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Impact of sustainable strategies on price returns of funds investing in European assets

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Abstract

The thesis investigates the impact of ESG on the financial performances of a sample of funds investing in the European equity market. The outcome is the analysis of the performances achieved by equity funds pertaining to three different sustainability tiers based on SFDR classification and on the strategies adopted. The paper introduces the ESG topic encompassing the main Taxonomies and Disclosure Regulations, the status of the regulations and its impact on the industry, the current regulatory divergence and complexities, and how raters and industry associations are trying to help companies in winding them up. We introduce the IM industry and the players involved in its value chain, the financial instruments it offers to investors and the risks embedded in these investments with a focus on Sustainability Risk and Cost of Capital. We perform a deep literature review, analyzing the most relevant works that address the impact of sustainability on firm's performances in the financial markets. We found, regarding the topic, that the literature is discordant. Some authors express that sustainability impacts positively performances; others claim that the impact is negative, and others do not find evidence of the different performances among higher or lower levels of sustainability. We develop our analysis on 67 accurately sampled funds, starting from the ESG strategies adopted, identifying a wide range of alternatives. We found that similar ESG performances are related to exposure to the same sector, market and issuers. To conclude, we analyzed the returns of the funds in the sample, taking into consideration risk-return measures and absolute price returns over a ten-year period. Results show a tendency of higher performances for funds having lower ESG ambitions, with respect to the ones having higher sustainability concerns. However, most funds in the sample were classified with low or medium sustainability concern, while only few were highly sustainable according to the classification. Since the number of sustainable funds is increasing year by year, we believe that the results of our analysis may change in the future.

Key-words: esg; sustainability; funds; returns; performances; investment; financials; asset; stocks; prices

Abstract in italiano

La tesi indaga l'impatto dei criteri ESG sulle performance di un campione di fondi che investono nel mercato azionario europeo. Il risultato è l'analisi delle performance conseguite dai fondi azionari appartenenti a tre diversi livelli di sostenibilità sulla base della classificazione SFDR e delle strategie adottate. Nella prima parte, si introduce l'argomento ESG con le principali tassonomie e normative sulla divulgazione e il loro impatto sul settore, l'attuale divergenza e complessità normative e il modo in cui le agenzie di rating e le associazioni di settore stanno cercando di aiutare le aziende ad affrontarle. Presentiamo poi l'industria IM e i suoi attori principali, gli strumenti finanziari che offre agli investitori e i rischi, con particolare attenzione al rischio di sostenibilità e al costo del capitale. Eseguiamo un'approfondita revisione della letteratura, analizzando i lavori più rilevanti che affrontano il tema. Per quanto riguarda l'argomento, la letteratura è discordante. Alcuni autori affermano che la sostenibilità influisce positivamente sulle prestazioni; altri sostengono che l'impatto è negativo e altri non trovano prove delle diverse prestazioni tra livelli più alti o più bassi di sostenibilità. Sviluppiamo la nostra analisi su 67 fondi accuratamente campionati, partendo dalle strategie ESG adottate, individuando un'ampia gamma di alternative. Le performance ESG simili sono correlate all'esposizione allo stesso settore, mercato ed emittenti. Infine, Analizziamo i rendimenti dei fondi del campione, prendendo in considerazione le misure di rischio-rendimento e i rendimenti assoluti dei prezzi su un periodo di dieci anni. I risultati mostrano performance più elevate per i fondi con ambizioni ESG inferiori, rispetto a quelli con maggior focus in materia di sostenibilità. Tuttavia, la maggior parte dei fondi del campione è stata classificata con basso o medio focus sulla sostenibilità bassa, mentre solo pochi erano altamente sostenibili secondo la classificazione. Poiché il numero di fondi sostenibili aumenta di anno in anno, riteniamo che i risultati della nostra analisi possano cambiare in futuro.

Parole chiave: esg; sostenibilità; fondi; ritorni; performances; investimento; finanza; asset; azioni; prezzi.

Contents

Executive Summary

During our studies both of us had the opportunity to specialize in the Financial Sector. Tommaso Faccioli worked as intern at Deloitte in the Luxembourgish entity of the group, where he had the opportunity to develop his knowledge in the Investment Management Industry and developed first-hand knowledge on the Sustainability regulations impacting it.

Enrico Mauro, the co-author of this thesis, had the opportunity to experience the banking sector during his internship as Credit Analyst in a financial institution. He developed its interest and capabilities in financial modelling, credit analysis and risk assessment.

For the development of our research, we decided to combine the skills acquired and the methodologies learnt to address a topic of crucial importance in the current industrial economic environment. Combining the experience developed in the IM and Banking industries we decided to investigate the impact of ESG on the financial performances of Mutual Funds investing in the European equity market. Our work analyzes the performances, over the last ten years, achieved by equity funds pertaining to three different sustainability tiers based on SFDR classification and on the approaches and strategies adopted.

Firstly, our paper introduces the ESG topic encompassing the main ESG Taxonomies and Disclosure Regulations, the current status of the regulations and its impact on the industry under analysis, the current regulatory divergence and complexities, and how raters and industry associations are trying to help companies in winding them up.

Secondly, we introduced the IM industry and the players involved in its value chain, the financial instruments it offers to investors and the risks embedded in these investments with a focus on Sustainability Risk and on Cost of Capital as a channel for the “Direct” materiality of its risk.

Third, a deep literature review was performed, analyzing the most relevant works that address the impact of sustainability on firm’s performances in the financial markets. The results of previous research were summarized in three main methodologies (Portfolio analysis, multivariate regression, and event studies) and we found, regarding the topic, taht the literature is discordant. Some authors express that sustainability impacts positively performances; others claim that the impact is negative, and others do not find evidence of the different performances among higher or lower levels of sustainability.

Next, we developed our analysis on 67 accurately sampled Mutual funds. We analyzed the ESG approaches and the investment strategies adopted by the funds in the sample, identifying a wide range of alternatives.

Then, we analyzed the investment portfolio of each fund in the sample. Different ESG ambition levels reflect on the holding of the portfolio in terms of exposure to sectors, markets and issuers. Then, we computed the performances of each fund in terms of sustainability using Refinitiv as ESG Rating Provider. We found that similar ESG performances are related to exposure to the same sector, market and issuers.

To conclude, we analyzed the financial performances in terms of returns of the funds in the sample. This analysis was developed taking into consideration Risk-Return measures and absolute price returns over a ten-year period. Results show a tendency of higher performances for funds having lower ESG ambitions, with respect to the ones having higher sustainability concerns. However, most funds in the sample were classified with low or medium sustainability concern, while only few were highly sustainable according to the classification we adopted. This may have an impact on the calculation of the average performances of funds in the same class. Since the number of sustainable funds is increasing year by year, we believe that the results of our analysis may change in the future.s

1 The current relevance of ESG-related Research

In the past few years, the frequency and intensity of extreme weather phenomena increased. In Europe, summer 2022 broke many records of extreme sweltering temperature as observed from the data of the Universal Thermal Climate Index (UTCI). Due to this, as highlighted by an analysis by The Economist (2022) the same year, a growing share of population worldwide experienced extreme or very strong heat stress, underlining once again the need for limiting world temperature increase. Even in this critic situation, research from the Oxford University (2021) show how humanity is still on time to limit a glooming future where the temperature rise would affect critically its ability to live on this planet. The decreasing costs for renewable energies, continuous innovation, raising public concern and government actions are highlighted as drivers of a possible temperature rise limiting path. Given this state-of-play, momentum around ESG grew exponentially the past few years and was given even higher attention during 2022. This ESG focus has been primarily driven by several factors: investors' demand, stakeholders' pressures enhanced by an increased climate-related problems and possible solutions' awareness, more frequent Business Operations disruption caused by Sustainability Risks, and increase in the regulatory attention[1]. Furthermore, the Covid Pandemic and the higher recognition of systemic

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[1] EMEA Centre for regulatory Strategy puts Climate Related Risk Management as one of the 10 most prominent trends and Priorities in Governments minds. SEC proposed ESG Rulemaking, ISSB already released Prototypes for General Sustainability and Climate-Related Disclosure

risks impacts on our economies, societal prosperity and health, lead governments and companies to orient their effort in the ESG domain.

This increased focus towards ESG was acknowledged by the financial markets and the investors leading to ESG focused investments that now account for one third of global managed assets. Indeed, investors gain higher ability to assess authentic ESG integration and acknowledged the possible performance benefits generated by this practice. Thus, this shift in the perception of value generation from the adoption of ESG strategies led to a change in investors' preferences in the financial markets. This trend was not on a small scale; indeed, the Financial Times (2018) highlighted a growth of 600 percent of the asset under management of funds using ESG screens over the ten years previous to the publication of their article. However, it is important to notice that despite business leaders acknowledge the threat posed by climate change and there is a trend of embracing ESG in business activities, a stall in action was caused by the Covid Pandemic (Deloitte Global, 2021) and the negative market conditions that occurred in the past two years. Thus, there is still a lot more to do as 65% of the executives described, while answering to the Deloitte Survey, how their companies will need a retrench of the ESG oriented initiatives due to constrains posed by the pandemic. Nonetheless, despite the pandemic, 25% of the respondents to Deloitte Survey stated that their companies would have aimed to accelerating the Environmental sustainability initiatives in the months ahead. All in all, even with the severity of the situation there is still a gap between sentiments and actions.

Moreover, the business environment has shown shifting expectations around the role of business in society which are compelling companies to embrace ESG and create value for all stakeholders. Climate Check: Business' views on environmental sustainability report from Deloitte Global highlighted how this ESG transition has already started, pushed from several forces coming either from changes in the environment and from the inside-out of firms. More than 90% of S&P 500 Index Companies are currently publishing sustainability reports, and as for 2020, 86% of employees are expecting their CEOs to speak out on social issues, 7 in 10 people globally support the organizing of boycotts against companies pursuing irresponsible behaviors. Thus, this transition should not be considered as only driven by shifting preferences within the financial sector but as pushed by the business environment in which firms are operating. Through this lens, and as highlighted by the result gathered by Deloitte, Environmental sustainability initiatives appear to be primarily driven by the pressure exercised by a broad range of stakeholders.

Another of the Big 4, KPMG, investigated the reasons behind this transition surveying the market players on a yearly basis. One of the main outcomes of the 2021 survey was that Investor demands became the top motivating factor for the ESG efforts, up five percentage points in the C-levels answers in comparison with the previous year's survey. Furthermore, the developed survey highlighted confirms how activism is also playing a bigger role in generating momentum, as employees and external advocates demand greater climate action from corporations (KPMG, 2021).

Research highlighted how climate change is no more a distant threat for companies which are starting to feel the impact of climate related disruptions: the direct negative impacts to business operations remained a top motivator, demonstrating that organizations are increasingly aware of how climate change will impact their core operations (Deloitte, 2021 & KPMG, 2021). As for March 2021, over 30% of the 750 Executives surveyed worldwide by Deloitte disclosed they are starting to feel operational impact of climate-related disasters. Moreover, over 25% are feeling resource scarcity for the same reason. The biggest changes in environmental/sustainability that are threatening to impact or are already impacting the businesses of the surveyed executives according to their responses are:

- Operational Impact of climate-related disasters
- Scarcity/cost of resources
- Regulatory/Political uncertainty, this change generates an uncertainty which for many executives pertaining to the banking and life sciences/ health care industries hinders by large margin sustainability efforts of their companies
- Increased insurance costs or lack of insurance availability
- Reputational Damage
- Shareholder pressure/divestment
- Cost of climate change mitigation
- Regulatory costs
- Employee health (including mental health)
- Need to reengineer the industrial processes
- Disruption of the supply chain

The third biggest change according to Executives id the change in Regulation and Political Uncertainty. This, as analyzed in our research, as become crucial and receiving vast attention by European Market players. Europe is driving the Regulatory pace and aim at being the leader in the transition to a more sustainable economy. Thus, the regulatory context is undergoing a fast-paced evolution around Sustainability and new pieces of regulation are spanning firms and stakeholders to create collective actions. Furthermore, even across European boundaries National Competent Authorities are posing their focus on climate commitments and, after the covid pandemic they increased their focus on social inequalities.

This creates a high transition risk for firms and carries with it a greater acknowledgement of need for standardization of definition and processes around sustainability topics. Fortunately, market players consortia and organizations are supplying market players with relevant Framework to help navigating this unprecedented risk.

In a nutshell, four main forces are pushing companies towards sustainability:

- Shareholders and Financial Market Pressure
- An increased activism of stakeholders and employees
- Business Disruptions caused by Sustainability-related risks
- An evolution in the political and regulatory environment

To address this transition, Executives are putting in place developments towards more expansive efforts and measures. Companies are focusing on three points to address sustainability:

- The study of governments policy initiatives
- The encouragement of a set of criteria across the supply chain
- The usage of materials with a reduced footprint.

Moreover, executives are developing collaborations between institutions for the development of solutions to climate change. Through the development of these actions, firms might enable new streams of value creation driven by ESG. These channels have been assessed on the market by Deloitte through market surveys conducted from 2019 to 2021. According to the answer gathered, there are six main channels through which ESG might be value enhancing. First, Sales and Innovation might benefit from the ESG efforts through the generation new revenue streams coming from socially conscious offerings. Furthermore, Sustainability marketed products, compared with conventionally marketed experienced a 39,5% price premium. Second, through Cost Savings and Improved Performances firms can improve their Operational Efficiency. On one hand, as reported, 64% of the companies surveyed and with product sustainability achieved lower logistics and supply chain costs. On the other hand, an increase of 10% in the employees' connection with the company was driving relevant decrease in the Safety Incidents, a reduction in turnover and an increase in profitability (Nate Dvorak, 2017). Third, a factor that is one of the main drivers of ESG action pursuit also according to previous academic research, Capital access and market valuation are affected by the adoption of ESG practices. ESG focused brands and high-purpose brands experienced on average a doubling in the EBITDA-based valuations as high as x4 times faster. Furthermore, companies meeting stakeholders' expectation achieved a 6,4% higher return on equity. Fourth, Talent as an improved attractivity to Human Capital is generated according to research when embracing Sustainability. Fifth, Brand and Reputation is positively affected by an engagement in ESG activities, as reported by Deloitte's results in the face of negative publicity brand with ESG focus had a 6 times higher likelihood to be protected and 78% of consumers were more likely to remember companies that exhibit a strong purpose (Porter Novelli, 2021). Lastly, the Risk Mitigation channel is affecting positively the possibility to generate value of firms, indeed, 15% of companies, if accounting also for the generated environmental damage would result as unprofitable.

Focusing on the need for Financial Institutions to develop their sustainability path different factors need to be considered. Financial institutions can adopt various stances on sustainability which will end up conditioning their progress and the ambition of their path. In particular, financial intuitions need to consider and include in their path Investors' expectations, Regulatory Compliance, Alignment with the Peers and the adopted market practice, the expectation of other stakeholders, and the decision of being Sustainability leaders. For the inclusion of the last factor, the financial Institution might need to be ready to trade off financial return for ESG criteria. Once acknowledged the ESG ambitions, there are different levers that can be adopted to make effective the transition. In particular, the adoption of a responsible investment approach, the adoption of international standards, the application of labels, the adaptation of the governance model, the monitoring of non-financial KPIs, and the production of reports on the sustainable impact the firm is achieving.

2 Introduction on Environment, Social, Governance (ESG)

To start the analysis, we analyzed the ESG landscape in which sustainable companies and sustainability indexes and funds operates. The introduction will touch the following topics:

- ESG Taxonomy and Disclosure Requirements
- Regulatory maturity
- Regulatory requirements for the IM Industry (MiFID II and SFDR)
- The effects of Regulatory Divergence
- EUROSIF Framework
- ESG Ratings
- ESG Indexes

The sources we drew on are a set of a practitioners' view research and academic papers. The goal was to frame the level of understanding within firms of the topic and the maturity of ESG investing market.

2.1. ESG Taxonomy and Disclosure

Sustainability is defined as "*meeting the needs today without compromising the ability of future generations to meet their own needs*".

In the current polyhedric regulatory panorama might lead companies to troubles in understanding what is ESG, what are the evaluation criteria at its basis and understanding how to act to face the challenges associated with them. ESG evaluation, supported by the utilization of ESG Frameworks, works alongside traditional financial investment valuation methodologies and it is crucial to diagnose a firm's ESG risks and highlight corresponding opportunities. Thus, the focus of this evaluation is to pursue financial evaluation for the company by both understanding possible realization of risks that might lead the company to lose money by not acting in an ESG conscious way and avoiding the missing of gain arising from ESG opportunities. This focus on financial returns only makes ESG differ from investment practices as Socially Responsible Investing (SRI), Sustainable Investing and Impact Investing. In particular, the aim of these investment practices is to move the frontier with joint optimization of Financial Outcome and Social Outcome and are acting at different stages of the spectrum between only one of these two investment objectives. Socially Responsible Investing tries to mitigate ESG risky practices in order to protect value and is defined by the Social Investment forum (SIF) as an investment process that considers the social and the environmental consequences of investments, both positive or negative, within the context of rigorous financial analysis. Sustainable Investing adopts progressive ESG practices that may enhance value; on the other side, Impact Investing refers to investments that are made with the investor's specific goal of producing a positive social or environmental benefit in addition to returns on investment.

Specifically, SRI generates new challenges throughout the investment lifecycle. Firstly, it is challenging to understand the expectations of investors and the competitors positioning regarding ESG. Secondly, the definition of a responsible ambition and sustainable investment strategy; the review of the operating model to match the newly defined SRI strategy; the monitoring and reporting is an ongoing challenge regarding the adopted SRI strategy, the assets, and the impacts; ensuring the compliance with sustainable finance regulation.

Sustainable Investing[2] takes proactively into explicit consideration the decision's impact on global issues like population growth, scarce resources depletion and

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[2] *A product with a sustainable investment is defined within EU/ 2019/ 2088 Article 2(17) as an investment in an economic activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and greenhouse gas emissions, or on its impact on biodiversity and the circular economy, or an investment in an economic activity that contributes to a social objective, in particular an investment that contributes to tackling inequality or that fosters social cohesion, social integration and labor relations, or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance*

pollution. This practice has been embraced by different investors classes from Institutional to Retail to Governments (Monsoo Kang, 2021) and gained initial popularity by imposing negative screening under the umbrella of socially responsible investing (I.e., Pastor et al. 2020).

On the other and, impact investments can be made in any asset class that differentiate by the level of risk, return and impact. Impact investing is practiced mainly by individuals and institutional investors such as hedge funds, pension funds, and non-profit organizations (Olga Ignjatov, 2022).

To support a clear understanding of ESG we decided to lean on a distillation of the ESG Framework proposed by Deloitte Analysis which defines the drivers at the basis the three macro categories as follows aligned with different SDGs (I.e., Sustainable Development Goals) furtherly analyzed hereafter:

- Environmental (E): which are issues concerning any aspects of a company's activity that affects the environment in a positive or negative matter. These issues are aligned with the SDGs number 6, 7, 11, 12, 13, 14, and 15
    - Climate change
    - Responsible use of natural resources
    - Energy consumption

- Social (S): which are issues varying from community-related aspects and work-place issues and are aligned with the SDGs number 1, 2, 3, 4, 5, 8, 9, and 10
    - Diversity, Equality and Inclusion
    - Community Support
    - Privacy and Security

practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance;

- Employee opportunity and developmen

- Governance (G): according to Larker an Tayan (2019) good governance can be defined as: “a set of processes or organizational features that, on average, improve decision-making and reduce the likelihood of poor outcomes” and is aligned with the SDGs number 16 and 17
    - Ethical Conduct
    - Fiduciary responsibility
    - Reporting Transparency
    - Leadership and board accountability

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Figure 2.1: Sustainable Development Goals, Meridian Fund Website

The Sustainable Development Goals have been published following the Paris Climate Agreement in which United Nations members committed to implement measures aimed to contain or reduce the global emission of Greenhouse Gasses (hereafter GHG), considering the reduction, until 2030, of, at least 45% in global emission, when compared to 1990 levels, and Carbon Neutrality by 2050. The SDGs were published together with the United Nations Agenda 2030 during December 2015and are the following 17:

This SDGs opened the path leading to the publication in 2018 of the EU Action Plan on Financing Sustainable Growth leading to Legislative Proposals supported by the launch of the Technical Expert Group. This Action Plan is paving the way for implementing 10 key actions following 3 main objectives. The first objective is the reorientation of capital flows towards sustainable investments, in order to achieve sustainable and inclusive growth. Second, to manage financial risk stemming from climate change, resource depletion, environmental degradation and social issues. Third, to foster the transparency and long-terminism in financial and economic activity.

To achieve the first objective the following actions were initiated: the establishment of an EU classification system for sustainability activities (EU TAXONOMY), the creation of standards and label for green financial products, the fostering of investment in sustainable products, the incorporation of sustainability in investment advice as included in the requirements of the MiFID II (Market and Financial Instruments Directive) regulation, and the development of sustainability benchmarks. The actions pursued for achieving the second objectives were the improved integration of ESG in ratings and market research, the clarification of institutional investors and asset manager's duties incorporated in the SFDR regulation, and the incorporation of sustainability in prudential requirements. The third objective would be achieved by a strengthening sustainability disclosure and accounting rulemaking through the publication of NFRD (Non-Financial Regulatory Disclosure), CSRD (Corporate

Sustainability Reporting Directive) and SFDR, and the fostering of sustainable corporate governance and attenuating the short-terminism in capital markets.

As highlighted, this plan will be affecting different regulations that are covering the Investment Management Industry. In particular is worth to notice that the following regulations have been impacted and/or are result of the work conducted to the achievement of these goals by the European Regulators: Sustainable Finance Disclosure Regulation (SFDR), EU Taxonomy, MiFID II Amendments, UCITS and AIFM Amendments.

Given the complexity of searching the right data for the evaluation, common challenges are present in assessing ESG level of companies. Currently, ESG data is inconsistent and difficult to compare since is mostly based on voluntary disclosure: in order to solve this problem ISSB is going to publish baseline for disclosure. ESG data is compromised by interdependence: these is a lack of primary data regarding ESG activities of the company and the weakness of the data is magnified throughout the value chain; data collectors and providers do a biased work based on their perception and practices. There is an absence of verification for ESG data collectors and providers output, this might lead to inconsistencies: ESG data aggregators and unable to independently verify data and their analytics engines are structured always in different ways.

