

According to Kiohos and Stoupos (2021), as the decrease in foreign direct investments will affect the real incomes in negative matter, it will ultimately lead to depreciation of the British currency in the international foreign exchange markets. As the GBP potentially depreciates due to Brexit, it may have positive effect from the European Union point-of-view. As the British currency depreciates, it may reduce Euroscepticism within the Union and increase cohesion among member states. The estimates of Kiohos and Stoupos are in line with Barry Eichengreen's (2019), as Eichengreen states that if Britain's economic growth is diminished due to Brexit, it will lead to reduced role of the GBP as an international currency. However, the extent of the diminishing will remain to be seen.

According to Thomas Sampson (2017), there are arguments also in favour of Brexit. Brexit allows the United Kingdom to forge its own trade agreements, and not to have to compromise with other member state's needs. Sampson does state, that this does not come without its downside, as the United Kingdom will have diminished bargaining power as a stand-alone actor.

Overall, there is an agreed consensus amongst the researchers and literature that Brexit will make the United Kingdom poorer in the long run. Studies conducted by Sampson (2017), Eichengreen (2019) and Kiohos and Stoupos (2021) all imply said results. However, as the Brexit is a political event with different variables, an uncertainty must be noted and only time will tell the full impact the Brexit has on the United Kingdom's economy.

5 Data and methodology

5.1 Data

The data used in the study consists of 13 Socially Responsible Investment mutual funds. As for benchmark indices, FTSE 100 is selected as it is well-known index for Britain's stock market, London Stock Exchange. To account the impact across the Europe, Stoxx Europe 600 Index is used for benchmark as well. The time period from which the data is collected is from 01.01.2010 – 01.06.2021 for both the mutual funds and the benchmark indices in order to have as comprehensive estimation period as possible.

Figures 6 and 7 display the overall development of the FTSE 100 and the Stoxx Europe 600 Index for the time period. Both indices have quite similar development during the time period as can be expected with both being European stock market indices. The development is in line with the three major global market events, first one being the dot-com bubble in the early 2000s, second one being the financial crisis of 2008 – 2009 and the most recent COVID-19 pandemic in the 2020.



Figure 6. Stoxx Europe 600 Index (adapted from Stoxx, 2022)



Figure 7. FTSE 100 Index (adapted from London Stock Exchange, 2022)

As the thesis focuses on the Brexit, three key dates are selected for which an event window is adopted. The key dates in question are the day the referendum was held, June 23rd, 2016, 31st of January 2020 when Britain officially withdrew from the European Union and 31st of December 2020 when the transition period ended. An event window of ten days prior to ten days after the event [-10,10] is used in the study.

When socially responsible investment mutual funds are being examined, it is important to clearly define which funds are accepted into the study. As there still is no global consensus on the measurements regarding SRI factors, this thesis will adapt the fund rating provided by MSCI because MSCI is known for being in the forefront of ESG matters and research. The rating measure used is the MSCI ESG Fund Rating.

The MSCI ESG Fund Ratings is used as a measurement of the underlying assets held in the fund, estimating the characteristics regarding Environmental, Social and Governance (ESG) factors. MSCI ESG Fund Ratings presents insights for over 32,000 mutual funds. In order to be included in the ESG Fund Rating, there are three criteria that the fund must pass. First criteria is that 65 % of the fund's gross weight must come from covered securities. Secondly, the holdings date of the fund has to be under one year old and the third one being that the asset pool must include at least ten securities (MSCI, 2021).

The MSCI ESG Fund Ratings divides the ratings in seven different categories with the best rating available being AAA and the worst one being CCC. Funds rated AAA and AA are

considered to be “leaders”, funds with a rating of A to BB are considered “average” and funds rated B and CCC are thought to be “laggard”. Each rating letter corresponds to a Fund ESG Quality Score. The requirement score for each rating is shown in figure 8 (MSCI, 2021).

Fund ESG Quality Score	Fund ESG Rating
8.6* - 10.0	AAA
7.1 - 8.6	AA
5.7 - 7.1	A
4.3 - 5.7	BBB
2.9 - 4.3	BB
1.4 - 2.9	B
0.0 - 1.4	CCC

Figure 8. Fund ESG Quality Score (adapted from MSCI, 2022)

Fund ESG Quality Score ranges from zero being lowest and ten being highest possible score. There is some overlapping in the scores, which is caused by rounding. The Fund ESG Quality Score is calculated in three steps. First the funds average weighted ESG score is calculated using the normalized weights of the underlying assets of the fund and their ESG scores. Second step is to calculate the Adjustment percent, which is done using three different factors. Those factors are Fund ESG Trend Positive (%), Fund ESG Laggards (%) and Fund ESG Trend Negative (%). The ESG Quality Score is a result of multiplying the funds average weighted ESG score with Adjustment percent added to one ($1 + \text{Adjustment } \%$). The Fund ESG Quality Score can also be adapted into “Fund ESG Quality score – Peer Percentile”, which compares the funds score against its peers and displays the percentage wise how many of its peers have either higher or lower score than the fund itself (MSCI, 2021)

5.2 Methodology

5.2.1 Event study methodology

Campbell, Lo and MacKinley (1997) defined how an event study is usually constructed. It comprises of seven different stages: event definition, selection criteria, normal and abnormal returns, estimation procedure, testing procedure, presentation of empirical results and interpretation and conclusions.