Moreover, financial institutions are not always equipped to assess the ESG ratings they are receiving and their accuracy. ESG data is patchy: The quality and quantity of ESG reporting varies enormously by jurisdiction, by asset class, and by size of corporate. ESG data is out of date as almost all ESG data is backwards looking due to the time necessary for reporting. Hence, data published is always about where a company was in a certain point in time and not what have achieved today. Organizations in the

Financial Sectors lack competencies regarding ESG data, leading to high exposure regarding ESG regulations.

There are multiple sources and lack of a single source of truth: this requires financial sector firms to face technical complexities in compiling multiple data sources and need to evaluate the weight of different providers in the evaluation.

2.2. Regulatory Maturity

To stimulate sustainable investments, public institutions must create a plain field with clear definition of ESG related topics and disclosure framework. Even tough governments and regulatory institutions have already been acting towards this goal in the past 8 years following the 2015 Paris Agreement, a lot is still to be done. From the establishment of the Taskforce on climate-related financial disclosure (TCFD), the biggest milestones in the regulatory panorama to assist transition towards a greener economy have been the following across the world.

In 2019 the EU Green Deal was signed with the goal of an EU-wide greenhouse gas neutrality by 2050. The same year EU published the Regulation (EU) 2019288 on sustainability-related disclosures in the financial services sector (I.e., also referred to as SFDR). The following year, EU action plan for sustainable finance was published with the aim of redirecting capital flows toward sustainable investing and promoting the transparency and long-terminism.

In 2020, Singapore Guidelines were disclosed on environmental risk management and the IFRS published a report intended to support the application of IFRS Standards under the effects of climate-related matters.

In 2021, three main sustainability-related publications have been impacting the financial markets: the NY state guidance for managing financial risk from climate change, the Net Zero Asset Owners Alliance (NZAOA) set by members of the interim targets (2025) for the decarbonization of investments and the Climate Biennial

Exploratory Scenarios (CBES) – UK Stress Test. What once were strong recommendations have been codified into hard regulation that will continue to apply year after year heading into the future. Companies must start implementing these international standards since regulators are calling to evidence their commitment with transparent reporting. Governments and regulatory authorities set a timely calendar for the publication of new ESG policies and taxonomies that companies will need to comply with.

In 2022, the publication of FINMA & TCFD and EU Taxonomy FY21 regarding climate mitigation and adaptation, and the creation of IFRS – ISSB Climate Accounting Standards which will consolidate the Climate Disclosure Standard Board (CDSB) and the Value Reporting Foundation (VRF) in ISSB. It is important to notice that with the impending publication of the ISSB's proposed standards[3] in mid-2022 there will be an authoritative set of standards that will be pivotal for the reach of market demand and alleviating the companies' level of effort in reporting according to the variety of recognized ESG standards and frameworks.

Looking at the next future, the following events will mark other milestones on the path to sustainability:

- The publication of the EU Taxonomy FY22 regarding other environmental goals (2023)
- The launch of the Net Zero Insurance Alliance (NZIAM) (2023)
- The creation of a Taskforce on Nature-related Financial Disclosure (2023)
- The expansion of reporting scope for CSRD (2024)

[3] ISSB is supported in its initiative by the IOSCO (International Organization for Securities Commission) and will consolidate expertise, content and staff through a merger with the Climate Disclosure Standard Board (CDSB) and the Value Reporting Foundation (VRF)

- The publication of new reporting standards (2024)
- The issuance of a new Climate Stress Test (2024)

The UN, together with other International Institutions, is pushing towards a common set of rules to drive the change. The IFRS Foundation Trustees announced in November 2021 the formation of an International Sustainability Standards Board (ISSB) at COP26 trying to set consistency and comparability of companies' sustainability disclosure to meet the need of the capital markets. This effort will include various existing voluntary ESG standards and frameworks already adopted by global and US companies and drive the development of a set of rules around connectivity to financial reporting.

In order to keep up and navigate the uncertainty generated by the continuously evolving regulation, companies are more and more relying on external sustainability disclosure frameworks and blueprints. Those include among others the Sustainable Development Goals (SDGs), the Global Reporting Initiative (GRI) Standards, the Sustainability Accounting Standards Board (SASB) Standards, and the Task Force on Climate-related Financial Disclosure (TCFD). While blueprints like the Sustainable Development Goals provide interlink global goals designed to lead the pursuit of peace and prosperity for humanity and for the planet, frameworks as TCFD provide companies with principle-based guidelines to support companies in the identification of ESG topics to cover and determine how to structure and prepare the ESG information they disclose. Standards like the GRI and SASB provide specific and detailed requirements to assist companies in determining what specific metrics to disclose for each topic. However, the abovementioned sustainability reporting frameworks are the mostly adopted but are only a small selection of the one currently available (other frameworks are: TNFD, WECIBC, COP, IR, CDSB, Value balancing alliance).

Even though sustainability issues might affect every business, the ones that each company should manage measure and disclose given their strategic alignment may vary. The Sustainability Accounting Standard Board (SASB) places the following topics as examples of business issues sustainability related that firms should consider analyzing and disclose to investors:

Table 2.1: SASB Sustainability Related Business Issues.

Environment	Social Capital	Human Capital	Business Model & Innovation	Leadership & Governance
• Greenhouse gas emissions • Air quality • Energy management • Water & wastewater management • Waste & hazardous materials management • Ecological impacts	• Human rights & community relations • Customer privacy • Data security • Access & affordability • Product quality & safety • Customer welfare • Selling practices & product labeling	• Labor practices • Employee health & safety • Employee engagement, diversity, equity, & inclusion	• Product design & lifecycle management • Business model resilience • Supply chain management • Materials sourcing & efficiency • Physical impacts of climate change	• Business ethics • Competitive behavior • Management of the legal & regulatory environment • Critical incident risk management • Systemic risk management

The most important regulation affecting the financial sector for the disclosure of sustainability-related information is the previously mentioned SFDR. This Law introduced various disclosure requirements for financial Institutions comprising the UCITS funds subject to our analysis.

2.3. Regulatory Requirements for the IM Industry (MiFID II and SFDR)

As previously mentioned, MiFID II regulation has a great importance for the sustainability transition since according to its requirements, the assessment of client sustainability preference becomes mandatory. The sustainability preference assessment must be carried out following one of the three approach proposed by the regulation: a percentage in sustainable investing following the definition introduced by SFDR, Taxonomy alignment, or the consideration of PAIs on quantitative and/or qualitative consideration. The decision of the client over one of the introduced dimensions becomes then binding for the FMPs and FAs in their product offerings which should match the Investors preferences.

The Regulation (EU) 2019/2088 of 27 November 2017 on sustainability related disclosure (aims at channeling private investment towards sustainable investing while preventing greenwashing practices by requiring financial industry actors to provide greater transparency on the degree of sustainability of financial products. In scope of this regulations, are not only UCITS but all the Financial Market Participants (hereafter FMPs) making available financial products, for example Alternative Investment Fund Managers (hereafter AIFMs), and insurance-based investment products hereafter (IBIPs) which are out of the scope of our research. Furthermore, are under the scope of this regulation also Financial Advisers (also referred to as FAs) providing investment or insurance advice, for example insurance undertakings, credit institutions, investment firms, AIFMs.

The key concepts behind this regulation are mainly three. Firstly, the classification of financial products according to their level of ambition regarding sustainability and inform about how these sustainability ambitions are met in pre-contractual documents and periodic reports. Second, the disclosure on the integration of sustainability risks into investment processes or advice, as well as remuneration policies. Third, ensuring transparency on adverse sustainability impacts of investment decisions or advice through the inclusion of Principal Adverse Sustainability Impact (hereafter PASI). PASI are those impacts of investment decisions and advice that result in negative effect on sustainability factors.

The SFDR Regulation requires disclosure at entity and product level, with different application dates and some articles are complemented by Regulatory technical Standards also referred to as RTS or SFDR Level II Requirements. At Entity Level, the following articles apply requiring disclosure through the Website of the Entity:

- Art. 3: Transparency of Sustainability Risk Policies at entity level. This should already be in place given the deadline expired on March 2021
- Art. 4: Transparency of Adverse Sustainability Impacts at Entity Level, this article was amended, and its scope was enlarged with the publication of the RTS which required the creation of a specific section in the website "Adverse sustainability Impact statement" with several narrative sections and environmental and social indicators. Given the possibility for certain Financial Entities to opt out from this Disclosure and the deadline fixed to June 2023 the availability of information is still limited on this article. For FMPs minimum requirements for the disclosure are:
    - Information about policies on identification and prioritization of PASI and indicators
    - Description of PASI and actions in relation thereto taken/planned
    - Brief summaries of engagement policies in accordance with Art. 3g of the Shareholder Rights Directive II
    - Reference to adherence to responsible business conduct codes, internationally recognized DD standards, reporting and pot. alignment with Paris Agreement objectives
    - The disclosure is required for entities having more than 500 employees at group level. If exempted entities desire to opt out from the consideration of PAS it is required and explanation as to why not and, where relevant, whether and when FMP intends to consider PASI
- Art. 5: Transparency of remuneration policies in relation to the integration of sustainability risks at entity level. Deadline March 2021

Table 2.2: Article 5 SFDR, Deloitte Research.

Topics typically covered in a sustainability risk policy	Minimum requirements for PASI consideration disclosure	High-level statement examples
• Verify the **definition** of sustainability risks • Verify the **governance** defined around sustainability risks • Verify the sustainability risks **identification and prioritization process** • Verify the sustainability risk **monitoring processes** (exclusion list, controversies, international standards adherence, etc.) • Verify the alignment with and inclusion into the **risk management process**	• Verify the information about **policies on identification and prioritization of PASI** and indicators • Verify the **description of PASI and actions in relation** thereto taken/planned • Identify the brief summaries of **engagement policies** in accordance with Art. 3g of the Shareholder Rights Directive II • Verify the reference to adherence to responsible **business conduct codes**, internationally recognized DD standards, reporting and potential alignment with Paris Agreement objectives	• "The remuneration policy **does not reward** excessive risk taking, including sustainability risks." • "The remuneration policy **does not encourage** the excessive adoption of sustainability risks." • "The remuneration policy adopts principles **consistent with a sound risk management** and that do not encourage risk taking – including sustainability risk taking."

At Product Level (E.g., at sub-fund level for UCITS funds which are the focus of our analysis), 6 articles of the SFDR are applicable, 4 of which were amended by the publication of the respective RTS:

- Art. 6: Transparency of the integration of sustainability risk at product level should be available on the pre-contractual documents.
- Art. 7: Transparency of Adverse Sustainability Impacts at financial product level. The information regarding their inclusion in the investment policy for the product might still not be available given the deadline set for end of December 2022.
- Art. 8: transparency of the promotion of environmental or social characteristics in pre-contractual disclosure. For this disclosure requirements, together with the ones coming from the following article, RTs were published providing a template for the presentation pf the pre-contractual information to be provided for any financial product identified as Art. 8 or Art. 9 according to SFDR. The deadline for the application of the RTS was set to January 2023.
- Art. 9: transparency of Sustainable Investments in pre-contractual disclosures.
- Art. 10: for each Art. 8 and 9 products transparency of the promotion of E/S characteristics and sustainable investments on the website is required. This article was amended by an RTs requiring a description of the mandatory

sections and information to be published on the website for products classified as Art. 8 & 9. Important information to be found in the sections are information on the methodologies used to assess, measure and monitor the E and S characteristics or impact of the sustainable investments (E.g., including data sources, screening criteria, relevant sustainability indicators).

- Art. 11: Transparency of the promotion of environmental or social characteristics and of sustainable investments in periodic reports. This article was amended by an RTS which provided a template for the presentation of the information to be provided in the periodic reports for any financial product identified as Art. 8 or 9. The deadline for the disclosure of the information regarding this article is fixed to January 2023

As pre-contractual documents are intended the Prospectuses, Fact Sheets and Key Investor Information Documents (Hereafter KIIDs) of the peer funds and the Sustainability Policy of the entity level.

Another objective of the SFDR is to clarify the difference between Sustainability risks and Principal Adverse Impacts (hereafter PASI) which have often being perceived as interchangeable terms. On one hand, Sustainability risks, according to SFDR (14), "means an environmental, social or governance event or condition that, if it occurs, could case a negative material impact on the value of the investment". Examples might be a devaluation of an investment in an investee which is located in regions exposed to floodings or reputational risks in an investee company which disrespects labor right or have discriminatory practices. On the other hand, Principal Adverse Impacts "should be understood as those impacts of investment decisions and advice that result in negative effects on sustainability factors." – SFDR (20). SFDR Annex II provides a list of Principal Adverse Impact Indicators (hereafter PAIs) for the correct evaluation and disclosure of the PASI, these include a list of 14 mandatory KPIs under 4 mandatory categories (I.e., Greenhouse gas emissions 6 KPIs, Biodiversity 1 KPI, Water 1 KPI, Waste 1 KPI, and Social and employees matters 5 KPIs) plus two to be selected from a provided list for Environment and Social Issues by the FMP. Thus, A double materiality is present, Sustainability risks precede and influence the investment decision while PASI result from the investment decision. A consideration by investors of Sustainability Risks in the investment decisions leads to investors' reduction of PASI.

Stemming from SFDR level 1, three product classifications were defined which were denominated according to their ESG ambitions. This classifications at product level are the ones used by the analysis to distinguish between financial products with focus on Sustainability and Neutral ones. SFDR requires financial participant to classify their products into three categories:

- Art. 6: which are products with incorporation of ESG limited to consideration of sustainability risks. They are considered ESG Neutral Products and in our sample, they constitute the reference peer group for Compartments holding also non-sustainable stocks in their portfolios.
- Art. 8: are products considering sustainability risks, which promote environmental and/or social characteristics and which might consider the "Do not significant harm" principle; these products are also referred to as Light Green. An evolution of this category has been recently proposed as enhanced Art. 8 or 8+, however lacking legal appraisal this new classification will not be furtherly considered in our analysis.
- Art. 9: which consider sustainability risks, have a Sustainable Investment Objective, and across the entire portfolio these products consider the "Do not significant harm" principle. These are the products with the highest ESG

ambitions and are also referred to as Dark Green. For the financial product classified with this article ESG os a binding aspect of investment process and the focus is on sustainability. Together with article 8 funds they will constitutes the ESG focused fund sample of our analysis.

Article 6 of the SFDR requires FMPs and FAs to explain if, how and to what extent Sustainability Risks are relevant for investment and/or investment/insurance advice. In particular, for FMPs at product level, it requires the disclosure of the manner in which SR are integrated into investment decisions and the results of the assessment of the likely impacts of SR on the returns of the financial products in pre-contractual documents.

The Promotion of E/S characteristics in Art. 8 products might involve the promotion of Environmental characteristics, Environmental characteristics, or a combination of the two. This provided that the companies in which the investment are made follow good governance practices. This Promotion should be accompanied with a clear disclosure of information regarding how these characteristics are met, if an index has been designated as a reference benchmark, information on whether and how this index is consistent with these characteristics, and indication of where methodology uses for calculation of the index is to be found. Thus, sustainable investment is not the objective of the product, but sustainability remains an important and binding aspect of the investment process. On the other side Article 9 funds pursue a Sustainable Investment objective which is *is defined within EU/2019/2088 Article* 2 (17) as an investment in an economic entity or activity that contributes to an environmental objective, as measured, for example, by key resource efficiency indicators on the use of energy, renewable energy, raw materials, water and land, on the production of waste, and greenhouse gas emissions, or on its impact on biodiversity and the circular economy, or an investment in an economic activity that contributes to a social objective, in particular an investment that contributes to tackling inequality or that fosters social cohesion, social integration and labour relations, or an investment in human capital or economically or socially disadvantaged communities, provided that such investments do not significantly harm any of those objectives and that the investee companies follow good governance practices, in particular with respect to sound management structures, employee relations, remuneration of staff and tax compliance. Thus, the objective of the financial product relates to a sustainability objective or impact. Furthermore, Article 9 products for FMPs require the disclosure of information with higher levels of detail. Firstly, if an index has been designated as reference benchmark and information on how this index is aligned with the objective and the differentiating factors of the index in comparison to a general market index. If no index has not been designated a clear explanation of how the objective is to be attained should be included. Second, in case the financial product has a carbon reduction objective, information regarding the alignment of this objective with the Paris agreement. If no EU Climate Transition Benchmark or EU Paris aligned benchmark is available a detailed explanation on how the continued effort of attaining the objective of reducing carbon emissions is ensured. Indication of where methodology used for the calculation of indices is to be found has be included as well.

2.4. The Effects of Regulatory Divergence

The regulatory divergence causes criticalities in the ESG environment.

The following divergences are presents in the EU region:

- Taxonomy regulation (Regulatory technical standards)
- Sustainable Finance Disclosure Regulation SFDR
- Definition of the European ESG Template 1st July 2022
- Other regulations impacting esg initiatives: NFRD Taxonomy, Solvency II ORSA

After Brexit, UK situation is diverging on multiples issues:

- TCFD regulation of Environmental (E)
- Discussion paper 21/4 sustainability disclosure requirements (SDR) and investment labels
- New climate reporting obligations for pensions
- By 2025, UK banks and insurers will be required by the Prudential Regulation Authority (PRA) to provide financial disclosers relating to climate risk.

Outside Europe the following regulations are impacting the ESG characteristics of funds. This is due to the Requirements imposed by National Competent Authorities for funds distributed and sold in their respective countries. As an example, Hong Kong released the "code of unit trust & mutual funds and changes to the fund manager code of conduct for ESG disclosure". Furthermore, Australia built is own regulatory system around the ESG topic which has stringent requirements and envisages different controls to avoid greenwashing.

Considering this, it is important to include the view of Armstrong and Green (2012) research towards policies for enforcing companies to adopt socially responsible behaviors. According to the authors it is not enough to establish a set of rules to guide firms towards the adoption of more Socially Responsible behaviors, there is the necessity to support proposed changes with practical evidence about the impact on the increase of total welfare and to provide arguments supporting the benefits generated by any reduction in freedom. Including Environmental, Social and Governmental topics in the scope of the judgement, to the authors seems that subsidized actions towards more responsible behaviors are limiting the free expression of needs by the consumers and limiting the effort of firms to satisfy them. As it will be discussed in the following chapters, a continuous request for larger data disclosure might imply huge expenditure for firms limiting their ability to compete on the market. Moreover, firms not able to fulfill the request for more information, given the high costs and regulatory complexity, might face an excessive punishment by the market in terms of decreasing stock trades.

The effort of regulators should not be focused on the suppression of free market activity which effect will be detrimental for the total welfare of society. On the contrary, the creation of new policies should be focused on promoting the adoption of voluntary ESG activities and on limiting the adoption of irresponsible behaviors. On one hand, voluntary actions performed by firms can generate revenue opportunities and providing additional benefits to customers and other stakeholders. On the other hand, the limitation of decisions that are unethical in terms of managers' personal values or with inferior in terms of outcomes considering all parties will lead to higher likelihood of owners and managers pursuing long-term profit maximization. With this goal, Stakeholder accounting (i.e. inclusion of the impact of decisions upon stakeholders) and management support seem crucial for ESG voluntary action to generate positive impact. The currently developing regulatory policies is strongly pushing towards the inclusion of both first and second pillar into the decision processes of the companies however, the increased complexity of regulation is impeding its adoption.

2.5. EUROSIF Framework

The search for consistency in the disclosure requirements can have a positive impact on the ESG evaluation, however, there is still the need for companies to create new ESG datasets. Moreover, new methods to evaluate the validity of the ESG data disclosed should be developed, as well as the ability to react to changes in the environment rapidly. Some of this data points already exist, but it is often difficult to trace them, as the number of private and public datasets collected by different institutions is growing.

2.5.1. Introduction to EUROSIF

Eurosif is the leading pan-European association promoting Sustainable Finance at European level. Eurosif is a partnership comprised of Europe-based national Sustainable Investment Fora (SIFs). Each of the SIFs has a broad and diverse membership including asset managers, institutional investors, index providers and ESG research & analytics providers with aggregate assets under management (AuM) amounting to over EUR 20 trillion.

Eurosif's activities involve contributing substantively to public policy and conducting research that enables a better understanding of sustainable investment and the obstacles encountered by sustainability-oriented investors. Eurosif and its members are committed to the growth and integrity of meaningful sustainable investment flows and support the ambition of European policymakers in enabling a fully transparent sustainable investment market through appropriate and well-designed regulation and industry practice.

The mission is to promote sustainable development through financial markets by supporting the financing through private and public capital of investments that make a measurable contribution to the sustainable development goals set by the United Nations, the European Union and other European countries.

Eurosif is also a founding member of the Global Sustainable Investment Alliance (GSIA), the alliance of the largest SIFs around the world. The main activities of Eurosif are public policy, research and creating platforms for nurturing sustainable investing best practices.

The current practice of how SI market reports are compiled as well as the ongoing regulatory efforts highlight the need for a new classification scheme for sustainable investments that has the notion of transition at the core of its logic. As such, this new scheme needs to illustrate the potential of different investment products and their investment approaches to create direct and indirect positive impacts and contribute to a sustainable transition. Eurosif identifies 5 Responsible Investment approach categories. These approaches are then clustered five dimensions: (i) general characteristics, (ii) pre-investment strategies, (iii) post-investment strategies, (iv) performance measurement and (v) documentation.

2.5.2. General Characteristics

The logic behind the classification put in place by EUROSIF is the ambition level of the ESG strategy adopted by Funds. This ambition level is defined by the extension in which the fund aims to support the transition towards a higher sustainable economy as defined by the SDGs or other frameworks. The transition might refer to different levels such as concrete economic activities, at company level, at portfolio level, at sector level or at the whole economy level. Investment Funds with a clear transition goal are defined as carrying high ambition while ones having no clear targets for the sustainability path are categorized as with low ambition. Once the ambition level is set a clear main objective has to be disclosed in the prospectus of the Fund. The objectives which have been seen in market practice to fall in one of the following categories:

- Adherence to Norms or Personal Values
- Contribution in the fight against real challenges in the social or ecological context
- Improvement of financial performances and reduction of the risks in the investment

As last characteristic, funds might include financial and impact materiality. As for financial materiality funds must disclose information necessary for the understanding by investors of the impact of Sustainability on financial performances of the investment. Impact materiality refers to a disclosure on how the investees are impacting the Sustainability matter.