The first stage is the event definition. The primary task in order to conduct an event study is to determine the event of interest and for which time period the study will be conducted upon. Establishing the time period for which the asset prices will be analysed is critical, as the selection of time period has crucial impact on the results of the study. The time period is called an “event window”. The event window is often from two to three days, starting from the day prior the event and ending day after the event. This is to account for both possible lag and lead effects of the event. If the market was perfectly efficient, such days to account for lag and lead would not be needed, as the pricing would perfectly reflect the information available, and the new information would be quickly adapted on to the pricing of the assets. However, as the markets are never perfectly efficient, event windows are needed to provide more accurate results. It is common for the event window to be even longer, and it can differ a lot between different studies, and also different event windows can be used within one study. For example, Beverley (2008) lists several studies that use different event windows. In the list, Eckbo and Wier (1989) used both 20 days prior the event to ten days after as well as one day prior to one day after. Cox and Portes (1998) used five days prior to five days after $[-5,5]$, $[-2,2]$ and $[-1,1]$ event windows in a single study. Using longer event window may provide more accurate results, but it does open up the possibility of another event interfering with the returns, so the event window needs to be chosen carefully in order to avoid contaminating events.

Second stage of the study is to identify which assets are included by determining the selection criteria. An integral factor for any event study is that pricing data is available for the asset under investigation, and that it is traded and valued often. If the asset is rarely traded, the impact of the event might not be fully reflected upon its pricing, and thus the results of the study may become questionable and unreliable. If an asset does not fit in to the selection criteria, it should be excluded from the study in order to produce as accurate and statistically significant results as possible.

Determining the normal and abnormal returns is the third stage of the study. In order to fully understand and analyse the impact of an event on returns, a baseline of normal returns needs to be determined. The normal returns reflect the pricing under regular circumstances, as if the event did not happen. As it is usual to consider that asset returns are jointly multivariate normal and distributed through time independently and identically, the normal return can be assessed with statistical models. This study uses two different models for the estimation: the Constant Mean-return model and Markel model. The models including the model for abnormal returns will be discussed and examined in the further subchapters.

The fourth stage is the estimation procedure. After the model for the normal returns is chosen, the data used in the study provides the parameters needed for the model. The subset of data is often called the "estimation window". There is no widely accepted hard rule for the length of the estimation window. Campbell, Lo and MacKinley (1997) propose using an estimation window of 120 days. Beverley (2008) notes that although there aren't any general limitations regarding the estimation window, the event itself should be left out as it might interfere with the parameters needed with the normal returns models, and lead to inaccurate results. Additionally, any non-trading days should be excluded from the estimation window in order to avoid skewed results.

A structure for testing the possible abnormal returns needs to be determined. This is done on the fifth stage, testing procedures. Additionally, the structure includes approach

for aggregating the results over time. This study uses Cumulative Abnormal Returns model, as it sums the abnormal returns for each day of the event window. The model itself will be discussed more on coming subchapter. The Cumulative Abnormal Returns can also be used to test out the null hypothesis. If the event has no impact on returns, the cumulative abnormal returns will equal to zero. However, if any abnormal returns are found, the null hypothesis can be rejected.

The sixth and seventh stages are related to results of the study and the conclusions regarding them. The presentation and discussion of the results will be done in the fifth chapter of the study. The interpretation and conclusion about the possible results will conclude the study in general and will be presented in the sixth chapter of the study.

5.2.2 Abnormal returns

Abnormal returns are used to analyse and measure the impact of the event on the returns of the assets. The normal return represents the assets return if the event did not take place. The abnormal return is calculated with the following formula for each asset at the time i

$$AR_{it} = R_{it} - E(R_{it}) \quad (1)$$

where,

R_{it} represents the actual return of the asset i at the time period t ,

$E(R_{it})$ represents the expected return of the asset i at the time period t .

5.2.3 Constant Mean-Return model

The Constant Mean-Return model presumes that mean of the asset's return over the event window is predicted to be the same as the mean over the entire estimation period.

The following model is used to calculate the abnormal return

$$AR_{it} = R_{it} - \mu_i \quad (2)$$

where,

R_{it} represents the return of the asset i at the time period t ,

μ_i is the mean return of the asset i over the period.