2.5.3. Pre-Investment Strategies

Exclusions

An approach that excludes specific investments or classes of investment from the investible universe such as companies, sectors, or countries, if involved in certain activities based on specific criteria. Typically, an exclusion strategy is driven by ethical or financial risk considerations. Common excluded industries include weapons, pornography, tobacco and animal testing. Exclusions can be applied at individual fund or mandate level, but increasingly also at asset manager or asset owner level, across the entire product range of assets. This approach is also referred to as ethical-based exclusions, as exclusion criteria are typically based on the choices made by asset managers or asset owners.

Norms-based screenings

Screening of investments according to investee compliance with international standards and norms. This approach involves the screening of investments based on international norms or combinations of norms covering ESG factors. International norms on ESG are those defined by international bodies such as the United Nations (UN). Some examples of Norms followed by the investees are:

- UN treaties
- Security Council sanctions

- UN Global Compact (UNGC)
- Universal Declaration of Human Rights
- OECD guidelines (PRI 2022)

ESG integration

The explicit inclusion by asset managers of ESG risks and opportunities into traditional financial analysis and investment decisions based on a systematic process and appropriate research sources. This type covers explicit consideration of ESG factors alongside financial factors in the mainstream analysis of investments. The integration process focuses on the potential impact of ESG issues on company financials (positive and negative), which in turn may affect the investment decision.

Environmental issues concern any aspect of a company's activity that affects the environment in a positive or negative manner. Examples include greenhouse gas emissions, renewable energy, energy efficiency, resource depletion, chemical pollution, waste management, water management, impact on biodiversity.

Social issues vary from community-related aspects, such as the improvement of health and education, to workplace-related issues, including the adherence to human rights, non-discrimination and stakeholder engagement. Examples include labor standards (along the supply chain, child labor, forced labor), relations with local communities, talent management, controversial business practices (weapons, conflict zones), health standards, freedom of association, etc.

Governance issues concern the quality of a company's management, culture, risk profile and other characteristics. It includes the board accountability and their dedication towards, and strategic management of, social and environmental performance. Furthermore, it emphasizes principles, such as transparent reporting and the realization of management tasks in a manner that is essentially free of abuse and corruption. Examples include corporate governance issues (executive remuneration, shareholder rights, board structure), bribery, corruption, stakeholder dialogue, lobbying activities, etc.

In its narrowest understanding, ESG integration is defined as a strategy that explicitly and systematically integrates considerations of ESG risks and opportunities into traditional financial analyses. A specific investee or a group of investees (e.g., companies, projects) is selected based on its positive ESG or impact performance (e.g., ESG/SDG ratings) relative to peers. This with the aim of increasing disclosure, improving practices on an ESG issue, or changing a sustainability outcome. An industry (Best-in-Class) would be selected or weighted based on sustainability criteria

Best-in-Class/Best-in-Universe/Best-in-Progress

An approach where leading or best-performing investments on impact metrics or ESG ones within a universe, category, or class are selected or weighted based on ESG criteria. This class of approaches involves the selection or weighting of the different ESG metrics and datapoints in order to select the best performing or most improving investees or assets. As identified by this ESG analysis, the Portfolio Managers might choose within a defined investment universe (Best-in-Universe), a defined Industry (Best-in-Class) or a defines pathway to improved sustainability metrics (Best-in-Progress). A possible extension of these approaches that has been seen on the market is the inclusion of selection based on best future plans backed by science for the transition.

Sustainability themed

Investment in themes or assets linked to the development of sustainability. Thematic funds focus on specific or multiple issues related to ESG. Sustainability themed investments inherently contribute to addressing social and/or environmental challenges such as climate change, eco-efficiency and health. Funds are required to have an ESG analysis or screen of investments in order to be counted in this approach. Investees are selected based on themes that are linked to ESG issues or ecological or social outcomes such as climate change, sustainable agriculture, eco-efficiency, green buildings, gender equality, health, and more. Definitions of Eurosif, PRI and the GSIA focus on the positive contribution that investees have on the identified sustainability themes.

2.5.4. Post-Investment Strategies

Engagement & Voting

Engagement activities and active ownership through voting of shares and engagement with companies on ESG matters. This is a long-term process, seeking to influence behaviors or increase disclosure. Engagement and voting on corporate governance are necessary but not sufficient to be counted in this strategy.

On one hand, according to Eurosif whitepaper, engagement can be defined as a long-term process (Eurosif 2021b) to influence behavior of current (or potential) investees through interactions with investors. This influence should be aimed either on the reduction of risks or the seeking of new opportunities entailed in the transition towards a more sustainable economy. On the other hand, voting is defined as a long-term process performed with the aimed of:

- Increasing disclosure
- Improving practices on an ESG issue
- Changing a sustainability outcome

Contrary to engagement, this second strategy is performed through e exercise of ownership rights in Board Meetings, filing of shareholders Proposals, and direct or indirect control over the portfolio of the investees.

Performance Measurement

This category is aimed at clarify upon which performance measurement the funds should be classified. These measurements can be based on violation of Norms or production of products and/or services. Furthermore, the Performance Measurement Systems for the ESG strategies adopted by the fund might include considerations regarding the double materiality and the avoidance of risks and the creation of new opportunities. Thus, the disclosed data might include the level of change in companies' activities achieved by the fund strategy and/or the changes on different environmental parameters. A difference can be seen in funds reporting their impact on investments (as investor impact) or the impact generated through the investment by the investee.

Documentation

The external reporting on the ESG strategy adopted by the fund is crucial for investors in order to grant recognition of the performed approaches (objectives, pre & post-investment approaches and performance achieved) and to explain possible impact on the financial performance of the fund.

2.5.5. Investment Categories

According to the adopted approaches and the level of ambition related to the transition, funds might be classified according to 5 investment categories:

- Exclusion-focused investment
- Basic ESG
- Advanced ESG
- Impact Aligned
- Impact Generating

While the first 2 categories do not entail the Sustainable Investment in their objectives, they still are worth to be mentioned given their use in the market at justification for an Article 8 classification according to SFDR.

Exclusion-focused investment

The funds adopting this strategy have as main objective the alignment of the portfolio to personal Norms and Values. This strategy does not encompass the inclusion of financial or impact materiality and they should not carry the ambition to support a sustainable transition. As pure exclusion strategy this is not classified as having a sustainable Investment Goal and include only pre-investment strategies (Norms-Based and Industry Exclusions). The performance measurements used by this strategy is usually violation based on norms or values also referred to as controversies scores.

Basic ESG

With the main objective of Sustainability Risk Mitigation, the funds adopting this strategy could not be defined as carrying a Sustainable Investment objective. Whilst the ambition is marginal, these funds support the transition towards a more sustainable economy.

This strategy encompasses the use of both Exclusions and Norm-Based Exclusions to mitigate the ESG Risks and include a basic ESG integration process with low sophistication in the Best-in-class/-universe/-progress approaches. The inclusion of the positive screening is done in order to include the financial materiality in the investment considerations. The level of commitment is still low in case there is a lack of data for the investees. ESG integration becomes binding if the norms-based exclusions made an action to be taken compulsory in order to be compliant and not to be excluded from the investee list.

This strategy includes basic fundamentals ESG KPIs or Ratings which are used to measure the financially material risks. The documentation is limited to the investment objective and the approaches adopted in the pre-investment phase and at least one ESG-KPI. The audit of an external entity is necessary.

Advanced ESG

Managing Risks and Opportunities associated with sustainability is the goal of the funds embracing this strategy. As first strategy which can be classified as carrying a sustainable Investment Objective, it also considers the double materiality as enhancing for the seeking of new opportunities. However, even thought the transition is part of the objective of the funds embracing this strategy, it also goes hand-in-hand with a consideration that is limited to risks and opportunities.

The approaches which are adopted by this strategy go beyond the pure Industry and Norms-Based Exclusions. Funds adopting this strategy apply more strict positive screening rules increasing the ambition of their ESG Integration approaches. Indeed, at this stage, ESG integrations becomes binding and include a portfolio screening against financially material ESG issues for all the securities. Alternatively, this strategy makes use of Bet-in-class/-Universe/-Progress strategies to drive the investment choice based on ESG issues that are financially material.

Differently from Basic ESG this strategy uses Voting and Engagement not only to lead towards a higher disclosure but also collecting more data to foster research and improve practices in the ESG domain. Furthermore, te collection and display of data is broadened including different ESG-KPIs and/or opt in for the disclosure of the PAIs and risk and opportunity relates Scores. For this, documentation becomes crucial for funds using this strategy: a clear documentation of the objectives and a detailed description of pre- and post-investment approaches together with the one of the engagement and voting should be disclosed. With this, the fund should issue period reports, often called “Impact Reports” in which the KPIs are reported and the state of the advancement in achieving the goal have to clarifies to investors.

Impact Investing

Impact Investments are investments made into companies, organizations, and funds with the intention to generate social and environmental impact alongside a financial return. Impact investments can be made in both emerging and developed markets. Those investments can target a range of returns from below to market rate, depending upon the circumstances. Investments are often project-specific, as the investor retains ownership of the asset and expects a positive financial return. Impact investment includes microfinance, community investing and social business/entrepreneurship funds. This category can be splitted into two different set of strategies: Impact Aligned and Impact Generating.

Impact Aligned

The first kid of strategy is impact Aligned. This implements both negative and positive screenings in order to tackle environmental or social issues. The base for norm based exclusions is often an international framework like the SDGs or the EU Taxonomy while for Industry Exclusions it covers companies generating a negative impact. While thi strategy adopts post-investment strategies like the advanced ESG one, this strategy enlarges their scope using them to generate a concrete impact through the investee. Since this strategy is aimed at investing in companies that are already generating a positive impact, Engagement and Voting gain an even higher relevance to lead the way to keep on generating positive impacts.

To document the impact generated, the performance measures used are referred to investees impact (also called "company impact") and impact generated at the fund level ("investor Impact"). This measurement should be backed by science and referred to the tackling of an environmental or social issue. This control should be done regularly and issuance of regular report on the impact is of paramount importance. This disclosure should be even more detailed of the one of funds adopting Advanced ESG strategy.

Impact Generating

This strategy aims at actively contributes to solving environmental and social challenges, thus, it includes the double materiality concept into account. In their investment process becomes crucial the capital allocation in order to lead investees to generate a real impact and lead the transition towards a more sustainable economy. The use of pre-investment strategies changes in this kind of funds. In particular, the investors excludes companies having a non-transformable business model. Thus, Investors aim to generate a real impact in companies that might not be the best performers and thus best-in-class/-universe-/progress and ESG Integration loose of importance to leave more space for Engagement and Voting. These two tools are even more important here to enforce transition and even through ownership force the management to change direction. In this case, if Engagement and Voting are performed correctly, they should be based on structured processes including possible escalation strategies having divestment as extreme step. For the performance measurement of this strategy, a clear pathway for the reduction of certain KPIs should be set in advance following international frameworks. Capital allocation and investment strategies should be measured to document the impact generation. During the engagement and voting processes, the company should be held accountable for the transition is putting in place against some social and environmental targets. The funds should issue in the prospectus's sections detailing pre and post investment strategies adopted in the process.

2.6. ESG Indexes

To develop our benchmarking analysis, we will adopt some of the ESG indexes. The international mainstream ESG indexes systems are:

- The Dow Jones Sustainability Indexes (DJSI)
- Carbon Disclosure Project (CDP)
- Sustainalytics / Morningstar:
- MSCI ESG Index
- Sustainability Awards / S&P Global
- Bloomberg Gender Equality

Different researchers examined the performance of ESG indexes even comparing them with the respecting closes available conventional index. Mixed evidence is present regarding the superior performance of ESG indexes compared to their conventional counterparts. Notably, Dimson et al. (2020) tried to analyze the presence of ESG outperformance or underperformance, the result of the research found no evidence of both the phenomena. From their launch some of the ESG indexes observed have experienced neutral relative performances with the conventional counterparts (MSCI, FTSE4GOOD) while embedding higher level of risk.

3 Introduction to the IM Industry and UCITS Funds

In light of the outcomes of the developed Analysis of the state-of-the-art literature on the topic which we are presenting in the next section and building on the experience developed during our study internships, we focused the analysis on the ESG regulation impacts on the Fund Industry. In our work the performances and portfolio composition of Sub-funds in UCITS (I.e., Undertakings for Collective Investment in Transferable Securities also referred to as Mutual Funds) are examined in light of their respective classification in accordance with the SFDR Regulations (I.e., Regulation (EU) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector. Also referred to as Sustainable Finance Disclosure Regulation).

To present the topics of our research, the following sections will be organized as follows:

- Introduction to the Investment Management Industry
- Focus on available Fund structures
- UCITS funds and the Financial Products they provide to investors
- Sustainability Risk
- Examples of Risks' effects on firms

3.1. Introduction to the Investment Management Industry

Investment Management Firms invest their clients' money choosing the right selection of investment – from fast-growing, risky stocks to safe but slow-growing bonds. The main objective is to achieve a return that the client needs at a level of risk they are comfortable with. Firms operating in this industry take all the effort creating an investment portfolio for opening to their clients' new investment opportunities that wouldn't otherwise be available. Investment Management Firms work for all different types of clients: from wealthy individuals to companies, charities, major corporations, or trusts.

The Investment Management Industry goes through a long value chain that is composed mainly of three phases: Pre-investment (also called Front Office), Investment (also referred to as Middle Office) and Post-Investment (also called Back Office).

Firstly, the main activities performed in the Front Office are Research, Investment Decision and definition of the Timing. In this phase the investment decisions are taken based on macro/top-down views and/or bottom-up analysis and/or quantitative models. In this phase the Investment Manager should include as furtherly discussed later an evaluation of the Sustainability Risk embedded in the investment and might decide to take into consideration different ESG investment approaches to select the investee companies. Once formalized, the investment decision is communicated to the trading desk with potential specific time constraints and aspects. Checks that are included at this stage are the Investment Committee Role and the 4-eyes check.

Secondly, the Middle Office main activities are Pre-trade checks, trade implementation and the order sending to the broker. The Investment team is not directly involved in this stage of the process since it is focused mainly on the IT system, Risk and Compliance and Trade Implementation. This last activity is performed by contacting brokers either directly or through trading systems. Pre-trade checks and trading should be separated.

Lastly, the Back Office is responsible for the Booking of the trade, the NAV (I.e., Net Asset Value) Calculation and eventual Settlements and Reconciliations. The reconciliation between the Administrator and the trading system is performed typically together with the pre-trade checks. If there are no issues with the checks, the NAV can be published once the reconciliation is done.

Throughout this value chain the core and non-core activities present in Table 1.3 must be performed.

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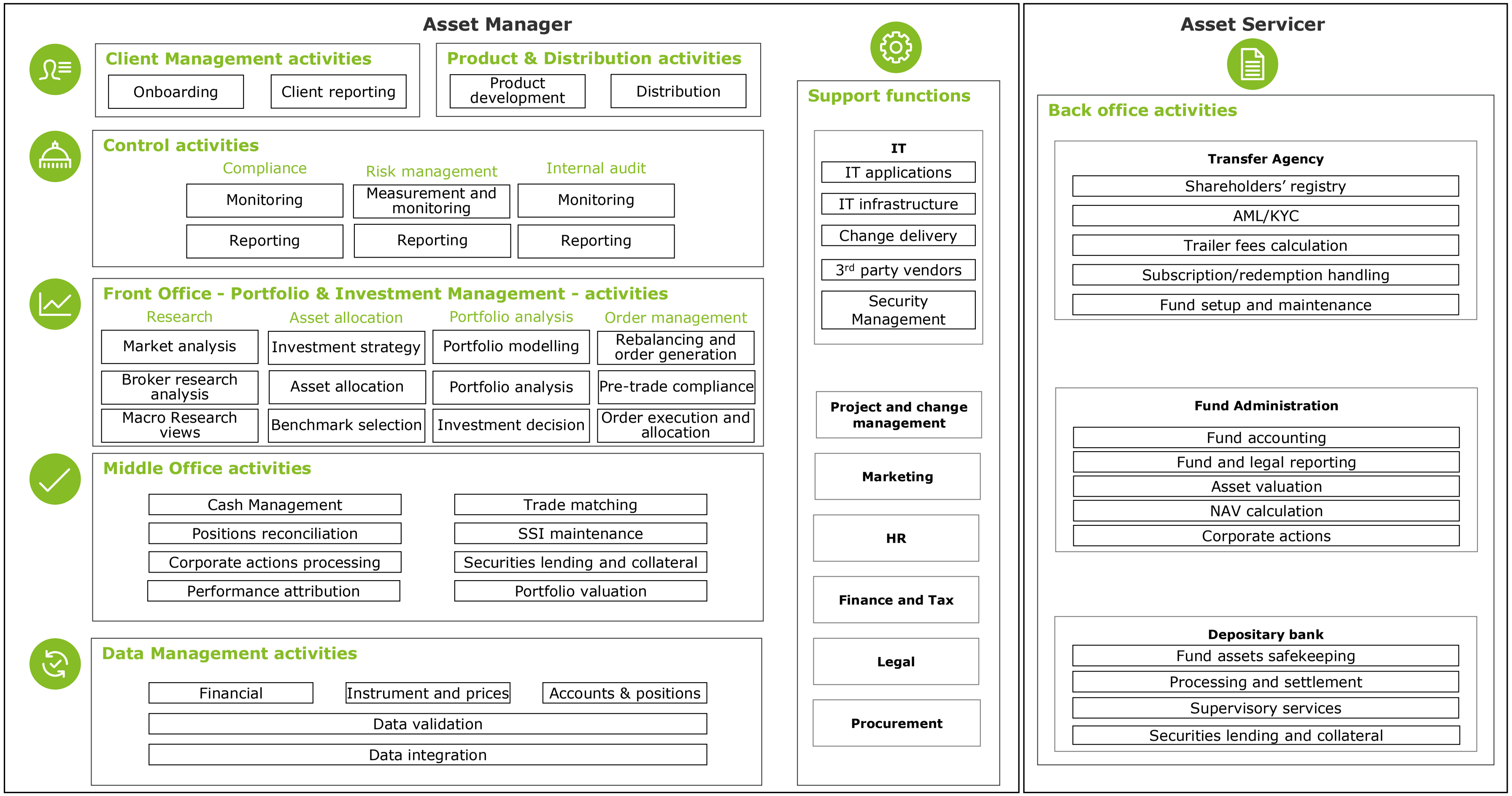
Table 3.3: Core and Non-Core activities in the IM Value Chain, Deloitte Research



Luxembourg has established itself as the second fund center worldwide for Investment Asset under Management. This is mainly due to different market factors that have been favorable for the development of the financial Industry sector. Within the enabling factors can be listed the vast range of fund structures, a favorable taxation regime, an easy cross-border registration, elevated speed to market, expertise centers and stability of the country. In particular, the applied VAT and subscription taxes are low, and the country has a wide range of double taxation treaties, moreover, the country benefit from one of among the lowest tax rate on the distribution of capital gains. Regarding cross-border registration a streamlined process is in place, and financial institutions operating in this country possess a wide experience and coverage in distribution countries. The time-to-market for financial product is low due to a timely regulatory approval for the launch of new funds. Furthermore, the presence of players in the whole value chain locally generates huge possibility in the labor market for knowledge sourcing. Lastly, the behavior of the regulator (I.e., CSSF) is pro-active and consistent and favors a strong banking infrastructure and consistent high credit ratings.

3.2. Focus on available fund structures

The availability of different Fund structures responding to the different needs of different investment funds and the ability to be a front-runner in the creation of innovative fund solutions would not be possible without the Luxembourgish Legal Framework for Funds. Undertakings for Collective Investment, in general, must be subject to three conditions. First, the savings for the collective Investment must be collected from the public; second, the savings collected must be used for the purpose of the collective investment and third the investment of the fund must be done in accordance with the principle of risk spreading. The main frameworks regulating UCIs present two main different legal forms that can be adopted by the funds: FCP (I.e., from the French Fonds Commun de Placement) and SICAV (I.e., from the French société d'investissement à capital variable). On the one hand, the first cited type of funds are funds without a legal personality and are managed by a Management Company. On the other hand, SICAV funds own a legal personality and are managed by shareholders and a Board of Directors. Both the legal structures presented might then develop as a UCITS or an AIF depending on various characteristics of their Investment Strategy which will make them subject to diverse legal requirements. In particular, UCIs can be developed as open-ended or closed-ended funds. The first structure is more typically adopted by Mutual Funds, which have been the focus of our analysis. The stages of the Fund Lifecycle can be summarized as follows: Product Design, Fund Raising, Investment, Holding and Development, Divestment. Although, the Investment-Holding-Divestment cycle is developed constantly through the life of the fund, this structure differs from the close-ended one due to the absence of Liquidation and Distribution and from the fact that Product Design and Fund raising are done only at Fund Launch.

Investment funds are a financial product which pools the money from different investors and is managed professionally to grant the highest possible return for the investors. This makes of them a financial investment which embeds different Advantages and Disadvantages. On the positive side, to be noted, is Professional Management, the increased possibility for diversification, economies of scale, Liquidity, Simplicity and Regulation. Nonetheless, the costs carried by an investment in a fund a double taxation should be considered when investing in these financial instruments.

To evaluate the return on Investments in Funds the evolution over time of their NAV would be needed. This represents the fund’s per share market value and its calculation is the responsibility of the fund accounting department. It is derived by dividing the total value of securities and cash minus any liabilities, by the number of shares outstanding. The NAV calculation is computed at the end of each trading day based on the portfolio's securities. The process of the computation of the NAV is oversighted by different regulation requirements given its importance and comprises possible accounting adjustments, control of the NAV and Reporting.

The calculation of the NAV of a UCI is done on two sides: on the asset and on the liabilities side. For the value of Assets is taken the value of the investment Portfolio smoothed for the receivables and upcoming income/subscriptions/tax reclaims. The Liabilities sides is taken from the Registrar which keeps into account the negative value of investments (Equities, Bonds and derivatives), and the negative market value of cash positions and is smoothed for the Payables and fees/ redemptions/ credit interests etc. The Valuation duty lies in the Management Company who is required to establish a appropriate procedures which are consistent with the constitutional document to ensure the proper and accurate valuation of the assets and liabilities of the UCI. Additionally, the ManCos are required to ensure that fair, correct and transparent pricing models and valuation systems are used for the UCIs they manage. 2010 Law states that unless otherwise provided for in the constitutional documents of the UCI, the valuation of the assets must be based, in the case of officially listed securities, on the last known stock exchange price, unless such price is not representative. For securities not listed and for securities which are listed, but for which the latest price is not representative, the valuation must be based on the probable realization value, estimated with care and in good faith. ManCos often do not use the latest available market prices due to operational constraints. This increases the risk of market timing, (I.e. investors may be able to estimate the evolution of an NAV prior to its calculation). Other Principles behind the valuation of the NAV the ManCo is subject to are: the valuation principles must be outlined in the UCIs prospectus; OTC derivatives or structured prices are regularly valuated by calculation of the value via a model approach. a reliable and verifiable valuation is understood to refer to a valuation corresponding to the "fair value": "Fair value" is understood as the price that would be received when selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, hence it should not rely only on the market quotations by the counterparty. Assets for which no current value or no fair value is available must be staled (I.e., valuated with the last available price): Asset valuated "stale" must be monitored regularly in order to check if an updated value has become available, if the asset can be sold or if the asset can be written off as being worthless. For UCITS the NAV must be calculated at least twice a month. The role of the depositary is to ensure that the value of the shares or units is calculated in accordance with the applicable law and the constitutional document of the UCI.

As previously introduced, funds' investments are subject to certain fees that make a fund investment a more expensive one. The most common fees to which paid out of the funds' AuM are Audit Fees, Custodian Fees, transaction Fees, Administrative Fees, Advisory Fees and distribution and service fees. These fees often follow one of the following payment schemes: fixed fee, Percentage on the NAV calculated by the fund accounting department or a combination of the two. For being compensated for its expertise and return, the Asset Managers charges regular and exceptional fees: Management Fees and Performance Fees. The first are based on a percentage of the AuM and is levied regularly by the manager. The latter is an exceptional payment made to the fund manager for its ability to generate positive returns, it is regulated by the ESMA (I.e., European Securities Market Authority) and should follow one of the two following payment schemes: the high-water mark or the hurdle rate.

The regulation on funds industry can be dated back to 1988 with the first publication of the UCITS Directive 85/611/EEC and have seen its major milestones with the publication UCITS III/IV/V and AIFMD Regulation aimed a regulating previously lightly regulated Alternative investment fund sector. The current regulation enlarged over time until the recently proposed UCITS VI regulation amendments. However, these regulations are not the only ones affecting the Fund Industry. Other Regulations are impacting the Investment Management sector: AML/CFT (I.e., anti-money laundering and counter terrorism financing), GDPR (I.e., General Data Protection Regulation), FATCA (I.e., Foreign account Tax Compliance Act), CRS (I.e., Common Reporting Standards), EMIR (I.e., European Market Infrastructure Regulation), MiFID II (I.e., Market and Financial Instruments Directive) and MiFIR (Regulation on markets and financial Instruments), PRIIPS I.e., packaged retail and insurance-based investment product Regulation), SFTR (I.e., Securities Financing Transaction Regulation), and the already analyzed SFDR.

Different players are involved in the Investment Management Industry which provide essential contributions and, for this, in different cases need to be remunerated. These parties are the following:

- Fund Promoter: Legal Entity launching the fund and registering it at the NCAs;
- Management Company: as previously mentioned co-manages the UCI and defines the valuation policy. It can be in-house if created by initiative of the fund Promoter, 3rd Party ManCo, or Self-Managed if its duties are performed within the Fund which as a SICAV structure;
- Portfolio Manager: implements the investment strategy for the fund and can also be supported by an Investment Advisor;
- Fund Administrator: performs the non-core activities necessary for running and UCI, it might be entrusted with the calculation of the NAV and TNA of an UCI on a recurring basis;

- Custodian / Depository Bank: It is the entity delegated to the safeguard of the Assets of the UCI. If it assumes also the role of Depositary bank it performs the day-to-day administration of the fund, oversight, cash monitoring, and safekeeping duties;
- Distributor: is the interface between UCI and the investors;
- Transfer Agent: It is the entity responsible for the Transaction Management, it performs Registrar and Record Keeping, is responsible for AML/KYC checks (I.e., Anti-Money-Laundering/Know-your-customer to avoid financing of terrorism), and calculates the Trailer Fees;
- Tax and Legal Advisor: ensure the correct payment of taxes for the Fund and support the legal compliance of the fund;
- External Auditors: ensure the compliance with the GAAP and are responsible for the reporting to the NCA (I.e., National Competent Authority, CSSF for the Luxemburgish market) in case of a material NAV error. Material errors are defined according to the following thresholds: 0,25% error in the NAV for Money Market funds, 0,5% for funds investing in Fixed Income, and 1% for funds investing in Equity;
- Regulator: Oversight Role

3.2.1. UCITS funds and the Financial Products they provide to investors

UCITS funds which follow a SICAV structure, in order to provide investment opportunities which are able to fit different investors' preferences are subdivided into Sub-funds, also referred to as Compartments, which purse different investment objectives and strategies. These strategies are usually defined and implemented by the Portfolio Manager, a role that can be also undertaken by an Investment Advisor. Sample adopted strategies might be: Growth and Value strategies, Pro-cyclic and anti-cyclic, Dividend focused, Index strategies both Active and Passive, and Securities

Oriented. Another important characteristic of an investment fund strategy is the orientation. Indeed, a fund might be oriented to invest in specific (i) Asset Classes (E.g., Equities, Bonds etc.), Markets (E.g., Europe, LatAm, Africa etc.), and/or specific Industries.

However, these strategies would not be worth without a proper Onboarding of Investors. The marketing Activity for the fund is developed by Distributors which make available to Investors in areas determined by the Fund Manager (I.e., the UCITS) the Subscriptions to several different financial products having different characteristics in terms of fees and minimum subscription amount. These financial products offered by Mutual Funds are called Share Classes and varies from fund to fund. Every share class carries the same investment objective and invest in the same portfolio. Nonetheless, their fee structures might differ impacting their performance. Thus, in order to develop an analysis of Sub-funds' performances it is common to observe the consideration of the ones achieved by the Reference Share Class (I.e., the share class with the highest AuM within the compartment). This approach was also taken by our analysis.

The A share class is the most common across the Investment Funds; at the moment of the purchase, it involves the payment upfront of a front-end load also referred to as Subscription Fee. This Fee makes the Subscription price per share superior to the market value of shares at the moment o the Subscription. This might make an investment in this class perceived as costly given the usual amount which varies between 2% to 5,75% depending on the value purchased, however, if the share is held for longer period, it can be one of the less expensive share classes. Opposite to A share, B share class subscription in a Sub-fund carries a back-end load. The amount of the fee the investors have to pay at the sale of the share declines over time, eventually reaching zero. The shares belonging to this Share Class usually carry the possibility to be converted to A share Class shares over time. The third most common option are the C-share class shares which annually are charging the investor a fee all through the investment lifecycle. Usually, C-shares, if sold within one year from the purchase, might generate a contingent sales charge. Another group of share classes are the so called: "Institutional Share Classes". These are often present in mutual funds with the denominations I, R, N, X, and Y. these share classes are available only to Institutional Investors and High Net Worth Individuals able to afford 7-figures Initial Subscriptions. Institutional shares are always the ones carrying the lowest fees given the bargaining power of the investors. Thus, this class of shares are the ones granting the best returns. Each share class of a compartment is identified by an International Securities Identification Number (ISIN) which is a standard 12-digit code used for the identification of securities in cross-borders transactions.

One of the main focuses of the regulators is the risk management process for the UCI and its ManCo (I.e., Management Company), those should ensure that the risk profile of the UCI corresponds to the objective of the UCI and to the risk appetite of the investors. For that reason, UCI should have in place qualitative and quantitative Risk limits and an adequate Risk Management system. This system should be managed by a hierarchically separated risk Management Function which monitors the compliance with the risks limit, would be able to assess the level of risk associated with each investment and implements the risk management policy. This policy should be maintained and document appropriately the risk management processes. Furthermore, a UCI/its ManCo should conduct periodic back testing in order to assess the validity of Risk measurement arrangements and regularly disclose risk related information to the investors and to the CSSF (I.e., Commission de Surveillance du Secteur Financiere, Luxembourgish national competent authority for the Financial Market). This is of peak importance especially in light of the different risks associated with an investment into a UCITS Fund. As the other investment instruments, investment in UCITS funds are subject to Systemic Risk. This risk associated to investment is composed of two components Idiosyncratic risk which is isolated, organization specific and resolvable, and Systemic Risk which spread across heavily interconnected and deeply diversified financial products and services. The sources of these risks comprise and are not limited to Operational Risk, Reputational Risk, Market Risk, Counterparty Risk, Delegation Risk and Sustainability Risks. These Risk can be defined as:

- Operational Risk: The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. It includes human error, fraud and malice, failures of information systems, problems related to personnel management, commercial disputes, accidents, fires, floods...
- Reputational Risk: Reputation is an intangible asset. It is difficult to measure and quantify. Often it takes years to build a reputation and minutes to destroy it. It is the potential that negative publicity regarding an institution's business practices, whether true or not, will cause a decline in the customer base, costly litigation or revenue reductions
- Market Risk: Market risk refers to the risk that an investment may face due to fluctuations in the market. The risk is that the investment's value will decrease. Market risk refers to the overall economy or securities markets, while specific risk involves only a part.
- Counterparty Risk: The likelihood or probability that one of those involved in a transaction might default on its contractual obligation. Counterparty risk can exist in credit, investment, and trading transactions.
- Delegation Risk: Tasks can be delegated, responsibilities cannot. Even though delegation of certain tasks is permitted the delegating party remains

responsible to the outside. On the inside it may require compensation from the delegate in error depending on the contractual arrangement.

- Sustainability Risk: a risk which is analyzed in depth in the next section

3.2.2. Sustainability Risk

Sustainability Risk deserve particular attention in our research, being one of the main risk differentiators held by the different funds. According to Deloitte Research, Sustainability Risks are composed mainly of three categories:

- ESG risks associated with Environmental, Social and Governance factors
- Climate Risks classified as transition and physical
- Greenwashing & Operational Risks

Our analysis investigates the specific drivers influencing company risk profile within each of this Risk categories.

Given the high level of diversity across the ESG Ratings evaluation methods, the analysis will be conducted starting from a regulatory standpoint. To define ESG Factors, our research is built around the main current regulation on ESG disclosure, the above-mentioned Sustainable Financial Disclosure Regulation (SFDR, March 2021). This regulation stated: “Sustainability risk means an environmental, social or governance event or condition that, if it occurs, could cause an actual or a potential material negative impact on the value of the investment”. Thus, ESG factors can affect an investment portfolio’s risk profile and its real return, by influencing both tail-risk and long-term profitability, which will be analyzed in the following chapters.

SFDR highlights, among the others, the main ESG risk drivers for Firms present in Table 1.4.

Table 1.4 ESG Risk Drivers, SFDR

Environmental	**Social**	**Governance**
Climate Mitigation	Labor standards	Tax honesty
Adjustment to Climate	Employment safety	Executives remuneration
Protection of Biodiversity	Health protection	Anti-corruption measures
Sustainable use of water	Appropriate remuneration	Codes of conduct
Recycling and avoidance of waste	Working conditions	Facilitation of whistle blowing
Reduction of pollution	Diversity	Employee rights guarantees
Sustainable land use	Reducing Inequalities	Information Disclosure

When it comes to ESG factors the environmental risk is the one that receive the most attention, however, social risks can have a growing relevancy for investors in the long run. Social factors are financially material now. Firms taking into consideration proactively Social Risks are experiencing higher financial resilience. Putting in place procedures for health and safety can reduce the risk of the arousal of costly lawsuit (E.g. Duncan et al., 2021). As mapped in S&P Global ESG Risk Atlas from 2019, Social Risk embodies a large share of the embedded ESG risk in different industries with peaks that can reach over 83% of the total ESG risk. Some levers to reduce social risk are more easily manageable, I.e. having a more diverse workforce and/or having more diverse content can be some of the fastest and controllable levers company can use for reducing their risk scores. Nonetheless, companies must face more and more the war for talent: a spread struggle to attract and retain the right employees is present especially in younger generations more sensible to the ESG topic and company purpose.

The second category of risks, Climate Risks, include Physical Risk and Transition Risk (Network for Greening the Financial System NGFS and International energy Agency IEA, 2020). Researchers develop a classification for Physical Risk based on the extent of impact of these risks, acute and chronic. On one hand, Acute Physical Risk is referred to as Financial Losses due to extreme weather events and climate disasters like flooding, sea level rise, wildfires, droughts and storms and have an impact on wide geographical areas. On the other hand, chronic risk is associated with temperature increase and has been demonstrated to have effect on the economic system as a whole. The impact of these risks has been studied in 4 different reference scenarios by the Intergovernmental Panel on Climate Change (IPCC). These scenarios called Representative Concentration Pathways (RCP) represent different possible evolution of the Green-House-Gasses (hereafter GHG) concentration profiles with the corresponding effect on 'Radiative Forcing'. IPCC Reports show how these risks tend to have higher impacts on companies with physical assets located in more vulnerable area and climate change hotspots. The second category of Climate Risks is Transition Risk; it is defined as a financial risk associated with the transition to a low carbon economy. It is mainly driven by policy changes, shifts in market preferences, impacts of changes in firms' reputation, norms and technology. These sources of risk have become one of the most relevant in shaping the investment preferences and ultimately firms' value on the market. Empirical evidence depicts a stronger exposure to this category of risks of companies with Carbon Intensive Assets and with a higher level of GHGs emission and practices that are contrary to the protection of the environment.

IPCC developed socio-economic development scenarios (Shared Socioeconomic Pathways, SSP) and various adaptation and mitigation strategies for each RCP.

Physical Risk and Transition Risk do not work always in the same direction and thus, their effects are challenging to be included in the evaluation of a company. In short term physical risk impact could outweigh in magnitude the one of transition risk. In 2020 alone, physical damage manifested through severe storms accounted for around 220 billion dollars damages. However, transition risks can cost trillions over the long-run manifesting in possible reduction in revenues, an increase in operating costs (also due to carbon prices increase) and greater regulatory burden (Edelman et al., 2021). Companies which embrace commitment for Carbon Neutrality transition as the Paris Agreement while reducing their exposure to certain types of Physical Risk are more exposed to Transition Risk. (This might be one of the reasons holding back investment towards carbon neutral technologies and transitioning companies).

The last category of Sustainability Risk is Operational & Greenwashing risk. Greenwashing has been defined by NGFS and IEA as the practice of gaining an unfair competitive advantage by marketing a financial product as environmentally friendly, when in fact basic environmental standards have not been met. This represents a form of reputational risk and a liquidity risk for the issuing company which can be sanctioned according to the regulations issued by market regulatory bodies also called National Competent Authorities (NCAs). Other types of risks that are included in this category are: Perceived Greenwashing, not meeting internal and external expectations regarding ESG projects, ESG product mistakes and failure in ESG-related governance due to lack of appropriate policies and procedures to assign sustainability responsibilities.

3.2.3. Examples of Risks' effects on firms

The previously analyzed risks have different impacts on firms on the market: on one side they might affect the ability to generate positive Cash Flows by impacting firms' operations, on the other an indirect impact is seen on firms supply chain and financial market channels. However, negative impacts of these risks are not only a "Direct" financial materiality for the company but also a "non-financial materiality" on the environment, social or governance matters. One of the main channels, identified by literature, through which the "Direct" financial materiality affects firms performances is the variation of the cost of capital.

COP26 (UN Climate Change Conference 2021) brought with it the pledge by the Net-Zero Banking Alliance to transition GHG emission from their lending portfolio to align with the pathways to reach by 2050 net-zero emissions. This Alliance represents nearly a hundred banks and accounts for nearly 40% of all global banking assets. The same conference brought also to the commitment be the Net-Zero Asset Manager Initiative to transform their investment portfolio to reach the same goal. These commitments, necessary to limit the global warming to 1.5^{o}C, will affect how banks and asset managers invest and lend money to carbon intensive firms and green economy. According to a CDP report, most banks have not yet measured the impact of this commitments on their financing portfolios likely resulting in an underestimation by most banks of their exposure to climate related risks (Joseph Power et al., 2020). However, this creates huge opportunities for banks in facilitating transition towards carbon-neutral activities.

"Integrating climate risk management could be an enormous undertaking for most banks, but is a necessary step towards a carbon-neutral future"

Since climate-related risk is affecting almost all stages of the credit and investment lifecycle banks and asset managers are starting to embed climate-related considerations into the credit management and investment processes at every stage. To have a deeper understanding of actions that can be taken at every credit lifecycle stage, we listed them in Table 1.5 and research upon pursuable actions to be considered.

Table 1.5 Sustainabilty Risk and Credit Lifecycle

	Strategy and Products	**Prospecting and origination**	**Underwriting and approval**	**Collateral Management and hedging**	**Monitoring and Portfolio Management**	**Default Management**	**Reporting and Disclosure**
OVERVIEW	Determine business strategy. Develop products and programs Define risk appetite and limits.	Define target clients and perform due diligence. Prepare credit applications.	Perform credit review. Assign risk rating. Prepare and approve credit proposals	Optimize use of collaterals across the portfolio. Perform risk transfer and hedging	Monitor client and portfolio performance. Estimate parameters and capital/reserves. Perform stress testing	Manage defaults and problem assets. Identify losses and recommend charge-offs. Manage Recoveries	Report credit risk processes and outcomes to various stakeholders
CLIMATE CONSIDE-RATIONS	Establish green-lending products and product portfolio targets	Target climate-friendly sectors and institutions	Consider ESG/climate factors in underwriting and rating	Work with third parties to enable transfer of climate risk	Assess impact of climate on PD and stress management	Assess impact of climate on loss realization	TCFD. Anticipate regulatory requirements

Banks and debt capital lenders should embed these considerations into their credit risk framework, in order to do that, banks should develop a taxonomy and a map of climate risk and how they propagate and translate into business risks. Transition and Physical risk according to Edelman et al. Propagates through transmission channels both on Microeconomic (financial impact on individual households, business disruption, property damage and liabilities) and Macroeconomic (unemployment, GDP changes, capital depreciation) streams and results in Financial (credit, market, liquidity and operational) and non-financial risk (reputational, strategic, physical security, Models and compliance and regulatory) for the lenders.

In the Prospecting and Origination phase banks are enlarging the scope of the due diligence of their clients including the request on new types of data like energy use attributed to new business, data on emission per unit of revenue and information regarding the supply chain. Moreover, they are asking to enhance due diligence on transaction involving certain “sin-sectors” and limit the financing to certain kind of businesses harming biodiversity and exacerbating climate change.

However, banks and asset managers should engage extensively in investment encompassing transition of heavy polluters out of fossil fuels and prioritize deals that reduce climate risk or focus on the creation of new green technology opportunities. To act in this direction, borrowers are moving towards the implementation of climate risk mitigation strategies in the rating and underwriting process. To do that, given the infancy of the ESG ratings sector, lenders and asset managers are creating borrower specific and proprietary credit ratings encompassing ESG factors. However, this is a process needing specific technical knowledge of climate patterns and environmental trends and its adoption, as would be further analyzed in the ESG Strategies section, varies substantially across financial institutions. The banks and asset managers should gather data regarding AS-IS ESG performance and assess the clients’ physical and transition risks, their resiliency to climate change and their plans to mitigate the threats coming from climate change in their business model. The outcome of this process is the increased orientation of banks to create shadow rating system that reports on the risk for companies for climate-related default alongside typical default risk measures and adopting mitigation actions when there is a strong differential between the two.

Lenders and asset managers in order to fulfill the Legal Requirements can implement top-down and bottom-up methodologies to assess the quantitative impact of climate risk on default probabilities and expected losses. On one hand, top-down approaches start with the evaluation on the financial statements of the effects of different climate scenarios and then evaluate what this could mean on the risk of default of the borrowers. On the other hand, the bottom-up approach combines forecasts on energy costs, shifting market preferences, borrower's characteristics to develop scenario adapted financial statements at a financial counterparty level. The transmission channel of climate risks is determining which KPIs to consider in the evaluation of risks: probability of default (PD), loss-given-default (LGD) and exposure-at-default (EAD) (Edelman et al., 2021).

There are many methodologies being developed on the market to assess borrowers' creditworthiness considering ESG related measures. Some of them include methodologies considering an analysis on how markets are evaluating companies based on their exposure to transition risk which can indicate how investors foresee firms' cash flows and risk of default. Another more common option is Merton's (1974) distance-to-default model which can be modified to consider climate-related default risk in the treatment of equity as a call option. Scenario impacts can test transition risk drivers and different pathways for policy development in parallel and the linkages in between the two. This, while also analyzing possible impacts on the equity risk premium happening on the market.

After carrying out the global scenario analyses, borrowers and investors can wind up the analyses developing more regionalized models for the climate-related risks and start embedding these factors within PD, LDG and EAD. Nonetheless, this is not an easy task since the lenders should consider in their models also secondary and tertiary impact of climate change and their impact on markets external to the one of the analyses. As a matter of facts, increase of temperature of an external market's region might generate migration impacting different sectors in the receiving market.

Drilling down with the analyses on banking sector of portfolio exposure to climate risks, both wholesale and retail banks are exposed to climate-related risk. Wholesale sector is more exposed to transition risk given the nature of their clients which include governments, companies and Public Administration ventures which should act strongly to reduce carbon emissions. These counterparties are also exposed to changes in customer preferences and possible changes in policy that might lead to higher climate-related risk exposure and its propagation through the financing value chain. In particular, the intensity of exposure to transition risk of this sector is dependent on the level of carbon intensity of players working in the industry, insurance availability and need for more energy efficiency. In evaluating its own exposure to climate-related risk a wholesale bank should adopt a sectoral approach since different sectors suffer different level of climate-related risk. Even if climate-related hazards might be highly correlated their classification across different ESG dataset might be very different, thus when assessing risks, banks should be able to align risks for effect to create insurance policies based on kind of damage generated and not on the sources.

Banks are likely to conduct an analysis of the climate risk based on both internal and external sources of data; while they should develop internally climate related capabilities for the development of stress testing, credit risk evaluation and investor relations practices they often rely on external providers with higher experience in validating climate models. These external providers should be carefully analyzed by the banks before the onboarding, in particular in relation to the validity of the dataset used and the process for evaluating ESG performances.

ESG ratings providers are helpful for banks to understand the credit ratings for different players in the market especially evaluating the impact of their ESG scores on credit quality.

4 Literature Review

Most of the literature on the topic states that superior ESG performances could imply also superior performances of portfolios ESG-driven if compared to low ESG ones. To analyze this phenomenon, the following section is aimed at depicting comprehensively the literature on this causal relationship between ESG scores, portfolio returns and long terms financial value. To provide a structured vision on the topic, we analyzed quantitative studies focusing on long term value impact measurement of ESG ratings. We found the presence of different typologies of research on the subject: portfolio or index-based studies, multivariate regression studies and event studies.