5.2.4 Market model

The Market model assumes there is a stable linear relationship between the return on the asset and market return, whereas Constant-Mean Return model assumes it to be steady during the whole estimation period. The market model can be superior as it can detect and remove the fraction of returns that are related to movement of the market, which eventually leads to diminished variance on abnormal returns. The market model is considered to be as efficient as more advanced models and methods are. The following model is used for calculating the return of the asset

$$R_{it} = \alpha_i + \beta_{im}R_{mt} + \varepsilon_{it} \quad (3)$$

In the model, R_{it} represents the return of the asset i at the time period t and, R_{mt} represents the return of market portfolio m at the time period t , α_i is the intercept term and β_{im} is the OLS regression coefficient between asset and the market portfolio. Error-term is represented by ε_{it} and has mean of zero.

After the returns have been calculated, the abnormal returns can be calculated with the following model

$$AR_{it} = R_{it} - \alpha_i - \beta_{im}R_{mt} \quad (4)$$

where,

R_{it} represents the return of the asset i at the time period t ,

R_{mt} represents the return of market portfolio m at the time period t ,

α and β are the parameters from the market model.

5.2.5 Cumulative Abnormal returns

The total abnormal returns during the event window are measured using the cumulative abnormal returns (CAR). It is calculated by summing all the abnormal returns during the event window. Cumulative abnormal returns are calculated with the following model

$$CAR_t = \sum_{t=t_1}^{t_2} AR_t \quad (5)$$

where,

CAR_t is the sum of abnormal returns in time period $t_1 - t_2$

AR_t is the abnormal return at the time t ,

t stands for the number of abnormal returns.

6 Empirical results

The empirical analysis will be divided into four different sections. First section will take a look at the performance during the estimation period. From the estimation period the expected return can be calculated for the funds and the benchmarks. Then the study will proceed on to each key event dates. These events are the The Referendum, which took place on June 23, 2016, The Withdrawal, which took place on January 31, 2020 and The end of Transition period, which took place on December 31, 2020.

6.1 Estimation period

Estimation period is 20 months and looks at the average return of the assets. Estimation period takes place ten months prior to when the event occurs. From the estimation period the expected average return can be assessed. With the expected return, the impact of the events can be studied upon and assessed, whether the event had an positive or negative effect regarding the return for the asset.

The estimation period for the Referendum starts on January, 2014 and ends on August, 2015. During the estimation period, the funds in general had highest expected return on average at 0,586%, with first benchmark, the STOXX 600, following close behind at 0,500%. The second benchmark FTSE 100 lagged behind, coming in at -0,386%.

For the second event, the Withdrawal, the estimation period starts on August, 2017 and ends on March, 2019. The results differed from the results of the first event, as the first benchmark STOXX 600 had the highest expected return of 0,016%. The FTSE 100 saw a negative expected return of -0,063% and the funds had an expected return of 0,007%.

The last event, the end of transition period, had similar outcome as the second event, in terms of which asset had the highest and lowest expected return. The SRI funds came in

second with 0,336% as the expected return, STOXX 600 being the highest with 0,348% and FTSE 100 having lowest expected return with -0,262%. The last estimation period began on June, 2018 and ended on January, 2020.

6.2 The Referendum

The referendum took place on June 23, 2016. The event window is ten business days prior to ten business days after [-10,10].

Table 1. The results for the first event window, The Referendum.

	Expected return (%)	Average abnormal return (%)	CAR (%)
SRI Funds	0,586	-0,632	-12,644
Benchmark 1 (STOXX 600).	0,5	-0,672	-13,431
Benchmark 2 (FTSE 100).	-0,386	0,354	7,087

The outcome of the referendum had clearly an impact upon the returns. Both the SRI funds and first benchmark, STOXX 600, were negatively affected by the results of the referendum. Funds were expected to have a return of 0,586% but ended up having abnormal return of -0,632% on average. The cumulative abnormal return for the event window was -12,644%.

Both benchmarks were affected by the results. However, in completely different way. Where as STOXX 600 had a negative impact, the FTSE 100 had a positive impact. The expected return for STOXX 600 was 0,500% but ended up having a negative abnormal

return of -0,672% on average, which cumulated to -13,431% for the event window. Second benchmark, FTSE 100, had negative expectations coming into the referendum, with the expected return being -0,386%. The results during the event window ended up being positive, as the abnormal return was 0,354% on average and cumulative abnormal return being 7,087%. It can be considered, that as the FTSE 100 is an UK-based stock market index, it had already accounted for the possible outcome of the referendum into asset pricing, meaning that the general negative impact that the SRI funds and STOXX 600 suffered was already included in the expected returns.

6.3 The Withdrawal

The Withdrawal took place on January 31, 2020. The event window is ten business days prior to ten business days after [-10,10].

Table 2. The results for the second event window, The Withdrawal.

	Expected return (%)	Average abnormal return (%)	CAR (%)
SRI Funds	0,007	0,166	3,178
Benchmark 1 (STOXX 600).	0,016	0,266	4,513
Benchmark 2 (FTSE 100).	-0,063	0,176	3,52

The expected returns for all three, the SRI funds and the benchmarks, were quite close. The first benchmark STOXX 600 came up top, with the expected return of 0,016% and SRI funds following close by with the return of 0,007%. Second benchmark, FTSE 100, was the only one of three that had a negative expected return of -0,063%.