Portfolio or index-based studies consist in building different portfolios based on a plethora of various indicators for Corporate Social Responsibility. Most of the research find a positive correlation between CSR activities and financial performance exploit environmental indicators. Studies relying on multivariate regression show limited and conflicting support to a positive relation between environmental and stock market performances. The most compelling evidence of a link between the performances in the stock market and environmental ones emerge from event-studies.

4.1. Portfolio or Index-Based Studies

Many authors of portfolio or index-based studies support the thesis that sustainability has a positive effect on firm's returns.

Moskowitz (1972) is one of the first researcher to study the influence of Corporate Social Responsibility on investors' decisions. Moskowitz highlighted the difficulty of identifying socially acceptable stocks. Indeed, in the article the author develops a list of investable companies based on CSR criteria and support the thesis that CSR investors might generate superior unexpected performances. Hamilton (1993) suggested that SRI portfolios overperformed with respect to traditional portfolios due to the ability of SRI investors to influence the price by driving down the expected cost of capital and returns. Statman (2000), developed an analytical comparison between the returns of both Socially Responsible Indexes and socially Responsible mutual funds with the conventional Securities indexes and funds. The author analysed the performance of the Domini Social Index (DSI), constituted by socially responsible stocks, with the S&P 500 index. On the other hand, the author compared the returns of Domini Social Equity Fund, a passively managed socially responsible mutual fund, with a random sample of conventional funds. In both index and fund comparison, the author calculated that raw returns of the socially responsible counterparts overperformed the conventional ones, but there are not differences between their risk adjusted returns (I.e., the DSI appear to be somewhat risker than the S&P 500 having a superior beta). Through his empirical analysis, Jensen (2002) found that an adjustment of prices and other arrangements is present which reflects the preferences held by each individual in different group of stakeholders. Those individuals or groups who are affected and who can substantially affect the welfare of a firm might include local communities, customers, employees, owners, creditors, suppliers, and distributors. In the interactions each party is free to end the relationship and to manage the reputation in the system which is self-monitoring and self-correcting. Firms' pursuit of long-term profit leads to behaviors ensuring the avoidance of misleading the other parties to protect the reputation an strengthen the relationship. Given the ability to withdraw from a relationship and the possibility to find information on the market, a system of interactions might generate severe punishment for firms misbehaving towards the stakeholders. Evidence of this phenomenon are the costs linked to the dealing with discontent customers: these buyers can punish the firm by not buying the product from the same seller in the future, discouraging other customers from buying the product of the company, generating negative word of mount on the internet, demanding a refund, and even suing the firm. Jensen, for the creation of the control portfolio per each company in the index, found a control firm that was in the same industry/sector/subsector, requiring exact match in the sector membership. The model used logistic regression (multinomial logit: predicts if a sample having one characteristic on the x axis is in one category on in the other on the y axis (if prob of being 2 <50 is 1 otherwise 2) using natural logarithm of total assets (as a proxy for size), ROA, asset turnover(sales/TA), market value of equity/book value of equity (MTB), as a proxy for growth opportunities, and leverage (total liabilities/tot asset). Gompers et al. (2003) have empirically observed the presence of positive abnormal returns presented by companies with superior performance on the Government axis of ESG. First showcasing stronger shareholders rights over the 10-year period in the 90's analysed by the authors, are the one achieving better overperformance. The study of Derwall et al. (2005) focuses on the concept of "eco-efficiency", defined as the value created by a firm (E.g., by delivering services or producing goods) compared to the level of waste it generates. Using this metric, the authors created two different portfolios having different eco-efficiency scores. They found that the portfolio of large-cap SRI stocks achieved superior performances reaching a substantially higher average returns on an 8-year period if compared to the counterparts with lower eco-efficiency scores (I.e., as high as 6 ppts higher returns). The paper by Kempf et al. (2007) investigates the phenomenon of investors applying socially responsible screen to their investments to increase their portfolio performances. The authors analyzed the returns of companies over 8 years with the Carhart (1997) model, applying a trading strategy based on KLD (now MSCI) socially responsible ratings buying stocks with high ratings and selling the ones with low ratings. The outcomes of this strategy highlight the presence of an abnormal return of up to 8,7% per year, even after taking in consideration transaction costs. The research by Galema et al. (2008) relates the US portfolio returns, the excess stock returns and the book-to-market values to various socially responsible performance dimensions. According to the authors, socially responsible investing is reflected on stock prices only through a demand channel caused by differences in demand between non-SRI and SRI stocks. The difference in demand would lead to an overpricing of the SRI. The authors established that portfolio scoring positively on product, environment and diversity face a significant impact on stocks returns. Consolandi et al. (2009), comparing the Dow Jones Sustainability Stoxx Index (DJSSI) the Dow Jones 600 Index, noticed that the risk adjusted return is higher for the sustainability index if compared to the benchmark. Hoepner (2013) introduces the concept of ESG investing and highlights the opportunities of return enhancement and risk management. Four key observations are the outcome of this research. First, the incredible growth of ESG investing shed a light on the fact that financial markets have understood the possibilities of ESG metrics into the investment process and its implication on superior governance standards withing firms. Second, despite the large availability and accessibility, not all the investment managers rely on ESG datasets for their investment choices. Thus, following Grossman and Stiglitz (1980) the access to valuable information makes the one using that information perform better thanks to market inefficiencies. Third, ESG information are empirically proven to provide opportunity for attractive return enhancement. Fourth, at firm and at a portfolio level ESG dataset show strong risk management capabilities influencing the credit ratings and the cost of debt. Firms committed to managing their ESG risk tend to perform better in ESG ratings, thus the paper shows no surprise in the finding of lower firms' specific risk into companies having superior ESG ratings. Brzeszczyński et al. (2014) investigated the performance on portfolios of British socially responsible investments (SRI) stock. The study focused on the profitability portfolios, using different methods to select stocks, to further develop Osthoff (2007) study which involved costs bearable only by institutional investors for obtaining the required ratings information. The study highlighted that on a 10-year period the returns of thew SRI portfolios were on average higher if compared to the corresponding market indexes returns. Friede et al. (2015) conducted a meta-study around more than 2000 papers in academic research about the impact of ESG and financial performance and noted that around 90% of them highlighted a a positive relation between these two firms' performances. Khan et el. (2016) using data from MSCI (formerly KLD) showed how a high ESG performances had a positive correlation on stock returns. Ashish Lodh, VP of MSCI Research (2020) gathered the industry adjusted ESG scores regarding companies listed in MSCI World Index and MSCI Emerging Markets Index. The authors divided the companies into 2 set of quintiles (High ESG scores and Low ESG scores) and performed an analysis of the cost of capital. Companies receiving higher ESG scores have been observed to have lower cost of capital (avg over quintile: 6,16%) over a four-years study period compared to peers with lower ESG scores (6,55%).

Many researchers found no evidence of the presence of abnormal returns for sustainable companies over the years.

Diltz (1995), using the rating published by the CEP on eleven social criteria, constructed 28 different portfolios and analysed their monthly abnormal returns and market model alphas through a 3-year period. The author found that the application of social screenings does not have statistically significant effect on portfolio returns. Guerard (1997) found that there is no statistical evidence between the average returns on socially responsible equity and the entire stock market over the observation period of 8 years. He found also that analyst's earnings forecast supports the choice by investment managers of selecting stocks and in the creation of portfolios. In his study, Sauer (1997) compared the performances in terms of average monthly raw returns achieved from a carefully constructed portfolio of well diversified socially screened stocks with two different benchmark portfolios constituted from unrestricted stocks. The author found no statistical evidence of different performance of social responsibility screened portfolio in comparison with the benchmarks. According to Cohen et al. (1997) the transition risk for complying with environmental regulations might hurt firms' profits; on the other hand, a better control on pollution might reflect on a higher production efficiency and thus profits. Cohen found that the lack of objective criteria for the evaluation of firms' environmental performances is possible reason of this discrepancy. The study is developed building two different portfolios of companies in the S&P 500 characterized by different levels of pollution performances. Cohen did not find any "green investing premium" and neither a "penalty" generated by applying this investment screen. Goldreyer et al. (1999) analyses a sample of 49 mutual funds claiming to implement an investment screening strategy with regards to social policies. The performances measurements covered three different abnormal performance indicators to check whether socially responsible investment screening affect investment performances. From the analysis performed, the authors did not find any influence of the inclusion of socio-political information in the investment strategy policy on the funds' performances. Bassen (2006) developed a unique rating scheme to evaluate the relationship between sustainability and financial performances. The work did not identify a clear direct relationship between financial performance measured both through market-based and accounting-based measures and sustainability. The research highlighted anyway the link between sustainability performances and risk measures. Sauer (2007) wanted to demonstrate if the application of socially responsible screens in the investment strategy lead to lower performances. The authors compared the performance of a carefully constructed portfolio of socially screened stocks using the DSI (Domini Social equity 400) with two benchmark portfolios. Equities were selected directly from the index; therefore, the author isolated the performance differences generated by the applied screens both on raw and risk adjusted returns. According to the research, the application of socially responsible screens does not necessarily affect adversely the achievable performances of the portfolio. Thus, socially responsible investors should be able to invest according to their ethical beliefs without compromising on the returns of their investments. Schroder (2007) analyzed 29 SRI stock indexes and did not find differences between the risk adjusted returns of the benchmarks and the SRI stock indexes even under the application of difference stock screening methodologies. Renneboog et al. (2008) conducted a meta-analysis on the literature regarding SRI, providing a complete view on the impact of this investment strategy on shareholder-value, the risk performance and the risk profile of firms. The research did not identify in an unequivocable way the willingness of SRI investors to accept suboptimal financial returns to pursue social and ethical objectives. At firm level, even though there are compelling evidence of the pricing of CSR activities into the shareholders' value, there is still a lack of certainty regarding the direction of the causality. Yuchao Xiao, Robert Faff, Philip Gharghori, Darren Lee (2012) conducts an empirical analysis to understand the price of sustainability on stock returns of a worldwide market portfolio. They investigated whether there is a 'world price' of corporate sustainability, by asking whether a risk premium attaches to a sustainability factor. The study found an absence of a significant relationship between sustainability and returns.

Other authors found the opposite results, stating that sustainable companies achieve lower returns respect to conventional companies.

Carhart (1997) demonstrates how investment expenses, transaction costs and stock returns almost completely explain persistence in the panorama of mutual equity funds' risk adjusted returns and mean. In particular, the research describes how the past year returns of U.S. equity mutual funds positively predict their raw excess return. The results found by the authors do not support the existence of informed and skilled mutual fund portfolio managers. Bauer et al. (2005) using a database of 103 firms from the US, British and German Market of mutual funds extend the literature on the analysis of the performances of ethical mutual funds. Over a 11-years period (1990 to 2001), the authors did not find any significant difference in risk adjusted returns performances between conventional and ethical mutual funds. One of the factors highlighted as possible reasons for this performance alignment is the superior costs carried by ethical mutual funds. Gezcy et al. (2009) created different portfolios of SRI mutual funds to compare the costs investors must incur imposing SRI constraints while seeking higher returns. The comparison of these portfolios helped making clear the superior costs in which investors have to incur while seeking higher Sharpe Ratios while imposing SRI constraints. The cost associated with SRI depends highly by the fund manager skills in selecting the right stocks and on the view towards asset pricing model for the investor. Hong and Kacperczyk (2009) studied 'sin' stocks of publicly traded companies involved in producing alcohol, tobacco, and gaming. They found that sin stocks are less held by norm-constrained institutions such as pension funds as compared to mutual or hedge funds and they receive less coverage from analysts than conventional. Sin stocks also have higher expected returns compared to other companies. The authors show that the neglect of sin stocks by large institutions affected their cost of capital in a significant way. Halbritter and Dorfleitner (2015) research observed how the impact on excess performance of superior scores in three different sustainability ratings on the returns and their predictability and has witnessed a decline since the early 2000's given the increased ability of investors to recognize responsible companies and embedding this consideration in the stock prices and limiting the presence of abnormal returns and increasing the market efficiency. Halbritter et al. do not oppose to the findings of previous literature regarding the possibility for investors to obtain abnormal returns trading firms with high ESG scores, still, shades a light on empirical evidence pertaining the link between CFP and CSP. The analysis developed regarding the lack of convergence of ESG Ratings recognize the limits that the previous research had on the selection of a single rating for studying its correlation with the returns. Moreover, most of the existing literature around the topic focuses on short periods of time given the fact that most of the agencies have commenced their rating work just in the previous decade. All in all, this research shows how the ESG portfolios do not exhibit statistically relevant differences in the returns between companies featuring high and low ESG levels. Barber et al. (2019) depicted how investors are willing to sacrifice financial return in exchange of non-pecuniary utility derived from investing. Indeed, investors value positive societal externalities in addition to wealth in their utility functions. The study analyzed the returns of fund industry and taking into consideration the returns of VC Funds pursuing an Impact Investing strategy. The impact investing funds analyzed earn on average 4,7 ppts lower Internal Rates of Returns (hereafter IRRs) ex post in comparison to traditional VC funds. Furthermore, if analyzed through hedonic pricing framework as the willingness-to-pay models, investors are willing to earn lower IRRs for impact funds. Lastly, this paper carries out an analysis of investors classes which showcase a higher WTP and ones having a lower one. This variation is considerably impacted by legal and regulatory environments, time and investors geography. Cheng et al. (2020), found significant evidence that a firm CSR spending is largely due to agency problems and that the consequences of this phenomenon are significant on firm valuation and social welfare. An improvement of managerial incentives and governance according to their study will lead to a lower investment in corporate social responsibility actions implying that marginal dollar spent on goodness is resulting from agency problems. However, some forms of investments done not on the margins in CSR have a positive impact on firms' valuation, but managers prefer to invest the marginal dollar on goodness because they prefer to use other's people money on this kind of activities. Bolton and Kacperczyk (2022) found higher stock returns associated with higher levels and growth rates of carbon emissions in all sectors and most countries. Carbon premia related to emissions growth are greater for firms located in countries with lower economic development, larger energy sectors, and less inclusive political systems. They highlight in the coming years and decades investors will be exposed to substantial transition risk. Given that stock markets are fundamentally forward-looking, they analyzed whether and to what extent this transition risk is by now reflected in stock returns, looking at the pricing of carbon-transition risk at the firm level in a cross-section of over 14,400 listed companies in 77 countries. They found evidence of a widespread, significant, rising, carbon premium higher stock returns for companies with higher carbon emissions. Finally, they found that carbon transition risk is not just a reflection of climate policy uncertainty but is also tied to uncertainty with respect to technological progress in renewable energy and the socio-political environment that could support or undermine climate policies.

4.2. Firms' Value Performances and impact of SRI and ESG

4.2.1. Methodologies

In order to develop our methodology for estimating the long-term returns for firms applying SRI and ESG practices, we decided to review of the most influential ones in the research panorama. The following research follows the evolution of these models and encompasses the evolution of market-based and accounting-based ration, CAPM model, of multi-factors models and Implied cost of capital models.

The first model based on a combination of market and accounting measures is the one presented by Thomadakis (1977). The author developed an accounting measure to embed in firms' valuation the future-oriented implications of market structure. Starting from the question around the ability of a firm to generate future excess profits with the current structural position the author developed the Excess Value model. This model uses as profitability index the total firms' market value which is forward-looking and defines EV as a difference between this measure calculated as the sum of the market value of equity plus the book value of debts, and the book value of assets, normalized by the sales.

Another important paper developing a model which supports the discount rate channel for superior firms' performances is the research of Scott and Pascoe (1984). According to their research the variation of long-run competitive equilibrium, profitability for line of business (LB) would be explained by variation in the cost of capital. However, cost of capital is not enough to explain large part of the variance of the profitability, and it has absolutely zero effect on other variables in terms of qualitative performances. This paper demonstrated the need for a more developed model for the explanation of profitability opening the stream of research on multi-factors models which had its peaks with the one developed by Fama and French and Carhart. Campbell et al. (1988) underlined how the long-term average of historical real earnings is a good predictor of the current value of future real dividends. This happens also when considering the impact of information on the stock value. The research empirically analyzed this phenomenon over the stock returns and dividends in the long term (25 years). Campbell estimated how the finest estimation of present value of future real dividends is approximately a weighted average of moving average earnings and current price, with moving average earnings weighting between $^{2}/_{3}$ and $^{3}/_{4}$. Log dividend-price ratios seem more variable than, and virtually uncorrelated with, their theoretical counterparties given the present value model. The study, on the contrary, highlighted the existence of a correlation between annual returns on stocks and the respective theoretical counterparts. This, while the annual returns are 2 to 4 times as variable. The VAR model developed by Campbell helped to understand which components of the returns of stocks can be predicted given the information in the VAR system and which can be accounted for ex post by news about future dividends. The methodology introduced was then extensively used in the following literature to test for the impact of selected variables on stock returns.

As previously mentioned, one of the most influential papers in the research on the cross-section returns using multi-factors model is the work by Fama and French (1992). The authors, supported by the developing literature about empirical evidence of different factors influence on the expected stock returns effectuated a testing around the implication of those compared to the one generated by the market betas developed in the Sharpe-Lintner-Black model. According to Fama and French (1992) book-to-market equity and size combine to capture the cross-sectional variation in the average stock return associated with a market beta, earnings-price ratios, leverage, and book-to-market equity. The previously mentioned research by Carhart (1997) also contributed to the development of a sound methodology for the evaluation of future returns under the form of Cost-of-capital. The relevant methodological improvement introduced was the development of a new 4-factor capital asset pricing model. The model of Carhart added the one-year momentum factor capturing Jegadeesh and Titman's (1993) one-year momentum anomaly to the FF3. The model so developed was influential for the following literature since it had considerable explanatory power for variation in returns and sizeable time series variation.

Regarding the methodologies for the estimation of the Implied cost of Capital (hereafter ICC) the work of Gebhardt et al. (2000) constitutes an important initiator. The authors used a discounted residual income model to estimate the market cost-of-capital. After testing for firm specific characteristics and their systematic relation with to the estimated cost-of-capital, the authors found that the most influential were industry membership, forecasted long-term growth rate, B/M ratio, and the rate of dispersion of analysts' earnings forecasts. Starting from this analysis, the authors developed the GLS model which assumes clean surplus accounting and gives the possibility to express the share price in terms of the book value and in forecasted ROE. The explicit forecast horizon is set at three years beyond which the forecasted ROE reverse to the median industry ROE from the 12th year and remaining constant from that year on. The industries are defined as in the Fama and French (1997) classification and the median industry ROE is calculated over the PAST 10 years excluding loss firms. As in the Claus and Thomas Model the dividend payout ratio is assumed constant. Claus and Thomas (2001) contribute to the development of models to estimate the equity risk premium following the methodology of Campbell. The estimates developed from this paper refer to a long-term premium expected to hold over future years. In order to analyze the possible reasons behind the previous overestimation of the equity premium, this article used the Campbell decomposition of returns considering the following factors: (I) The expected equity premium for that period, (II) News about the equity premium for future periods; (III) News about current and future period real dividends growth; (IV) News about the real risk-free rate for current and future periods. According to the developed model the average excess return observed would exceed the equity premium today if (I) the conditional one year ahead equity premia have declined, (II) the conditional long term equity premium anticipated for future years has declined, (III) news about real dividend growth was positive on average, (IV) the expected real risk-free rate has declined. Based on the limitation highlighted a forward-looking method for estimating the equity risk premium have been introduced. In this model the stream of projected dividends was substituted with the equity book value plus a function of future accounting earnings. Easton (2004) contributed to the discussion around the definition of market-based rations for the estimation of long-term value. He defined a model of earnings and earnings growth which is a generalization of the PEG model (I.e., Price-Earnings-Growth) and can be used for the estimating of the expected rate of return on equity capital. This model has also its fundamentals on the Ohlson et al. (2005) model. Easton's model enables to express the share price in terms of 1-year-ahead expected dividend per share, plus the earnings forecast 1-year-ahead and 2-year-ahead. This is a noticeable improvement in respect to the PEG ratio which assumes the long-term growth as captured within the short-run growth potential. The explicit forecast horizon is set to two years, the forecasted abnormal earnings grow in perpetuity at a constant rate after this period. As the other models, the one of Easton requires the positive 1-year-ahead and 2-year-ahead earnings forecast to be positive as well as the positive change in earnings forecast. Another estimator that was later used extensively by research for the estimation of firms' long-term value through the calculation of the ICC is the model introduced by Ohlson et al. (2005). The authors propose another model for the estimation of cost-of-capital. The model proposed is a generalization of the Gordon Constant growth model and through the 1-year-ahead earning forecast, the perpetual and near-term growth forecast it allows to express the share price. Ohlson et al. Model sets the explicit forecast horizon to one year after which the forecasted earnings grow at a near -term rate that decays to a perpetual rate. One of the possible implementations of this model is through the use of Gode and Moharam's (2003) methodology where near-term earnings growth rate is the calculated as average of the difference in percentage terms between the 2-year-ahead earnings forecast and the I/B/E/S long term growth forecast. Moreover, dividend per share is assumed to be constant and the perpetual growth rate is set to be the expected inflation rate. The model requires as for the Claus and Thomas model and GLS model the 1-year-ahead and 2-years-ahead earnings forecast to be positive.

4.3. Estimation of the impact of SRI and ESG on firms' long-term value through the previously introduced models

The study of Cochran and Wood (1984) documented how the average age of corporations impacts the CSR scores, however, even after controlling the impact of this factor, this study found a correlation between financial performances and CSR. This study gained and influential role into the research topic for CSR impacts on financial performance and was the first to introduce in the study of this relationship considerations about risk aside pure return plus dividends considerations. Moreover, asset age has never previously been tested as control on the correlation between CSR and financial performances. The study acknowledges how the use of EPS and P/E as accounting measures to estimate the returns for firms is a flawed practice given the impact of changing accounting practices across firms and the impact of leverage and risk differences. Thus, the study uses three accounting measures for the evaluation of returns: (I) the ratio of operating earnings (before depreciation) per share (II) the ratio of operating earnings to assets (I.e., relative efficiency of assets utilization without the bias introduced by differences in capital structure) and (III) excess market valuation (I.e., EV= (market value of equity and book value of debt – Total assets) / sales). The use of this last measure was dedicated by the hypothesis of correlation between CSR and future prospects.