Abnormal return exceeded the expected return for each of the three. SRI funds had the lowest abnormal return of 0,166%. The cumulative abnormal return for the SRI funds was 3,178%. This mean that during the event window, the funds outperformed the expected return. However, as the expected return was significantly lower than during the other key events, it can be considered that the expectations were quite moderate.

For the benchmarks, both exceeded the expected return. FTSE 100 had a negative expected return, but managed to produce a positive return as the abnormal return was 0,176%. STOXX 600 on the other hand had the highest expected return but achieved even higher returns, coming up with the highest abnormal return rate as well. The abnormal return for the STOXX 600 was 0,266% and the cumulative abnormal return was 4,513%. For FTSE 100, the cumulative abnormal return was 3,520%.

6.4 The end of Transition period

The end of Transition period was on December 31, 2020. The event window is ten business days prior to ten business days after [-10,10].

Table 3. The results for the third event window, The end of Transition period.

	Expected return (%)	Average abnormal return (%)	CAR (%)
SRI Funds	0,336	-0,205	-4,095
Benchmark 1 (STOXX 600).	0,348	-0,189	-3,771
Benchmark 2 (FTSE 100).	-0,262	0,52	10,393

Similar to the first key event, the referendum, the third key event sees that the SRI funds and STOXX 600 have positive expected return, where as FTSE 100 has a negative outlook. SRI funds have expected return of 0,336%, trailing a bit behind of the first benchmark, STOXX 600 with the expected return of 0,348%. Second benchmark, FTSE 100, has a negative expected return rate of -0,262% which can be interpreted to be cautious look on the upcoming key event.

The abnormal returns continue the similarities to the first key event, with the exception of SRI funds and STOXX 600 trading places. Whereas in the first key event STOXX 600 had the worst impact and lowest abnormal return, this time the SRI funds took the bigger loss and ends up having the lowest abnormal return by a small margin. The abnormal return for SRI funds is -0,205% and for STOXX 600 -0,189%.

Second benchmark, FTSE 100, on the other hand exceeds the expect returns by a significant margin, like it did in first key event window as well. Coming into the event window with the negative expected return and having average abnormal return of 0,52% indicate that impact of the event has possibly been overestimated in the valuation prior to the event. The cumulative abnormal return for the FTSE 100 end up positive, with the value of 10,393%. Both SRI funds and STOXX 600 end up with a negative cumulative abnormal return, SRI funds having value of -4,095% and STOXX 600 -3,771%.

7 Conclusions

There have previously been studies conducted upon the performance of socially responsible investment funds, and how they fare against conventional mutual funds. For example, the study conducted by Areal, Cortez and Silva (2009) showed that there were no statistically significant differences between the performance in them. In this study, the socially responsible investment mutual funds and their performance have been compared to how indices fared during the same time period. The funds selected for the study are considered as “leaders” on the MSCI Fund ESG rating system, meaning that they’ve been rated as AA or AAA.

As the study focuses on the events of Brexit, the withdrawal of the United Kingdom from the European Union, the indices selected represent the effect on the European and British stock markets. The first benchmark selected is STOXX 600 index, which represents the European stock market. The second benchmark is the FTSE 100, well known index that represents the United Kingdom’s stock market.

The purpose of this study is to find out whether the events of Brexit had impact on the performance of socially responsible investment mutual funds. Null hypothesis of the study is that Brexit does not have an impact on the returns of socially responsible investment mutual funds. However, the results of the study are contradictive towards the hypothesis. During the first event, The Referendum, the expected return of the socially responsible funds is much higher, and more importantly positive, than the abnormal return for the period which ends up being negative. For the second event, The Withdrawal, socially responsible investment mutual funds outperform the expected return with positive abnormal return. On the third event, the end of transition period, similarly to the first event, the abnormal return is lower than the expected return, contradicting the hypothesis. As the results are contradictive between the different event windows, it can not be stated with certainty whether the hypothesis can be considered to be accurate or inaccurate.

The first hypothesis stated in the study is that the Socially responsible investment mutual funds outperform conventional benchmark indices in terms of abnormal return during Brexit. Considering the results of the study, this hypothesis ends up being inaccurate as socially responsible investment mutual funds do not outperform both benchmark indices on any of the event windows. However, during the first event window, the referendum, the first benchmark index STOXX 600 falls behind the mutual funds in terms of abnormal returns. On second and third event windows, socially responsible investment mutual funds have the lowest abnormal returns on average. It can be argued, that as the differences on the returns in some windows are minimal, it can not be definitely stated that the difference on returns is clearly caused by the event in question and not by, for example, standard deviation of the returns.

The results indicate that the mutual funds were unable to outperform both benchmark indices on any of the event windows. On the first event window, the socially responsible investment mutual funds do outperform the first benchmark STOXX 600 in terms of abnormal returns and have slightly better cumulative abnormal returns as well but fall behind on second and third event windows. In general, it can be stated that the hypothesis is inaccurate, but again the differences remain marginal.

Based on the results, it can be concluded that the first and third event windows had larger impacts on the returns of the different assets and shocked the stock markets. Especially the outcome of the referendum was not expected in general. However, the second benchmark FTSE 100, which reflects the United Kingdoms stock market, had clearly more negative expectations in general as the expected return for it was only one of the assets that was negative. Possibly due to "fearing the worst", it managed to outperform the mutual funds on every event window and the other benchmark index on two of the three occasions in terms of abnormal returns. The second event, the withdrawal, was anticipated and had moderate expectations. All three assets outperformed their expected returns and had positive abnormal returns.

In general, socially responsible investment mutual funds are closely matched with the first benchmark index, STOXX 600, in terms of expected and abnormal returns on average. The second benchmark FTSE 100 differs from other assets, and it can be hypothesized that British financial markets had different and more negative expectations of the impact of the events, which lead to more positive impact on the abnormal returns. It must noted also, that as the CoVid-19 caused a worldwide pandemic at beginning of 2020, the impact on the results of the pandemic can not be distinguished and separated from the later event windows. However, as the results are so close, the investor can in good conscience choose invest on socially responsible assets without big loss on returns.

References

- Alabrese, E., Becker, S. O., Fetzer, T. & Novy, D. (2019). Who voted for Brexit? Individual and regional data combined. *European Journal of Political Economy*, 56, 132-150. <https://doi.org/10.1016/j.ejpoleco.2018.08.002>
- Areal, N., Cortez, M. & Silva, F. (2009). The Performance of European Socially Responsible Funds. *Journal of Business Ethics*, 87(4), 573-588. <http://dx.doi.org.proxy.uwasa.fi/10.1007/s10551-008-9959-x>
- Arefeen, S. & Shimada, K. (2020). Performance and resilience of socially responsible investing (SRI) and conventional funds during different shocks in 2016: Evidence from Japan. *Sustainability (Basel, Switzerland)*, 12(2), 540. <https://doi.org/10.3390/su12020540>
- Baker, H. K. and J. R. Nofsinger (2012). Socially Responsible Finance and Investing: Financial Institutions, Corporations, Investors, and Activists
- Ball, R. & Brown, P. (1968). An Empirical Evaluation of Accounting Income Numbers. *Journal of accounting research*, 6(2), 159-178. <https://doi.org/10.2307/2490232>
- Barnett, M. L. & Salomon, R. M. (2006). Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance. *Strategic management journal*, 27(11), 1101-1122. <https://doi.org/10.1002/smj.557>
- Bauer, R., Derwall, J. & Otten, R. The Ethical Mutual Fund Performance Debate: New Evidence from Canada. *J Bus Ethics* 70, 111–124 (2007). <https://doi.org/10.1007/s10551-006-9099-0>
- Bauer, R., Koedijk, K. & Otten, R. (2005). International evidence on ethical mutual fund performance and investment style. *Journal of Banking & Finance*, 29(7), 1751-1767. <https://doi.org/10.1016/j.jbankfin.2004.06.035>
- Bauer, R., Otten, R. & Rad, A. (2006). Ethical investing in Australia: Is there a financial penalty? *Pacific Basin Finance Journal*, 14(1), 33-48. <https://doi.org/10.1016/j.pacfin.2004.12.004>

- Berry, T. C. & Junkus, J. C. (2013). Socially Responsible Investing: An Investor Perspective. *Journal of business ethics*, 112(4), 707-720. <https://doi.org/10.1007/s10551-012-1567-0>
- Beverley, L. (2008). *Stock Market Event Studies and Competition Commission Inquiries*. Retrieved March 3, 2022 from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1114114
- Bodie, Z., Kane, A. & Marcus, A. J. (2014). *Investments* (10th global ed.). McGraw Hill Education.
- Campbell, J. Y., Lo, A. W. & MacKinlay, A. C. (1997). *The econometrics of financial markets*. Princeton University Press.
- Chiappini, H. & Vento, G. A. (2018). Social Responsible Investments and their Anticyclical Attitude during Financial Turmoil Evidence from the Brexit shock. *Journal of applied finance and banking*, 8(1), 53-69.
- Copp, R., Kremmer, M. L. & Roca, E. (2010). Should funds invest in socially responsible investments during downturns? *Accounting research journal*, 23(3), 254-266. <https://doi.org/10.1108/10309611011092583>
- Coyle, D. (2016). Brexit and globalisation. In R. E. Baldwin (Ed.), *Brexit Beckons: Thinking ahead by leading economists*, chapter 1 (pp. 23–28). CEPR Press. https://voxeu.org/system/files/epublication/Brexit_Beckons_VoxEU.pdf
- Dhingra, S., Huang, H., Ottaviano, G., Paulo Pessoa, J., Sampson, T. & Van Reenen, J. (2017). The costs and benefits of leaving the EU: Trade effects. *Economic policy*, 32(92), 651-705. <https://doi.org/10.1093/epolic/eix015>
- Dimson, E., Karakaş, O. & Li, X. (2015). Active Ownership. *The Review of financial studies*, 28(12), 3225-3268. <https://doi.org/10.1093/rfs/hhv044>
- DOLLEY, J. C. (1933). Characteristics and Procedure of Common-stock Split-ups. *Harvard business review*, 11(3), 316.
- Donath, L. E., Ioan, R. & Mandimutsira, T. (2018). Evaluating the performance of socially responsible investment funds. *Scientific Annals of Economics and Business*, 65(2), 139-158. <https://doi.org/10.2478/saeb-2018-0008>