In the Sharfman and Fernando's (2008) study was observed that an improved environmental risk management is associate with a decrease in the cost of capital for firms regardless of the way the WACC was calculated. Their study is one of the first to explain the relationship between CSR performance and financial performance not through an improved resource utilization but through a reduction in the discount rate for the company valuation. This is due according to the authors to a reduction in the perceived firms' risk and this reflects largely in a reduction of the cost of equity capital. The effect of ESG investments might have an inverse relations on the debt capital costs if compared to equity capital due to the presence of different risk channels. In Sharfman and Fernando study is also highlighted how companies having a superior environmental risk management tend to shift from equity to debt capital even the environmental risk management does not impact positively the cost of this financing option. The access to cheaper equity financing was also documented by the research of El Ghoul et al. (2011) which shows how companies having higher scores in the CSR domain gain access to more advantageous Equity Financing conditions. The study uses several approaches (8) to estimate firms' ex-ante cost of equity and suggests that investments in employee relations, environmental policies and product strategies contribute in a substantial way to the reduction of the cost of equity for the firms. The findings of El Ghoul research support the arguments at the basis of CSR investment by firms: a reduction of firms' idiosyncratic risk. This research underlines how not only that investment in CSR activities have the power to explain an ex-ante cost of Equity but also that their influence in the explanation is superior to the one of good governance of a company and other risks. The model developed by El Ghoul et al. is an extension of Derwall and Verwijmeren (2007) extending the number of models used for the estimation and the longer sample period. This study takes into consideration 6 categories of CSR broadening the study of Chava (2010) which only refers to the environmental axis also expanding on Chen et al. (2009) analysis which focused mainly on corporate governance ratings. To analyse the source of the changes in the cost of capital for firms which consider CSR practices, the paper of Bouslah et al. (2012) examines the impact of the sole social performance on firm risk both idiosyncratic and total. From a financial perspective, social performance affects firm performance or value if and only if it affects risk and/or future cash flows. After analysing over 16,000 firms' observation over a 16-year long timeframe, Bouslah et al. outlined how risk for firms belonging to the S&P500 is positively affected by Corporate Governance, Diversity and Employee concerns. On the other hand, Community (diversity) strengths negatively (positively) impact firms' risk. Regarding firms not belonging to the same index firms' risk is positively affected by Employee concerns and diversity strengths. However, for the same firms' risk is negatively affected by Environmental strengths.

Using previously introduced model Eccles et al. (2014) was able to empirically demonstrate that firms are able to avoid sacrificing shareholders value creation in order to pursue environmentally and socially responsible policies. Looking at firms' cash-flow growth expectations a focus on profitability is necessary: ESG practices can influence firms margins not only through the creation of opportunities for price premiums but also from a reduction of costs and organizational processes and performance. The integration of ESG policies in firms' business represents a long-term choice for the companies with a focus on inter-temporal profits maximization and with an active stakeholder management process. For companies adopting ESG metrics for the evaluation is more likely that the BoD will take responsibility over this issue and top management team will be more likely to pursue sustainability figures in addition to traditional more financial ones Indeed, the research depicted the presence of both superior abnormal returns both on market-based and accounting-based measures

(4,8% more on a value weighted base, 2,3% on an equal weighted base) and long run returns (the analysis cover an 18-year time lap) accomplished by high sustainable stocks in comparison to low sustainable peers. The high sustainability portfolio outperformed for 11 of the 18 years of the analysis the low sustainability one embedding a lower volatility of returns.

After finding evidence in the paper of Eccles et al. of superior performances achieved by SRI stocks, we felt the necessity of gathering ulterior evidence regarding possible sources for this premium. As highlighted by previous research one of the main channels in which SRi performances ae influencing the financial ones is the cost-of-capital channel. Ng et al. (2015) examined whether Economic, Environmental Social and Governance affect individually or collectively the Cost of Equity Capital calculated using composite value generated through the usage of cross-sectional models. The authors decomposed the sustainability performance into financial and non-financial and constructed measures of ESP about operations, growth, research and market performances and ESG sustainability performance composite scores. The study measured proxies for these factors based on the Exploratory Principal Component Analysis. The outcome of the research is that that companies showing in respect to the 4 proxies strong economic sustainability performance are subject to a lower cost of equity capital. In particular, governance and environmental sustainability performance have a more intense impact on cost of equity capital, this might be explained by the respective more direct impact on financial performances. Moreover, this paper discovered that the relationship between financial and ESG performances is mainly driven performances on sustainability concerns (negative performances scores) rather than sustainability strengths.

The research of the between sustainability and financial performances has been tested mostly on the returns of U.S. and British based stocks. Thus, for us became relevant to search for evidence of this relationship beyond these two markets. The research from Azevedo et al. (2016) goes beyond a mere assessment of the hypothesis of pricing of the sustainability actions of companies in their stock prices. They investigate the impact on asset prices of corporate sustainability while building a new asset pricing model enhancing the Fama and French (1993) four factor model. The introduction of a corporate sustainability factor was used to test to which extent it was priced and to check whether CS consists of an anomaly in the market. This factor was based on a portfolio long in stocks with high sustainability and short in low sustainability positions. This study represents an important piece of evidence to extend the research to other markets apart from the ones already analyzed in previous literature. Azevedo et al. found that corporate sustainability is priced and can support the explanation of the variability in the cross-section of expected returns, the empirical results of this study found an average premium of corporate sustainability of 0,47% for the Brazilian market.

Another paper supporting the existence of a premium for SRI stocks and the possibility for SRI firms to access to cheaper equity financing on the market was the research of Luo et al. (2017). The authors modelled how the screens adopted by Socially Responsible Investors have pricing implications. In particular, the model implies a premium for the risk of systematic investors boycotts and reproduce the empirically observed abnormal returns to sin stocks. These stocks are characterized by sizeable positive abnormal return and literature previous to this paper explain this phenomenon as due to higher litigation risk, illiquidity and neglect. The boycott risk factor introduced in the CAPM model by Luo showed the capacity to explain differences in equity cost of capital differences across industries even in case of accounting for standard industry characteristics. The observed benefits of developing SRI activities might be the reasons behind the phenomenon observed by Gartenberg et al. (2018). Analyzing the returns of a wide range of companies in different industries, the authors found that truly embedding ESG and Corporate Purpose in the business can lead firms to experience returns as higher as 5-7% more than their non-ESG driven peers. El Ghoul et al. (2018) further investigated the inferior cost equity for companies with superior environmental performances estimated by Sharfman and Fernando (2008) with CAPM model. Estimating the ex-ante cost of equity capital for companies in over 30 countries and controlling for different variables such as firm and industry-level characteristics, year, and country effect, it resulted lower for companies having superior corporate environmental responsibility performances. Zerbib (2020) demonstrates how the ESG integration paired with the application of exclusionary screening, conducted in Sustainable Investing, affect the asset returns. His research characterized different premia generated by these exclusionary practices: on one hand a taste premium which clarifies the relationship between ESG and financial performance, on the other hand two exclusion premia generalizing Merton's premium (1987) on neglected stocks. Taste premium has three channels through which it materializes: (I) on investable assets return, owing to the internalization by investors of the externalities they generate, (ii) an adjustment of the market risk premium by the average taste premium, (iii) the excluded asset returns bear a superior taste premium. On the other hand, the two exclusion premia affect the excluded assets returns and are the effect of a reduction in the pool of investors for these assets. The more the excluded assets began to behave like a separate group from their investable assets, the more the exclusion premia rise. The exclusion effect tends to be positive as shown by Chava (2004) but according to Zerbib might be negative for individual excluded assets. Furthermore, Zerbib suggests that 3 reasons might stand behind the uncertainty in literature on the link between ESG performances and financial ones. First, the metrics used to assess environmental impacts of assets show low commensurability, are updated with low frequency and might be not accurate proxy to reflect sustainable investors preferences. Second, studies fail to identify the increase of green investors over time. Third, the usage of realized returns as proxy of expected returns neglects the effects of possible unexpected shifts in sustainable investors preferences on realized returns. One of the most important papers in our research is the one of Stotz (2020). The author while recognizing the validity of the assumption that in efficient capital markets the return expectations should be equal over the long run with return realization (e.g., Fama 1991), acknowledged also that deviation in the realized returns could be present. The cause could be explained through the presence of unexpected news as highlighted by difference piece of evidence we gathered. On one side, high ESG-rated stocks are expected to deliver positive surprises on future cash flows in comparison to low-ESG stocks). On the other side, discount rate news, (I.e., when investors might apply an unexpectedly decreasing discount rate, are also able to drive unexpected returns). This change in investor's requirements might be driven by two mechanisms: the changes in the risk profile of the firm and the changes due to shifting investors preferences. This last mechanism is influencing the discount rate indirectly. The author found empirically that stocks of companies with a high Environmental, Social and Governance (hereafter ESG) rating tend to earn a higher realized return on financial markets than stocks of companies with low rating. In contrast stocks of companies with lower ESG ratings tend to have also higher expected returns in comparison with high ESG ones. To analyze the causes of this puzzling difference between the expected returns and the realized ones, papers like the one by Olaf Stotz, 2020 try to explain the problem through return decomposition. The analysis highlight that the key might be on the discount rate news: the discount rate for ESG conscious companies has fallen in comparison with the one of low-ESG stocks. However, the diminishing interest rate according to Stotz seem not to reflect changes in the risk profile of the investment but a general investor preference for ESG conscious investments. Cheng et al. (2020) found the empirical evidence that especially large corporations invest in corporate social responsibility (CSR) programs substantial resources, notably on philanthropic activities as well as employee and community and energy conservation plans. However, the author was not able to state if those have a negative impact on long term financial performances of firms. Gregory et al. (2021) have developed a model named environmental, social, and governance (ESG) model for the evaluation of assets and which takes into account the value of natural and ecological capital paired with a sustainability factor. Gregory et al. proved that pursuing sustainable management practices in firms' strategy can reduce the cost of capital by 1,6% to 2,9% worldwide if compared to the one of companies pursuing a short-term profit maximization strategy. Another important outcome of this research is that smaller firms are more exposed to social and environmental risk than largest firms given the higher impact of the high costs of litigation risk. Recent literature regarding the analysis of risk of SRI firms ascribe the reduction of cost-of-capital to this driver. Brzeszczynski et al. (2021) conducted an analysis over the risk of socially responsible investments (SRI) stocks from the Central and European Market (CEE). In the analysis, the authors analyzed different Sustainability stock market indexes and calculated different risk measures. The observed beta coefficients (on average smaller than 1), the Modified Sharpe Ratio (MSR), and the Certainty Equivalent (CEQ) returns over 100 months period depicted how in the Polish stock exchange SRI stocks constituents of the RESPECT index have been subject to lower risk than the broader market and by better risk adjusted performances.

Many authors criticised the results previously cited due conflicting findings. One good example are the findings of the research by Pastor et al. (2020) who developed a model of investing taking into consideration ESG criteria. In the model firms differ in the intensity of their sustainability activities and of imposed negative externalities. As for the investors, they differ in their preferences for sustainability ("ESG preferences") while all of them derive utility from holding "Green" assets and disutility by holding "Brown" assets. The total social impact of firms and climate risk are relevant to Investors which take those into consideration in the investment decision. This lead, according to the paper, to a higher willingness to pay more for greener firms, by that means lowering a firm's cost of capital. One of the main outcomes of this model is that investors enjoy holding green assets because those hedge climate risk. This, imply a reduction in the expected returns and this is reflected by the empirical evidence that green firms have negative CAPM alphas while Brown ones have positive alphas. However, in case of a shock hitting the ESG factor, green assets tend to outperform brown ones despite having lower alphas. Dimson et al. (2020) analysis tries to assess the impact of considering in the investment corporate governance actions (G), environmental & social (E&S), and climate change (as part of E) issues on the payoff separately. Firstly, Dimson et al. highlighted how a good measurement of G performances should map closely the definition previously introduced by Larcker and Tayan (2019) and it is not clear if current ratings are doing it. Abnormal returns coming from a better governance have been seen to disappear over the 2000's. Through this decade investors became more able to distinguish between poorly and well governed companies and the information regarding the quality of management were impounded in the market price. Environmental & Social (E&S) factors are the ones that are usually addressed as CSR Dimson et al. research aligned with Jensen's view of value seeking objective for the companies, highlighted how companies should act to increase their own value since no causality but only correlation has been proven by authoritative research between CSR actions and company performance. Investing in E&S, given its high investment resource requirements, might affect the ability of the company to generate value for itself for a prolonged time. Furthermore, the authors suggest that climate change might be one of the strongest value enhancers for companies through the creation of new investment opportunities. This can be value generating through the shunning (or shorting) of likely "stranded assets" and through a focus on low carbon rather than high carbon investments. Given the fact that the Fama-French 3 factors model extensively embraced by the academic research is a model for analyzing realized returns and not an asset pricing model Idzorek et al. (2021) tried to develop a model overcoming this limitation of Fama-French applicability. In their book explain how combining elements from both classical and behavioral finance can lead to a new capital asset pricing model that goes beyond and generalize the CAPM (I.e., where the only risk characteristic priced is undiversifiable market risk) allowing for tastes and disagreements in a linear equilibrium structure. The Popularity Asset Pricing Model is based on three economic pillars applied to finance: Subjectivism, Marginalism, Equilibrium. Relative Popularity of assets (I.e. how much an asset is liked or disliked) in the market portfolio evolves throughout time and is based on observable characteristics for which the investors might have clearly defined preferences. Popularity is generated by collective opinion and preferences and has been shown by previous studies as one of the main explanatory reasons for premium and anomalies in returns. As a matter of fact, tastes and disagreement are strictly related to the intention of investors to pursue ESG objectives and go beyond the risk aversion as sole investor preference. Thus, with the same cash flows investors might generate a superior demand for an asset over another giving the preferred asset a higher current price and lowering its expected returns. Furthermore, ESG-investing which rates companies based on a range of SRI criteria, generates a preference for companies achieving higher performances on these criteria. According to the authors this might generate ESG premia granted to companies which meet certain social criteria. Change to a higher sustainability involves a cost and ultimately investors having ESG preferences would have to pay up for this preference, facing a potentially lower return on their investments. The different pricing outcome from the CAPM and the PAPM highlight the inefficiency of the market established by tastes and disagreements

4.3.1. Event Studies

One of the most important methodologies used by research to evaluate the impact of ESG and SRI data and publication is the Event Study methodology. Studies adopting this approach analyze the time series of firms' stock returns and evaluate the influence of report and score publications in terms of excess returns. The gathered evidence shows a pricing of ESG related news and in particular a higher performance for firms achieving better scorings on different sustainability related metrics.

One of the first study gathering positive influence of data publication on company valuation is the study of Shane and Spicer (1983) which investigates the movement of securities prices associated with the publication external sustainability related information. In particular, the publication of eight of the major studies published by the Council on Economic Priorities (CEP). Data show how CEP firms showcased large negative abnormal returns on average on the two days prior to the publication of the newspaper CEP report. Moreover, the performances accomplished by firms with lower pollution control scores (I.e., more polluting) were by far lower to the one achieved by companies having a superior rating. Another important publication is Hamilton's (1995). The authors investigated whether the release of the Toxics Release Inventories (TRI) by the Environmental Protection Agency (EPA) constituted an unexpected news for investors and journalists and if it implied stock price variations. The content of this report was a negative sustainability-related performance news. Thus, in line with the market efficiency hypothesis, on the investors side the publication of TRI was shown to impact negatively in a statistically significant way the returns. These abnormal negative returns for companies generated a consistent loss for Stockholders of companies achieving negative results as early as two days before the publication. To include in the study the effect of non-financial data disclosure from the companies we included the evidence gathered from Yamashita et al. (1999). In their research they analyzed both the influence of company's environmental consciousness data disclosure and the reward given from the U.S. capital markets to environmentally conscious companies. On the one hand, the publication of this information resulted in positive but statistically insignificant impact on stock returns. On the other, even though according to the theory stock investors are expected to recognize the impact of environmental performances on the long-term prosperity and competitiveness of a company (I.e., Porter, 1990), evidence gathered from the analysis of longer time series through a correlation between EC scores and stock returns, do not show statistically significant premia. Given the change of investors preferences over time, the inclusion of more recent papers was needed. Thus, our research followed the event-based analysis including most important evidence of the phenomenon in more recent times. Consolandi et al. (2009) develop an event-based analysis to check the impact on the listing and delisting on and from the DJSSI, on the prices of stocks. For this, the authors developed a Cumulative average Abnormal Returns (CAAR) over the test period. With it the study was able to identify positive and statistically significant price differences were identified before and after the listing of the companies on the index. Another positive support arrives form the research of Dhaliwal et al. (2020) which analyzed how a reduction in firms' cost of equity capital might be a resulting potential benefit associated with the initiation of voluntary disclosure of information regarding Corporate Social Responsibility activities. In particular, this study highlighted how companies having superior cost of equity capital in the previous year are more likely to initiate CSR disclosure and companies having superior CSR performances enjoy a superior reduction of Cost of Equity capital in the current year. Kang et al. (2021) with Respect to the Dow Jones Sustainability Index North America, his research highlighted how sustainability stocks exhibit puzzling returns above average for the 12-30 months after being listed onto an ESG indexes while the same ones do not present excess returns previously to the listing. According to his research, another parameter that is affected by the index listing is the institutional ownership of firms' stocks. The ownership by institutional investors increases after the listing and is not affected by the delisting. Kang in his analysis went through an analysis of the short sellers actions after the listing that might have influenced the stocks performances. However, there is no evidence short sellers increase their position to take advantage of the possible overpricing for this share class and thus the increased performances should not be attributed to this over-trading. Overall, the analysis highlights how an increased sustainability effort translate into an increase interest towards the stock of the firm on the market by investors superior performances.

4.3.2. Theoretical Modelling of Green Investing

Theoretical models constitute a big part of the literature regarding the pursuit by firms of SRI and sustainability-related activities. The most eminent models inherit concepts coming from economy, classical and behavioral finance, and cover the direct and indirect (I.e., through the risk channel) influence of SRI practices on financial performances.

Merton (1974) introduced a model that was later adopted for the theoretical study of risk and cost-of-capital dynamics associated with ESG-investing. The author developed the distance-to-default model which can be modified to consider climate-related default risk in the treatment of equity as a call option. Scenario impacts can test transition risk drivers and different pathways for policy development in parallel and the linkages in between the two. This, while also analyzing possible impacts on the equity risk premium happening on the market.

Bird et al. (2007) examined whether a contrast within managerial decisions of pursuing stockholders or stakeholders' interest was existing by analyzing the CSR positive (strengths) and negative (concerns) activities and equity performance. The gathered evidence shows little evidence of the jeopardization of stockholders' interests while taking into considerations also the interests of stakeholders. In particular, the authors observed how a probable benefit might be generated for stockholders of companies addressing the interest of a broad range of stakeholders, while for companies failing to meet social norms and regulatory deadlines are more likely to suffer. One of the most influential papers on the definition of theoretical basis for the managerial choice of conducting CSR activities is the research of Jensen 2010. According to the author, extensive research and many professional organizations and governmental bodies elevate as main reason behind this investment "Stakeholders Theory" according to which firms should act taking into consideration the maximization of the welfare of all stakeholders of the company, from employees to governmental bodies. However, “Stakeholders Theory” fails to define a single objective to be pursued by managers and make them serve different actors likely losing the focus on corporate goal. Nonetheless, companies guided by Balance Scorecards approaches, even lacking focus in their performance evaluation and reward system, develop a comprehensive knowledge in the balance scorecard creation process about company’s strategy and business drivers. Regardless this lack of focus, firms should not discard the goal of these approaches and ignore their stakeholders. Corporate managers, to maximize value should enlist the support of all the stakeholders of the company. In order to harmonize Value maximization and Stakeholder theory objective functions, Jensen proposed two theories pursuable as managerial objectives: Enlightened Value Maximization and Enlightened Stakeholder theory. Enlightened value maximization uses much of the structure of stakeholder theory but accepts maximization of the long-run value of the firm as the criterion for making the requisite trade-offs among its stakeholders. Its counterparty, Enlightened stakeholder theory focuses the attention on meeting demand of all firms’ stakeholders while specifying long-term value maximization in the companies’ objective. Jensen’s research encompasses two important aspects regarding the possibility of harmonization of different managerial goals within his theory. Firstly, a purposeful and rational behavior by an organization requires the existence of a single-valued objective function. Building on the existing literature, Lankoski (2018) has developed a model for classification of the Corporate Sustainability activities based on the outcomes they produce. In particular, this distinction does not only affect the nature of the performed activities but also their impact on the firms’ economic performances. Materiality, thus, becomes a crucial concept in firms’ decision on CS activities to pursue. The theoretical framework developed by the author presents the relationship between these two performances as an inverted U-shaped case-specific efficiency frontier.

According to Porter et al. (2000) competitiveness is linked by an underlying link with innovation, resource productivity and the environment. Increases in products' value and reductions in their total cost might be enabled by thoroughly designed environmental standards which can enable offsetting of productivity. According to the authors the first necessary step that needs to be taken is a shift from pollution control to pollution prevention. The reason behind this is the consideration of pollution as a form of economic waste caused by an incomplete, ineffective and inefficient way of using resources and poor management of processes. Moreover, hidden costs arising from the product lifecycle can materialize as under the form of management costs of these wasted resources, thus, impeding the competitiveness of a firm. Overall industry competitiveness can be observed from the pace of the reaction to environmental issues: the adoption of innovation can become crucial to enhance the resource productivity and limit waste along the value chain. Momentum towards the adoption of more sustainable practices might also not be generated from within the firm. As highlighted by studies around the effect of Sustainable Investing on the firm behaviors. Within the scope of risk-averse equilibrium setting Heinkel et al. (2001) study the effect on corporate behavior of exclusionary ethical investing. This paper tried to construct a theoretical framework to explain the evidence of an influence in the cost of capital for firms brought by ethical investing. A reduction in the holding of more pollution intense firms is generated on the market by a boycott of their share caused by an increase in the presence of exclusionary ethical investing practices. The deliberate avoidance of polluting firms' stocks, and the subsequent reduction in risk sharing between investors, leads to a reduction in prices of high polluting firms, thus generating an increase in their implied cost of capital. In case the cost of reforming and moving to a greener production is offset by the increase in the cost of capital, the exclusionary ethical investing would make optimal the choice for these firms to become socially responsible paying the fixed cost of reforming. Another study highlighting the importance of outside actors on firms' transition is the one of Freeman et al. 2007 which highlighted how the development of different stakeholder management process is linked to an in increase financial performances of the company, this since companies with broader stakeholder engagement practices are able to understand and anticipate stakeholders needs and make decision about the way to address them in the best way. The creation of an intangible asset in the form of strong relationship can become a source of competitive advantage impacting transaction costs, agency costs and costs associated with team production, thus, in contrast with possible opportunistic behaviors. On the importance of the same practices reiterates the study of Choi and Wang (2009) arguing that the effective management of stakeholder relationships can generate "persistence of superior financial performance over the longer-term". This might be due to the necessity at the base of sustainability and stakeholder management measures to be long-term oriented leading the management to pursue long term value creation objectives. Furthermore, Siegel (2011) in his research depicted the effect of social relationship with stakeholders as an irreplaceable strategic resource whereas its complexity is difficult to imitate.