- Easton, S. & Kerin, P. (2010). Market Efficiency and the Global Financial Crisis. *Australian economic review*, 43(4), 464-468. <https://doi.org/10.1111/j.1467-8462.2010.00610.x>
- Eichengreen, B. (2019). The international financial implications of Brexit. *International economics and economic policy*, 16(1), 37-50. <https://doi.org/10.1007/s10368-018-0422-x>
- Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *Journal of Finance*, 25(2), 383-417.
- FAMA, E. F. (1991). Efficient Capital Markets: II. *The Journal of finance (New York)*, 46(5), 1575-1617. <https://doi.org/10.1111/j.1540-6261.1991.tb04636.x>
- FAMA, E. F., FISHER, L., JENSEN, M. C. & ROLL, R. (1969). The Adjustment of Stock Prices to New Information. *International economic review (Philadelphia)*, 10(1), 1-21.
- Filbeck, A., Filbeck, G., & Zhao, X. (2019). Performance assessment of firms following sustainability ESG principles. *Journal of Investing*, 28(2), 7-20. [doi:http://dx.doi.org/10.3905/joi.2019.28.2.007](http://dx.doi.org/10.3905/joi.2019.28.2.007)
- Financial Times. (2025). *BlackRock Global Funds - European Fund A2*. Retrieved February 2, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0011846440:EUR>
- Financial Times. (2025). *BlackRock Global Funds - US Basic Value Fund A2*. Retrieved February 2, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0072461881:USD>
- Financial Times. (2025). *JPMorgan Investment Funds - Europe Select Equity Fund A (acc) - EUR*. Retrieved February 2, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0079556006:EUR>
- Financial Times. (2025). *JPMorgan Funds - Europe Strategic Growth Fund A (acc) - EUR*. Retrieved February 2, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0210531801:EUR>

- Financial Times. (2025). *JPMorgan Funds - Europe Strategic Value Fund A (acc) - EUR*. Retrieved February 2, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0210531983:EUR>
- Financial Times. (2025). *MFS Meridian Funds - U.K. Equity Fund A1 USD*. Retrieved February 3, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0219441655:USD>
- Financial Times. (2025). *Nordea European Stars A distr EUR*. Retrieved February 3, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=FI0008802202:EUR>
- Financial Times. (2025). *Nordea European Stars A growth EUR*. Retrieved February 3, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=FI0008802194:EUR>
- Financial Times. (2025). *Nordea 1 - Global Stable Equity EUR Hedged BP EUR*. Retrieved February 3, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0278529986:EUR>
- Financial Times. (2025). *Nordea Japani K EUR*. Retrieved February 4, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=FI0008800412:EUR>
- Financial Times. (2025). *Nordea Vakaa Tuotto A K EUR*. Retrieved February 4, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=FI0008810254:EUR>
- Financial Times. (2025). *Schroder International Selection Fund EURO Equity A Accumulation EUR*. Retrieved February 4, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0106235293:EUR>
- Financial Times. (2025). *T. Rowe Price Funds SICAV - European Equity Fund A EUR*. Retrieved February 4, 2025, from <https://markets.ft.com/data/funds/tearsheet/summary?s=LU0285830955:EUR>
- Gavalas, D., Syriopoulos, T. & Tsatsaronis, M. (2022). COVID–19 impact on the shipping industry: An event study approach. *Transport policy*, 116, 157-164. <https://doi.org/10.1016/j.tranpol.2021.11.016>