Another important contribution to construction of a theoretical framework for green investing is the one of Albuquerque et al. (2019). The author presented an Industry equilibrium model where firms have the choice to carry out corporate social responsibility activities. Firms' decision to develop CSR activities is presented as choice for pursuing a source of product differentiation. Investing in CSR as a product differentiator, according to the author, leads to a lower price elasticity of demand, resulting ceteris paribus to higher profit margins ad product prices. These higher profit margins reduce the elasticity of profits to aggregate shocks, thus, impacting the systematic risk for the firm and increasing its value. For a risk averse investor, firms facing a lower elasticity of profits are more valuable given their reduced systematic risk (Using panel regression model the betas resulted significantly lower for CSR intensive firms). Their study also highlighted the importance of advertising expenditure for highlighting the product differentiation based on CSR efforts and this showed an increase of the magnitude of the effect on the beta. The more a firm has a diversified portfolio of products, the more these effects are stronger.

As highlighted in various meta-analysis conducted through the research streams around the impacts on firms' value of sustainability-related activities, there is a certain level of disagreement. Here are listed the major opposing contribution to the adoption of SRI behaviors.

Walley et al. (1994), even highlighting the possibility of existence, in line with Porter's idea (E.g., article from 1990) of a win-win situation, adhere to the common line of reasoning for which a company's costs of coping with increased ethical standards might translate into higher product prices, a competitive disadvantage, and lower profitability given the skyrocketing environmental expenditures. But just because environmental managers should not continue to search exclusively for win-win solutions does not mean that they should return to their old ways of fighting, ignoring, and hamstringing any and all environmental regulatory efforts.

Another opposing argument is the one of inferior returns of socially screened portfolio to the ones achievable by exploiting every investment opportunity on the market. In order to make Green Investing a feasible alternative for Investment Managers the risk adjusted returns of portfolios resulting by applying investments screens should be superior to the one of the market through the exploitation of pricing errors. Malkiel (2003) developed a theoretical analysis of the evolution of research opinion towards the Efficient Market hypothesis and, even without denying that egregious pricing mistakes happen in the market and some psychological factors might influence securities prices, concludes that stock markets are far more efficient and far less predictable than what has been believed lately in academic research. Market is extremely efficient in reflecting information about the whole stock market and at a single firm level and the spread of information is so fast that at the moment of information arousal it would be incorporated in the prices of securities without delay. According to this theory it would have been impossible through technical and fundamental analysis to select "undervalued stocks" and achieve returns higher than the one obtainable by holding a randomly formed market portfolio of individual stocks. This limits the possibility for the existence of a better-informed or more skilled Investment Manager since whichever price anomaly on the market would not create portfolio trading opportunities to earn extraordinary risk adjusted returns. Oehmke and Opp (2022) identify conditions under which the behavior of firms is impacted by socially responsible investors within a context in which firms are subject to financing constrain and their production generates social costs. In this setting Sustainable Investors in order to make an impact have to internalize social costs irrespective of whether they are investors in each firm, thus impact requires a broad mandate. This implies sustainable investor willingness to sustain a negative return on his investments to make an impact. If firms face strict financial constraints, a Social Profitability Index (hereafter SPI) should be used in order to allocate scarce Socially responsible capital. SPI is an ESG metric which captures the counterfactual social costs produced in the absence of socially responsible investors and the firms' status quo.

4.3.3. Descriptive Articles

An important introduction for developing a clear understanding of the need for companies to embrace new business models enabling a different kind of value is the explanation of "Triple Bottom Line" developed by Elkington (1998). According to his article Financial, Social and Environmental responsibilities have become for firms elements of paramount importance of the equation for expressing and evaluating the worth of a company in terms of sustainability. The adoption of the as dubbed "Triple Bottom Line" has been driven by government and customer pressure for corporations to find a way of answering it. This new paradigm has brought up the necessity to develop a new set of Audit for Triple bottom line information. The information to measure the advancement of the Triple Bottom Line are not always firsthand available.

Economic Bottom line goes further from the traditional inclusion of the financial capital structure and the generated earnings and earnings per share. It includes also the Human and Physical capital. Environmental Bottom Lime accounts for different factors. Natural capital is one of the most complex concepts to define since it has more to do with whole ecosystems valued than the mere material extractable from it. In particular, natural capital can be divided into two categories, “critical natural capital” and renewable, replaceable or substitutable natural capital. Social Bottom Line Is the last component of the Triple bottom line and comprises part of the human capital under the form of the skills, education, public heath but should embrace measures for larger societal development and health. Social capital is defined by the authors as the prevalence of trust in a society or in certain parts of it. It is a measure of the ability of working together for a common goals or purposes in organization or societies.

In the past decades, an exponential transition towards SRI and ESG practices has been seen. Eccles and Klimenko (2019) identified 6 reasons behind the exponential transition towards the embracing of CSR investing: (I) the size of the investment Firms which have entered responsible investing strategies has become important and since large institutional investors have long-term liability are them forced to acquire a long-term perspective. (II) financial performances are driving the change and to overperform on them one key concept to be kept in mind by corporates is Materiality. An annualized alpha on financial return for companies performing well on material performance and having low performance on immaterial topics have been observed as high as 4,8%. (III) assets owners are increasingly demanding for sustainable investment alternatives, and this is leading to a Growing Demand for products having characteristics that go beyond the pecuniary returns. (IV) An evolution of the view on Fiduciary duty now perceiving as a fiduciary duty breach not to consider ESG factors. (V) A trickle-down within investment firms have brought ESG analysts to be part of the fundamental financial activities carried out by portfolio managers. (VI) an increase by investors of ESG activism have been witnessed especially in interventions in proxy resolution and proxy voting which focused and driven decisions towards climate actions. The main shortcoming, highlighted by the authors, that are holding companies back from ESG investing are: (I) the lack of focus of sustainability reporting, (II) ESG data quality is low and evaluation methodologies opaque, (III) ESG data result difficult to Audit and to compare, (IV) evolution of technical standards and timely new standard setting by governmental in industry specific associations. Another important stream of research associated with the adoption of SRI practices is the one regarding the nature of risk faced nowadays by corporates. As mapped in S&P Global ESG Risk Atlas (2019), Social Risk embodies a large share of the embedded ESG risk in different industries with peaks that can reach over 83% of the total ESG risk. Some levers to reduce social risk are more easily manageable, I.e. having a more diverse workforce and/or having more diverse content can be some of the fastest and controllable levers company can use for reducing their risk scores. Nonetheless, companies must face more and more the war for talent: a spread struggle to attract and retain the right employees is present especially in younger generations more sensible to the ESG topic and company purpose.

In order to hedge these new risks and generate a real value for firms, researchers introduced and investigated a concept coming from the study of the risk topic: Materiality. Consolandi, Eccles et al. (2020) developed an analysis around relevance and intensity in equity returns of ESG materiality. Starting from the introduced ESG materiality provided by the SASB The study of Consolandi et al. introduced the concepts of “financial intensity” and “financial relevance” to analyze the level of materiality which is not considered as a binary categorization but as full spectrum of ESG materiality possibilities. The discovery that equity performance is not only impacted by the publication of ESG ratings but also the level of ESG materiality concentration is relevant. Thus, not only the market reward companies acting on ESG pillars with higher concentration of materiality but also that less material issues and more financially relevant ones is rewarded by the market. Another interesting research supporting the adoption of ESG practices covering the full span of E, S and G is the one of Duncan et al. (2021). In his research he highlights that when it comes to ESG factors the environmental risk is the one that receive the most attention, however, social risks can have a growing relevancy for investors in the long run. Social factors are financially material now. Firms taking into consideration proactively Social Risks are experiencing higher financial resilience. Putting in place procedures for health and safety can reduce the risk of the arousal of costly lawsuit. An additional important study to include in our research is the one of Edelman et al. (2021) who study the effects of ESG related risks onto the cost of debt capital for firms. According to the authors Transition and Physical risk propagates through transmission channels both on Microeconomic (financial impact on individual households, business disruption, property damage and liabilities) and Macroeconomic (unemployment, GDP changes, capital depreciation) streams and results in Financial (credit, market, liquidity and operational) and non-financial risk (reputational, strategic, physical security, Models and compliance and regulatory) for the lenders. Banks should engage extensively in investment encompassing transition of heavy polluters out of fossil fuels and prioritize deals that reduce climate risk or focus on the creation of new green technology opportunities. Lenders are creating borrower specific credit ratings encompassing ESG factors, however this is a process needing specific technical knowledge of climate patterns and environmental trends. The banks should gather data regarding AS-IS ESG performance and assess the clients' physical and transition risks, their resiliency to climate change and their plans to mitigate the threats coming from climate change in their business model. The transmission channel of climate risks is determining which KPIs to consider in the evaluation of risks: probability of default (PD), loss-given-default (LGD) and exposure-at-default (EAD). Banks are likely to conduct an analysis of the climate risk based on both internal and external sources of data; while they should develop internally climate related capabilities for the development of stress testing, credit risk evaluation and investor relations practices they often rely on external providers with higher experience in validating climate models.

To provide a holistic view on the firms' transition towards ESG policies, we decided to provide a complementary view to the academic one by reporting evidence coming from industry reports. In a report by *Dutton et Anderson, Deloitte Global* (2020) it was analyzed the current orientation towards these practices under the lens of shifting boundary conditions. According to this analysis it was important to notice that despite business leaders acknowledge the threat posed by climate change, there was a stall in action due to the Covid Pandemic and there was still a lot more to do as 65% of the executives described how their companies will need a retrench of the ESG oriented initiatives due to constrains posed by the pandemic. Only 25% of the respondents to Deloitte Survey said how their companies aimed to accelerate the Environmental sustainability initiatives in the months ahead despite the pandemic. Even with the severity of the situation there was still a gap between sentiments and actions. Moreover, the business environment had shown shifting expectations around the role of business in society which are compelling companies to embrace ESG and create value for all stakeholders. *Climate Check: Business' views on environmental sustainability* Report from Deloitte Global highlighted how this ESG transition already started, pushed from several forces coming either from changes in the environment and from the inside-out of firms. More than 90% of S&P 500 Index Companies are currently publishing sustainability reports, and as for 2020, 86% of employees were expecting their CEOs to speak out on social issues, 7 in 10 people globally support the organizing of boycotts against companies pursuing irresponsible behaviors. This transition assumes another level of importance if looked at through the analysis of climate data published by Oxford University (2021). Regarding the climate change it is not time for despair, evidence show how we are still in time to limit glooming future given the decreasing costs for renewable energies, continuous innovation and raising public concern and government actions.

To fuel this transition new forces are becoming more and more important for firms' decisions. According to Deloitte Analysis (2021) environmental sustainability initiatives are being primarily driven by stakeholder pressure. Investor demands and activism. This last force became the top motivating factor for these efforts generating the highest level of momentum as employees and external advocates demand greater climate action from corporations. Furthermore, as for March 2021, over 30% of the 750 Executives surveyed worldwide by Deloitte disclosed they are starting to feel operational impact of climate-related disasters. Moreover, over the 25% are feeling resource scarcity for the same reason. Also according to KPMG (2021) (Forbes) climate change is no more a distant threat for companies which are starting to feel the impact of climate related disruptions: the direct negative impacts to business operations remained a top motivator, demonstrating that organizations are increasingly aware of how climate change will impact their core operations. However, ESG factors should not be seen by companies only as a source of risk and damage for the ability of value creation for the companies. As a matter of fact, ESG might generate likewise opportunities. The creation of value for firms driven by ESG has been assessed on the market by Deloitte trough market surveys conducted from 2019 to 2021 and has been shown to be valuable for interviewed C-levels through six different channels. ESG practices are able to create value mainly through: (I) Sales and Innovation and the creation of new revenues streams, (II) Operational Efficiency with a reduction of logistics and supply chain costs, (III) Brand and Reputation by achieving a 6 times higher likelihood of being publicly protected by the effect of negative publicity, (IV) Capital Access and Valuation enhancing the attainable EBITDA by as high as 4 times, (V) Risk mitigation through a reduction of the negative externalities generated and the risks associated with them. This possibilities for value creation has not only been perceived by Corporations management but also by investors who are rapidly changing their investments preferences. Macquarie 2021 ESG Survey Report analyzed 180 real asset investors accounting for around 21$ trillion of assets under management and reported the evidence of a shift in allocation. These investors are allocating larger proportion of their capital towards ESG investments given the fact that a growing number of them are convinced that ESG Factors can enhance returns and reduce risk. With this belief came along a higher attention of investors to measure the ESG impact of their investments. However, many investors were far from committing to net zero alliances since they were still grappling with how to effectively measure the climate risk they are exposed to and manage it. One area where the investment community is lagging the corporate world was on ESG-linked executive remuneration. Nonetheless, survey responses show that demand for ESG analysis, integration and investment products was set for continued strong growth.

Deloitte (2022) in one of its reports states that given this state-of-play, momentum around ESG which grew exponentially during 2022 and the previous year. Investor demand, stakeholder pressures enhanced by an increased climate-related problems and possible solutions' awareness, and an increase in the regulatory attention are driving the ESG focus building up on the 2020 growth. The Covid Pandemic and the higher recognition of systemic risks impacts on our economies, societal prosperity and health lead governments and companies to orient their effort in the ESG domain. This behavior was acknowledged by the financial markets and the investors leading to ESG-Focused investments that now account for one third of global assets.

The necessity for a transition has become even more clear in recent days. According to The Economist (2022) Summer 2022 has, in Europe, broke many records of extreme sweltering temperature as observed from the data of the Universal Thermal Climate Index (UTCI). The same year have seen worldwide a growing share of population experiencing extreme or very strong heat stress per day, underlining once again the need for limiting world temperature increase.

4.3.4. Effects of Regulations

In light of the developing regulatory frameworks around SRI and ESG-investing, it is important to include a view of the impact on firms' performances of this transition. The evidence gathered hereafter were able to identify a positive impact of increasing disclosure requirements on the performances of firms having superior SRI and ESG performances.

One of the most important pieces of evidence is the study of Armstrong and Green (2012) research towards policies for enforcing companies to adopt socially responsible behaviors. According to the authors it is not enough to establish a set of rules to guide firms towards the adoption of more Socially Responsible behaviors, there is the necessity to support proposed changes with practical evidence about the impact on the increase of total welfare and to provide arguments supporting the benefits generated by any reduction in freedom. Armstrong and Green found a positive impact on long-term profit generation of the introducing of codes of ethics involving the stakeholders' fair treatment. Including Environmental, Social and Governmental topics in the scope of the judgement, to the authors seems that subsidized actions towards more responsible behaviors are limiting the free expression of needs by the consumers and limiting the effort of firms to satisfy them. A continuous request for larger data disclosure might imply huge expenditure for firms limiting their ability to compete on the market. Moreover, firms not able to fulfill the request for more information, given the high costs and regulatory complexity, might face an excessive punishment by the market in terms of decreasing stock trades. Thus, the effort of regulators should not be focused on the suppression of free market activity which effect will be detrimental for the total welfare of society. On the contrary, the creation of new policies should be focused on promoting the adoption of voluntary ESG activities and on limiting the adoption of irresponsible behaviors. Another important finding of this paper is that E&S actions can generate value through limiting the impact of socially irresponsibility. Another important contribution to the topic is the Study of

Ilhan et al. (2020). Their study focused on the effect of the ongoing strong regulatory actions developed to combat the climate change on the option market. Climate policy uncertainty generate difficulties for the market players in evaluating the impact of future climate regulation on the valuation of assets. This paper demonstrates how the generated market uncertainty is priced on the option market, in particular, it noticed that increased premium for the protection against downside tail risk is larger for firms with more carbon intense business models. The implied volatility slope, which captures protection against downside tail risk, is increased by an increase of a company's log industry carbon intensity of one standard deviation of 10% of the variable's standard deviation. A supporting argument for the development of a more effective regulatory framework is research of Hail et al. (2005). Their work highlighted the benefits associated with this development through the examination of international differences in the cost of equity capital across 40 different countries. The study analyzed if the effectiveness of a country legal institution is systematically related to differences cross-country on the cost of equity capital. Firms belonging to markets with more extensive disclosure requirements, stricter enforcement mechanism and stronger regulations on securities market have substantially lower cost of equity capital. Furthermore, the enhanced disclosure required for firms, reduces the information asymmetries between the firms and the investors as well as in between different investors in the case thy are non self-serving and credible by the other players. The reduction in information asymmetry generates more liquidity in the secondary markets. These results are of particular interest for our research in light of the growing requirement of disclosure of non-financial figures. To investigate more in depth the effect of the introduction of sustainability specific regulation we decided to include the research of Bassen et al. (2022). In their study it was analyzed the onset of the new pan-European classification scheme, EU Taxonomy Regulation (TR), and its effect on the realized returns of TR-aligned companies. This paper had four main findings. First, higher monthly stock returns were exhibited by firms with greater TR revenue alignment. Second, firms having superior (inferior) TR revenue alignment have been subjected to positive (negative) stock market reactions around the publication of the regulation. Third, an increased investor attention to the new regulation leads to an increase in the (TR alignment) premium for environmentally sustainable companies. Lastly, this paper uncovered that companies' returns are higher when the sustainability assessment as per the TR is higher.

5 Research Development

After developing an analysis of the context and of the sector in which the object of our analysis operates and after a thorough analysis of the literature, we structured our analysis adopting a benchmarking approach. The following approach was developed building on top of the analysis approaches learned during our Study internships but do not aim to replicate proprietary methodologies and include confidential information. The analysis developed was aimed at achieving the following result:

- Sampling of UCITS Sub-Funds which invest in European Assets and their subsequent classification according to sustainability characteristics.
- Identification and study of the strategies adopted in order to be classified as sustainable by the peer group members. This analysis was done for compartments identified in the first phase as classified Article 8 and Article 9 according to the SFDR regulation.
- Analysis of the holdings in the Funds portfolios in order to highlight eventual patterns of exposure towards specific markets and/or sectors and/or issuers whose equity is held by the compartments. This was done also to verify if differences in the proclaimed ESG ambitions of the funds did impact considerably the portfolio holdings.

High Level analysis of the performances of the compartments taking into consideration Financial Returns and Volatility measures in order to compare Sustainable and non-sustainable funds and the market benchmarks.

5.1. Sub-Fund Sampling

5.1.1. Criteria

The first step was a correct selection of the analysis sample. Our study is focused on evaluating the performances of sustainable funds against non-sustainable funds. The first step is the collection of data that will then be necessary for the analysis. First of all, in order to build a significative sample we decided to select the members of our sample according to the following crucial criteria of the compartments investment strategy:

1. Europe as region of investment
2. Funds domiciliated in Luxembourg
3. Typology of funds (UCITS vs AIF)
4. Fund’s structure (SICAV vs SICAF)
5. Asset under Management (AuM)
6. Asset Class held

Regarding the first criteria, we decided to limit the sample to funds that invest only in European assets. Many studies in the literature are focused on the global market or US market, very few have particular focus on the market in Europe. This was the reason why we choose to restrict the sample to those funds.

For the second criteria, we decided to restrict the number of funds to those domiciled in Luxembourg. This restriction has been applied purely to facilitate the collection of data by having access to databases that report in a complete way the information on each fund domiciliated in Luxembourg.

For what concerns the typology of funds, our sample was limited to UCITS funds. As we explained in the introduction, Undertakings for Collective Investment in Transferable Securities funds provide investment opportunities which can fit different investors’ preferences and they are subdivided into Sub-funds, also referred to as Compartments, which purse different investment objectives and strategies. These strategies are usually defined and implemented by a Portfolio Manager. It was crucial to restrict only to those funds to be able to study clearly the strategies of each of them, to relate then with the performances.

We selected only funds with SICAV structure, that own a legal personality and are managed by shareholders and a Board of Directors. A SICAV is an open-ended investment fund structure offered by European financial companies. SICAV stands for Société d'investissement à Capital Variable, which translates literally as "Investment company with Variable Capital". SICAV fund shares are available to the public to trade, with prices that are based on the fund investments' net asset value.

We restricted by the Asset under Management of the fund. We decided to limit the sample to funds that manage more than 1 billion of assets. Among the different reasons behind the choice of this filter, Sustainability Representation and Fees Influence on returns were the most important ones. We opted to evaluate only larger funds is to exclude problems related funds that invests in few assets and are not fully representative of the strategies that we want to analyze (i.e. sustainable vs non-sustainable). Also, applying this filter the sum of the asset under Management of the funds in the sample with AUM greater than 1 billion it was equal to 80% of the total AuM managed by Equity funds domiciled in the country. Furthermore, the total Expense Ratio for smaller funds tend to be superior given a higher impact of fixed costs.

Lastly, given the assumptions of the literature review which we analyzed, we decided to operate only in the Equity Investing Segment to avoid complexity introduced by fixed income instruments.

After applying all those filters, we obtained a sample of 66 funds.

5.1.2. SFDR Classification

Once selected the compartments for our analysis, in the next phase, we classified the sample of funds by adopting the SFDR Regulation that we explained earlier in the introduction. According to SFDR regulation, three product classifications were defined which were denominated according to their ESG ambitions. This classification at product level is used in our analysis to distinguish between financial products with focus on Sustainability and Neutral ones. The three categories are:

- Art. 6: products with incorporation of ESG limited to consideration of sustainability risks. They are considered ESG Neutral Products and in our sample, they constitute the reference peer group for Compartments holding also non-sustainable stocks in their portfolios.
- Art. 8: products considering sustainability risks, which promote environmental and/or social characteristics and which might consider the "Do not significant harm" principle; these products are also referred to as Light Green.
- Art. 9: products consider sustainability risks, they have a Sustainable Investment Objective, and these products consider the "Do not significant harm" principle across their entire portfolio. These are the products with the highest ESG ambitions and are also referred to as Dark Green.