- Geczy, C. C., Stambaugh, R. F. & Levin, D. (2021). Investing in Socially Responsible Mutual Funds. *Review of asset pricing studies*, 11(2), 309-351. <https://doi.org/10.1093/rapstu/raab004>
- Goodman, P. & Yee, V. (2021, March 24). Suez Canal Blocked After Giant Container Ship Gets Stuck. *The New York Times*. <https://www.nytimes.com/2021/03/24/world/middleeast/suez-canal-blocked-ship.html>
- Halbritter, G. & Dorfleitner, G. (2015). The wages of social responsibility — where are they? A critical review of ESG investing. *Review of financial economics*, 26(1), 25-35. <https://doi.org/10.1016/j.rfe.2015.03.004>
- Hamilton, S., Jo, H. & Statman, M. (1993). Doing Well While Doing Good? The Investment Performance of Socially Responsible Mutual Funds. *Financial analysts journal*, 49(6), 62-66. <https://doi.org/10.2469/faj.v49.n6.62>
- He, P., Sun, Y., Zhang, Y. & Li, T. (2020). COVID-19's Impact on Stock Prices Across Different Sectors-An Event Study Based on the Chinese Stock Market. *Emerging markets finance & trade*, 56(10), 2198-2212. <https://doi.org/10.1080/1540496X.2020.1785865>
- Hill, R., Ainscough, T., Shank, T. & Manullang, D. (2007). Corporate Social Responsibility and Socially Responsible Investing: A Global Perspective. *Journal of Business Ethics*, 70(2), 165-174. <https://doi.org/10.1007/s10551-006-9103-8>
- Hix, S. (2018). Brexit: Where is the EU–UK Relationship Heading? *Journal of common market studies*, 56(S1), 11-27. <https://doi.org/10.1111/jcms.12766>
- Hjalmarsson, G. (2014). The specialist: Meta asset management - ESG integration - where is the alpha in norm-based screening? Nordic Region Pensions & Investment News : NRPN, Retrieved from <https://www.proquest.com/trade-journals/specialist-meta-asset-management-esg-integration/docview/1526863822/se-2?accountid=14797>
- Humphrey, J. & Tan, D. (2014). Does it Really Hurt to be Responsible? *Journal of Business Ethics*, 122(3), 375-386. <https://doi.org/10.1007/s10551-013-1741-z>

- Investing.com. (2025). *FTSE 100 (FTSE)*. Retrieved February 5, 2025, from <https://fi.investing.com/indices/uk-100-historical-data>
- Investing.com. (2025). *STOXX 600 (STOXX)*. Retrieved February 5, 2025, from <https://fi.investing.com/indices/stoxx-600-historical-data>
- Jones, S., van der Laan, S., Frost, G. & Loftus, J. (2008). The Investment Performance of Socially Responsible Investment Funds in Australia. *Journal of business ethics*, 80(2), 181-203. <https://doi.org/10.1007/s10551-007-9412-6>
- Kalemli-Ozcan, S., Papaioannou, E. & Peydró, J. (2010). What lies beneath the euro's effect on financial integration? Currency risk, legal harmonization, or trade? *Journal of international economics*, 81(1), 75-88. <https://doi.org/10.1016/j.jinteco.2010.02.002>
- Kempf, A. & Osthoff, P. (2007). The Effect of Socially Responsible Investing on Portfolio Performance. *European financial management : the journal of the European Financial Management Association*, 13(5), 908-922. <https://doi.org/10.1111/j.1468-036X.2007.00402.x>
- Kempf, A. & Osthoff, P. (2008), SRI Funds: Nomen est Omen. *Journal of Business Finance & Accounting*, 35: 1276-1294. <https://doi-org.proxy.uwasa.fi/10.1111/j.1468-5957.2008.02107.x>
- Kurtz, L. (2005). Answers to Four Questions. *The Journal of investing*, 14(3), 125-140. <https://doi.org/10.3905/joi.2005.580558>
- Leite, P. & Cortez, M. (2015). Performance of European socially responsible funds during market crises: Evidence from France. *International Review Of Financial Analysis*, 40, 132-141. <https://doi.org/10.1016/j.irfa.2015.05.012>
- Lim, K. & Brooks, R. (2011). THE EVOLUTION OF STOCK MARKET EFFICIENCY OVER TIME: A SURVEY OF THE EMPIRICAL LITERATURE. *Journal of economic surveys*, 25(1), 69-108. <https://doi.org/10.1111/j.1467-6419.2009.00611.x>
- Lins, K. V., Servaes, H. & Tamayo, A. (2017). Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis. *The Journal of Finance*, 72(4), 1785-1824. <https://doi.org/10.1111/jofi.12505>

- Lobe, S. & Walkshäusl, C. (2014). Vice versus virtue investing around the world. *Review of managerial science*, 10(2), 303-344. <https://doi.org/10.1007/s11846-014-0147-3>
- MacKinlay, A. C. (1997). Event Studies in Economics and Finance. *Journal of economic literature*, 35(1), 13-39.
- 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>
- Markowitz, Harry. (1952). Portfolio selection*. *The Journal of Finance* 7.1, 77–91. <https://doi.org/10.2307/2975974>
- Menon, A. & Salter, J. (2016). Brexit: Initial reflections. *International affairs (London)*, 92(6), 1297-1318. <https://doi.org/10.1111/1468-2346.12745>
- Morgan Stanley. (2015). *Study Shines Light On Sustainable Investing*. Retrieved February, 28, 2022 from <https://www.morganstanley.com/pub/content/msdotcom/en/ideas/sustainable-investing-performance-potential/>
- Morgan Stanley. (2019). *Sustainable Reality: Analyzing Risk and Returns of Sustainable Funds*. Retrieved February 28, 2022 from https://www.morganstanley.com/content/dam/msdotcom/ideas/sustainable-investing-offers-financial-performance-lowered-risk/Sustainable_Reality_Analyzing_Risk_and_Returns_of_Sustainable_Funds.pdf
- MSCI ESG Fund Ratings. (2022). Retrieved March 15, 2022 from <https://www.msci.com/our-solutions/esg-investing/esg-fund-ratings>
- MSCI ESG Fund Ratings Summary. (2021). Retrieved March 15, 2022 from <https://www.msci.com/documents/1296102/15388113/MSCI+ESG+Fund+Ratings+Exec+Summary+Methodology.pdf>
- Nakai, M., Yamaguchi, K. & Takeuchi, K. (2016). Can SRI funds better resist global financial crisis? Evidence from Japan. *International review of financial analysis*, 48, 12-20. <https://doi.org/10.1016/j.irfa.2016.09.002>

- Nofsinger, J. & Varma, A. (2014). Socially responsible funds and market crises. *Journal Of Banking & Finance*, 48(C), 180-193. <https://doi.org/10.1016/j.jbankfin.2013.12.016>
- Peterdy, K. (2025). *ESG (Environmental, Social, & Governance)*. Corporate Finance Institute. Retrieved February 22, 2025, from <https://corporatefinanceinstitute.com/resources/esg/esg-environmental-social-governance/>
- Plantinga, A., Scholtens, B. & van Duuren, E. ESG Integration and the Investment Management Process: Fundamental Investing Reinvented. *J Bus Ethics* 138, 525–533 (2016). <https://doi-org.proxy.uwasa.fi/10.1007/s10551-015-2610-8>
- Principles for Responsible Investment. (2022). *About the PRI*. Retrieved February 28, 2022 from <https://www.unpri.org/about-us/about-the-pri>
- Razinskaite, J., & Srovnikova, P. (2017). The Eurozone crisis and the effect of BREXIT. *Journal of Management*, 30(1), 95–102. <https://www.ceeol.com/search/article-detail?id=544840>
- Renneboog, L., Ter Horst, J. & Zhang, C. (2008a). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of banking & finance*, 32(9), 1723-1742. <https://doi.org/10.1016/j.jbankfin.2007.12.039>
- Renneboog, L., Ter Horst, J. & Zhang, C. (2008b). The price of ethics and stakeholder governance: The performance of socially responsible mutual funds. *Journal of Corporate Finance*, 14(3), 302-322. <https://doi.org/10.1016/j.jcorpfin.2008.03.009>
- Revelli, C. & Viviani, J. (2015). Financial performance of socially responsible investing (SRI): What have we learned? A meta-analysis. *Business ethics (Oxford, England)*, 24(2), 158-185. <https://doi.org/10.1111/beer.12076>
- Sampson, T. (2017). Brexit: The Economics of International Disintegration. *The Journal of economic perspectives*, 31(4), 163-184. <https://doi.org/10.1257/jep.31.4.163>
- Sharpe, W. F., Alexander, G. J. & Bailey, J. V. (1999). *Investments* (6. ed.). Prentice Hall.
- SpaceX. (2021, April 7). *Starlink Mission*. <https://www.spacex.com/updates/starlink-mission-04-07-2021/index.html>

- Statman, M. (2006). Socially Responsible Indexes. *Journal of Portfolio Management*, 32(3), 100-109. <https://doi.org/10.3905/jpm.2006.628411>
- Statman, M. & Glushkov, D. (2009). The Wages of Social Responsibility. *Financial Analysts Journal*, 65(4), 33-46. <https://doi.org/10.2469/faj.v65.n4.5>
- Stoupos, N. & Kiohos, A. (2020). BREXIT referendum's impact on the financial markets in the UK. *Review of world economics*, 157(1), 1-19. <https://doi.org/10.1007/s10290-020-00393-z>
- US SIF Foundation. (2020). *Report on US Sustainable and Impact Investing Trends*. <https://www.ussif.org/files/US%20SIF%20Trends%20Report%202020%20Executive%20Summary.pdf>
- Wagner, M., Schaltegger, S. & Wehrmeyer, W. (2001). The Relationship between the Environmental and Economic Performance of Firms: What does theory propose and what does empirical evidence tell us? *Greener management international*, 34, 95-108.
- World Bank. (2003). *Public Policy for Corporate Social Responsibility*. Retrieved March 7, 2022 from <http://web.worldbank.org/archive/website01006/WEB/IMAGES/PUBLICPO.PDF>

Appendices