We classified our sample of 66 funds following the SFDR regulation as follows:

- 16 Low Sustainability Art. 6 Funds
- 43 Medium Sustainability Art. 8 Funds
- 7 High Sustainability Art. 9 Funds

5.1.3. Data Providers and Historical Returns Series

The data for our analysis was extracted by three different data providers: Monterey, Morningstar and Refinitiv. We extracted the historical monthly prices from 31/11/2012 to 31/10/2022 of the funds in the sample. To avoid any errors, the data from the three providers were cross-referenced to clean up any discrepancies.

Once obtained the data, we analyzed the figures to identify any anomaly. We found that some funds performed stock split or reverse stock split, so we proceeded to correct those issues by getting information about the operation and fixing our dataset accordingly.

Then, we computed the monthly returns of each fund and obtained the average monthly return in the reference period (31/11/2012 to 31/10/2022).

5.2. ESG Strategies Analysis

Once selected the funds, the third step was to assess the different level of ESG ambition present in the market we carried out an analysis based on the EUROSIF Framework previously introduced on the 50 Article 8 & 9 funds identified. From the analysis of the Sustainable peers' group (constituted by Articles 8 and 9 fund) is resulted a clear pattern. The superior ESG ambitions of Article 9 funds translated into more ESG approaches adopted and superior disclosure.

5.2.1. Sum up of the Compartments' Investment Strategies

Four of the seven article 9 funds follow an Impact Generating ESG Investment strategy, in particular:

- Impact Aligned: BNP Paribas Easy – Low Carbon 100 Europe PAB
- Impact Focused: All the other 6 members of the article 9 peer group

The Article 8 funds belonging to the peer group encompass diverse levels of ESG ambition. Our analysis, as expected, did not identify any fund adopting an Exclusions Focused strategy. This strategy is considered not enough to be classified as sustainable by different Industry players and might make the promoter liable of greenwashing accusations. Nonetheless, the analysis identified five players adopting Basic ESG Strategies which declared themselves as sustainable while having a marginal ambition in practice. Whilst the large majority of the Article 8 funds in the peers (43) adopted an advanced ESG strategy, out of this group 11[4] distinguished themselves adopting more advanced approaches which might lead them to be categorized as article 8+ in the upcoming Amendments to SFDR Level II. These funds in 11 cases implemented Best-in-class approaches with a superior degree of sophistication. Furthermore, 3 funds in the Article 8 sample adopted impact aligned strategies with the inclusion of Sustainability Themed and a highly sophisticated Best-in-class approach in order to focus on positive impact through investees' positive screening.

5.2.2. Article 9 Sample

5.2.2.1. Pre-Investment Strategies

Pre-Investment Strategies - Negative Screening

The range of industries excluded by the Article 9 peers' sample covers all the three axes of ESG. However, except for AXA Investment Management and Candriam which apply very tight industry exclusions, these are less strict than in the approaches of different Article 8 Compartments. Indeed, given their role in leading the transition towards a more sustainable economy, Article 9 compartments, while including exclusions adopted it in extreme cases, tend to prefer Engagement and Voting.

The main reason behind the choice for funds adopting exclusions in this sample are mainly two. Certain exclusions are adopted in order to limit the risk of impacting certain SDGs, while others are applied on companies operating in sectors generating harm to one or more SDG and developing non transformable activities. Whilst in the first case the considerations on the double materiality of the investment might be overridden by the conviction of an attainable transition and thus exchanged for an active engagement, the second category are binding. This becomes clear when listing Industries from which almost every article 9 funds withdraw to invest.

[4] These funds are identified with the following indexes in the sample: 22, 27, 58, 29, 32, 37, 38, 39, 45, 51, 56. They add up to the funds 48, 49, 50, which are the ones adopting Impact Strategies, in the Article 8+ peer group

The companies excluded by this peer group and are belonging to the following industries classifiable according to their core effect on the ESG axes (identified by the Capital letter in brackets):

- Coal mining and Coal based energy production (E - climate)
- Oil sands production and Oil Sands Pipeline (E – climate)
- Palm Oil Production (E – biodiversity)
- Food Commodities Derivatives (E – biodiversity, S – nutrition): funds involved in speculative transaction on food commodities which might contribute to inflation of prices in products like weat, meat, sugar, dairy and Fish products which might cause malnutrition in poorer parts of the population
- Tobacco manufacturing (S – health)

ONLY BNP PARIBAS EASY FUND: Asbestos (S- health), Aerospace and Oil equipment (E – Climate)

ONLY MIROVA FUNDS: Mountain Top Removal (E – biodiversity)

Pre-Investment Strategies - Positive Screening

Norms-Based screening

The Norm-Based Exclusions for article 9 funds act in order to generate an investment universe with a particular attention on Social and Governance pillars. On one hand, as also adopted by different Article 8 strategies, Human Rights are at the center of this types of exclusions for the social axis. On the other hand, Business Controversies are at the core of the screening policies.

Violations of the UN Global Compact on human Rights are crucial in the scrutiny for every article 9 funds especially for the one of Banque de Luxembourg which relies heavily on norm-based screenings through controversies analyses. The Norms adopted regarding business ethics breaches by 5 of the funds are the ones contained in the UN Global Compact while Mirova Funds complement those with the ones contained in OECD and gathered around four pillars: corruption, Labor standards, human rights, and environment. The same approach for Norm-based exclusions is followed by certain Article 8 funds which adopt also different frameworks to avoid selecting ESG laggards (I.e., OECD and ILO). Companies which contribute or have had an influence on any material violations of international standards and norms, with a focus on the Conventions on International Labor standards (also referred to as ILO), the principles included in the UN's Global Compact, OECD Guidelines and the UN Guiding Principles (also referred to as UNGP) on Business and Human Rights are thus excluded from the investable universe for every article 9 Compartment.

Examples of industries excluded due to Norm Based screenings are:

- Controversial Weapons Manufacturing (I.e. White Phosphorus Weapons, Anti Personnel Landmines, Cluster Bombs, depleted uranium, biological weapons, breaches of Nuclear Weapons treaty) in most funds analyzed a zero-tolerance is applied to investments in the manufacturing and distribution of these weapons.

Pre-Investment Strategies – ESG Integration

AXA IM: the funds Promoted by AXA IM for their ESG integration procedure use

- ESG Scores: based on a proprietary methodology and available to all the investment managers in AXA IM which might be supported in their valuation by internal Responsible Investment specialists
- Internal and External ESG research: is developed around climate change, biodiversity, gender and health based on Brokers analyses and involvement with companies operating in the sectors
- Exclusions methodologies:
    - Monitor and exclude high ESG risks

- Additional screening based on ESG ratings for the Integrated ESG funds as the Article 9 involved in our analysis

The axes on which the AXA IM ESG Ratings are built are 6. (i) Resource and Ecosystem (ii) Climate Change, (iii) Human Capital, (iv) Social Relation, (v) Business Ethics, (vi) Corporate Governance. These Ratings are based on ESG Raw data and ESG research provided by 12 different data providers scoring investees on a range of over 100 ESG criteria. As for Framlington Fund this quantitative analysis is paired with qualitative analyses to understand opportunities and assess transition path of the investees. Lastly, the outcomes of this analyses are paired with active ownership to ensure a more sustainable and responsible corporate behavior and improve disclosure.

BL: Banque de Luxembourg Investment applies a deep commitment in the ESG integration all through the investment process. The application of exclusions and norm-based screenings with a focus on controversies are complemented by the integration of ESG factors in the valuation of the assets and active engagement in the post-investment phase. The data utilized for complementing the financial valuation of the assets are: MSCI ESG Research, Carbon Intensity (Scope 1[5] & 2 Emissions[6] Scope 3[7]), MSCI Controversy Score, Exposition to certain Sensible Sectors. These data are utilized paired with a proprietary methodology for the assessment of ESG Risks and Opportunities associated with each investee. Active engagement and voting are developed in order to increase the disclosure of the investees and lead them to embrace more sustainable practices in line with the UNGC.

BNP PARIBAS EASY: is a passive managed fund tracking low carbon 100 Index, thus the ESG integration for this fund has low commitment

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[5] Scope 1 emissions are the emissions directly controlled by the company
[6] Scope 2 emissions are emissions caused indirectly by the company (ex. through the production of the energy it purchases)
[7] Scope 3 emissions generated down the value chain of the company and not in direct control of the company

MIROVA FUNDS promoted by NATIXIS IM: In order to achieve impact on the thematic axes selected the ESG Integration Policy has a high commitment. Investment opportunities undergo a profound due diligence performed by the Investment Manager aimed at the identification of the ESG opportunities, assessment of the ESG practices of the issuer, and ESG research to identify ESG risks. This research is also combined with Voting and Engagement activities which are delegated to Mirova as third party ManCo.

The ESG analysis methodology has been developed internally by NATIXIS IM and is composed by two parts: one quantitative and one qualitative. For the quantitative part, an analysis of the risk and the growth prospects is developed. For the qualitative analysis, each investee is attributed a narrative and conviction description highlighting possible future opportunities. The investments are evaluated in comparison with different KPIs to evaluate their actual and transitory status in respect to SDGs (GHG emissions, gender diversity, employment).

CANDRIAM: Both long-term opportunities and risks are kept into consideration in Candriam ESG Integration practices which aim at selecting stocks contributing to the reduction of Gas Emissions through specific targets. This evaluation complements the fundamental analysis performed on 5 different axes: (i) Quality of Management, (ii) Business Growth, (iii) Competitive Advantage, (iv) Value Creation and (v) Financial Leverage. In order to do so, Candriam gathers data from different data providers to ensure the broadest coverage and feed the internal ESG database used as source for the evaluation of investees. Candriam uses a proprietary methodology which make use of the sectorial models adopted by different data providers. ESG Integration by Candriam also encompasses Engagement through an active stewardship process and Voting in the general meeting to increase the level of disclosure of investees and lead them to adopt sustainable behaviors.

Pre-Investment Strategies – Best-in-Class/-in-Universe/-in-Progress

AXA IM defines its best-in-class approach as the use of a selectivity based on social responsibility which takes into account non-financial metrics and consist in the selection of best-issuers from the investable universe with a focus on their scores around Climate change.

BNP best-in-class approach: Best Social, Environmental and Governance practices are at the basis of BNP best-in-class approach. This, whilst its funds avoid companies presenting high ESG risk levels and which are not complying with the Promoter's ESG standards

MIROVA Funds apply best-in-class policy by selecting companies which have better prospects around ESG performances or improving them better than peers.

CANDRIAM adopts a light Best-in Universe strategy for the industries not excluded by the application of the previous approaches. The Investee are selected considering their ESG scores compared to industry peers.

Pre-Investment Strategies – Sustainability Themed

MIROVA FUNDS managed by NATIXIS AM: Mirova Funds are both multi thematic and aim to achieve the following EU Taxonomy aligned goals: (i) Climate change mitigation and (ii) Climate change adaptation. This is done through the investment in economic activities eligible according to the Taxonomy Regulation. Thus, the funds will be investing in companies active in the natural resources management, renewables energy, energy efficiency renovation of building, low carbon transport, water supply, sewerage, waste management, remediation activities and transition energy. This is done while also developing an overall sustainability assessment of each investee encompassing the 6 impact pillars defined by EU Taxonomy, while including three on the environmental issues.

- Climate Stability
- Healthy Ecosystems,

- Resource Security

5.2.2.2. Post-Investment Strategies

Engagement and Voting

Transition Objective and Investor Impact are the core of the Engagement and Voting approached adopted by the peer group Article 9 funds.

Shareholder engagement has been conceived by most of the peers analyzed as a process in which investors are seeking to improve overtime the practices of the investees with specific objectives in mind. Long term dialogue is one of the most commonly observed practices in the sample together with a constant constructive influence on Boards Decisions. Company show to report the progress of their engagement while analyzing its effectiveness. Article 9 funds management, in case a little or no progress is made, will escalate through voting or controlling share purchase in an appropriate fashion. Nonetheless, Voting is not only a solution of last resort. It is a crucial aspect involved in stewardship and active ownership. This gains especial importance in the investment process and in the opportunities of guiding and influencing the investees. Article 9 funds are observed to engage with the companies before and after the voting.

Out of the peer group, the approach that at our eyes appears the most suitable in this period in order to drive transition is the one adopted by the two Compartments of Mirova Funds. Their thematic strategy around different SDGs driven by the engagement with the management of the investees and the voting in Board and General Meeting is the one that gets closer to generate an impact.

5.2.2.3. Performance Measurement

These approaches are complemented for article 9 funds by the Performance Measurement of the impact achieved by the investees and by the fund itself. Whilst the reference benchmarks selected by these article 9 funds do not consider their Sustainable Investment Goals, other indicators are used to assess the achievement of the expected results. All the Promoters of the article 9 funds opt in for the disclosure of Principal Adverse Impact Indicators both at product and entity level. Moreover, for specific investment objectives, the considered article 9 funds include specific indicators as ESG Scores and Carbon footprint and set for them interim targets aligned with international frameworks like GHG Emission reduction pathway.

5.2.2.4. Documentation

As highlighted by the analyzed literature, it is crucial for companies and funds developing Sustainable Investing or ESG activities to disclose transparently and as comprehensively as possible to its clients in order to generate real value. This by providing them with comprehensive information and analyses and assisting them in understanding sustainable Investing.

The superior level of disclosure leads article 9 funds to implement a detailed description of the Pre-investment and post-investment approaches adopted through the fund's documentation. While in the prospectuses of the funds the ESG approaches are only partially addressed, the promoters feature a thorough methodology disclosed in the following policies on the website. (i) The Sustainable Investment Policy (ii) Active Stewardship Policy (ii.a) Engagement Policy (ii.b) Proxy Voting Policy (iii) Exclusion Policy.

Moreover, every promoter of compartments following an Impact Generating ESG Investment Strategies published regularly on its website Impact Reports, Engagement Reports and comments of the portfolio manager highlighting the results achieved in the financial year previous to the publication. In these the mostly adopted KPI used to monitor the impact are the PAI indicators.

5.2.3. Article 8 Sample

5.2.3.1. Pre-Investment Strategies

Negative Screening

The compartments which have been identified as having Marginal ESG ambition are (i) Digital Funds Stars Europe, Memnon European Fund and the following three compartments of Fidelity Funds: (ii) European Growth Fund, (iii) European Dynamic Growth fund, and (iv) Institutional European Larger Companies Fund. These are pursuing Basic ESG Investment strategies and adopt only Pre-Investment approaches with the aim of reducing the ESG risks carried by their investees. With the exception of the compartment belonging to Memnon Fund which only apply an ESG Integration with low commitment, these funds policies are amongst the most restrictive Industry Exclusions Policies observed in their peer group. However, these funds are not the only one adopting broad exclusion lists (I.e., the funds whose promoters are JPMorgan, Melchior and Pictet adopt strict exclusion policies too). For industries excluded only by one promoter these are identified by the its name in brackets. The compartments do not invest in:

- Weapons Producers & Retailers
- Thermal Coal Production & Energy Generation
- Oil Sands extractions
- Artic drilling for Oil & Gas Production
- Tobacco producers and manufacturers
- Tobacco retailers, distributors, supplier and licensors (Fidelity Funds)
- GMO Agriculture (Digital F)
- Palm Oil (Digital funds)
- Gambling (Digital funds)

- Alcohol (Digital funds)
- Non-medical Drugs (Digital funds)
- Adult Entertainment (Digital funds)

Article 8 funds with superior ESG ambitions adopt two different strategies regarding exclusions. On one side, firms operating in one of the aforementioned industries are not excluded at priory but undergo an additional due diligence on the percentage of revenues coming from the industry and on additional ESG scores. On the other hand, fewer industries are excluded to foster a transition towards higher disclosure standards and adoption of more sustainable practices through engagement and voting. Additional Industries excluded by Article 8 with the highest ESG ambitions are:

- Hydraulic Fracturing (Allianz Best Styles Europe Equity SRI)
- Nuclear Power Generation (Allianz Best Styles Europe Equity SRI)
- Asbestos (BNP Paribas funds)
- Recreative Cannabis (Invesco)
- Provision of Predatory Lending (Melchior Funds)

Furthermore, also in regards to Norms-Based Exclusions, funds with marginal ESG ambition adopted stricter policies to avoid ESG risks. However, these differ on a more marginal way in comparison to the ones of peers than Industry Exclusions. Norms-Based Exclusions adopted by article 8 funds are both controversy-based and based International Treaties as follows:

Based on Controversies:

- Controversial Weapons (anti-personnel mines, chemicals, cluster bombs. Nuclear Weapons, depleted uranium, biological weapons, white phosphorus)
- Fragile Nation Indicators

- Corruption
- Violations of treaties:
- The UN global compact
- OECD Guidelines for Multinational Enterprises
- UN guiding principles for Business and Human Rights
- Responsible Business Conduct
- International Labor Standards (ILO) Conventions

Positive Screening

Regarding Positive screening strategies, we identified four different approaches with an increasing ESG ambition:

- ESG integration through the adoption of one ESG indicator (18 members of the Art. 8 sample)
- ESG integration through in-house rating methodologies backed up by the use of data from different ESG data providers (9 member of the sample)
- The use of ESG integration through the elaboration of ratings coming from different data sources paired with the adoption of Best-in-class approaches with high sophistication (11 members of the sample)
- The used of the previously mentioned approaches complemented by the adoption of a thematic approach to identify financial opportunities and promote Low Carbon Transition characteristics (3 members of the sample)

The sample members adopting the last methodology might in the future change their strategies in order to be classified as an Article 9 fund.

5.2.3.2. Post-Investment Strategies

Engagement and Voting

A positive trend can be identified regarding the adoption of Engagement and voting as post-investment strategies. Building on previously developed Proxy Voting and processes for Lobbying within company general meetings, funds in our sample have been embracing these strategies as a new way of creating sustainable value. The outcomes of our analysis might be influenced by the sampling methodology which includes the biggest funds for AuM in the European Equity, however, might be a suggestion of a broader pathway embraced by the Industry.

Most of all, 32 of the Art. 8 funds adopt both Engagement and Voting in order to promote E/S characteristics in line with their classification and reporting periodically on their website the outcomes of their activities. This widespread adoption contrasts with the practices adopted by 6 compartments which do not engage both in Engagement and Voting practices, 4 of them are the ones adopting a Basic ESG Investment strategy. Nonetheless, there are possibilities between these two extremes: 3 compartments do solely engagement in order to foster the transition to higher disclosure leading investees to adopt more sustainable practices while 1 compartment take parts in the voting in shareholders meeting for the investees having the same objective.

For one compartment (SICAV ODDO BHF- Euro Credit Short Duration) we were not able to find a specific voting and engagement policy, thus, we did not include it in our post-investment strategy analysis.

5.3. Portfolio Analysis

To understand whether the different ESG ambitions' levels reflected into different investment approaches, after separating the sample according to the SFDR categories, we analyzed the following characteristics of the investment portfolios of the considered compartments:

- Exposition to different countries
- Exposition to different industries following the GICS classification
- The Investees attracting most investments for each sustainability segment
- Resulting ESG ratings

To develop this analysis, we started by creating a database of the holdings of the selected funds taking the data from the lastly issued Annual Reports for each compartment. These data were then integrated with ESG data coming from Refinitiv (ESG Total Score, Controversy Score, Environmental Score, Social Score, and Governmental Score).

5.3.1. Phase 1: Data Collection

Given the impossibility due to lack of data to identify the holding of every fund in a given moment in time, the list of the investees and the relative weight in funds' portfolios were extracted by the lastly issued Annual Reports. For each identified compartment we gathered the annual statement in which was present the Holding Statement. The data often were presented using different methodologies and part of the effort was given to the alignment of the data formats in order to create our database. Given the possibility for the selected compartments to allocate small parts of their assets in securities not belonging to the Equities asset class, we adjusted the percentages of the holding exposition. This was done by dividing the percentages gathered from the prospectuses by the total percentages of assets invested in equities in order to bring the total percentage to 100%. This made comparable the holding of different compartments excluding unwanted influence.

Through this process, we were able to identify 1160 issuers of securities in which the selected peer group was investing. Each of which was assigned using complementary databases (StockMarketMBA.com, Chartmill.com, Grahamvalue.com, MSCI.com) the respective GICS Sector. This group of investees covers all the 11 sectors of the GICS classification and the Biggest Economies in Europe. Nonetheless, the selected peer group contained also issuers coming from other continents given the possibility for funds to invest part of their assets in foreigner issuers.

5.3.2. Phase 2: Data Analysis

Once collected the percentages assets allocated by each single fund into each investee, we calculated the weighted averages of the holdings per each SFDR-based group of funds. This was done by using as a weighting parameter the TNAV (Total Net Asset Value) of each compartment as reported in Monterey Report 2021. This was done in order to create a representative Portfolio considering the real exposition to various companies. In this way, we were able to identify relevant characteristics of the investment approach taken by each SFDR category.

Firstly, exposure data were gathered according to the countries in which the investees were domiciled. This made possible to identify the exposition profile to different European Countries of each class of compartments. Secondly, we identified the exposition profile of the different fund classes to different GICS Sectors by grouping he exposition data according to the GICS categories identified. Last, a list of preferred investees for which we analyzed the ESG ratings to identify ESG exposure differences.

Furthermore, we develop a comparative analysis for the identified differences and patterns.

5.3.2.1. ARTICLE 6 SAMPLE CHARACTERISTICS

After creating the representative portfolio for each class, the first developed analysis was on the characteristics of the Article 6 sample. Funds in this class invested in shares of 589 issuers covering 24 countries around the globe. This is due to the fact, in the investment policy, most of the fund declared a preference for stocks of firms domiciled in Europe but with a binding varying percentage between 75% and 90% of their assets invested in this market. However, regarding the country exposition, the analysis was done taking into consideration only countries belonging to Europe which was taken as reference market for our analysis.

The analysis Identified a clear preference for the selected compartments to invest in the few countries. According to the observed data, the investments in equities issued by firms in 7 nations account for over the 80% of the total capital invested. As can be Seen in the following graphs, Equities issued by firms headquartered in France are the ones preferred by investors in the article 6 space, with 17,29% of the total capital allocated in them. This percentage is closely followed by the ones of Switzerland (14,97%), the one of Netherland (13,11%) and the one of United Kingdom (12,19%). For the other percentages please refer to the annex number A.2.

Table 1.6 Exposure to Countries Article 6 A, Authors

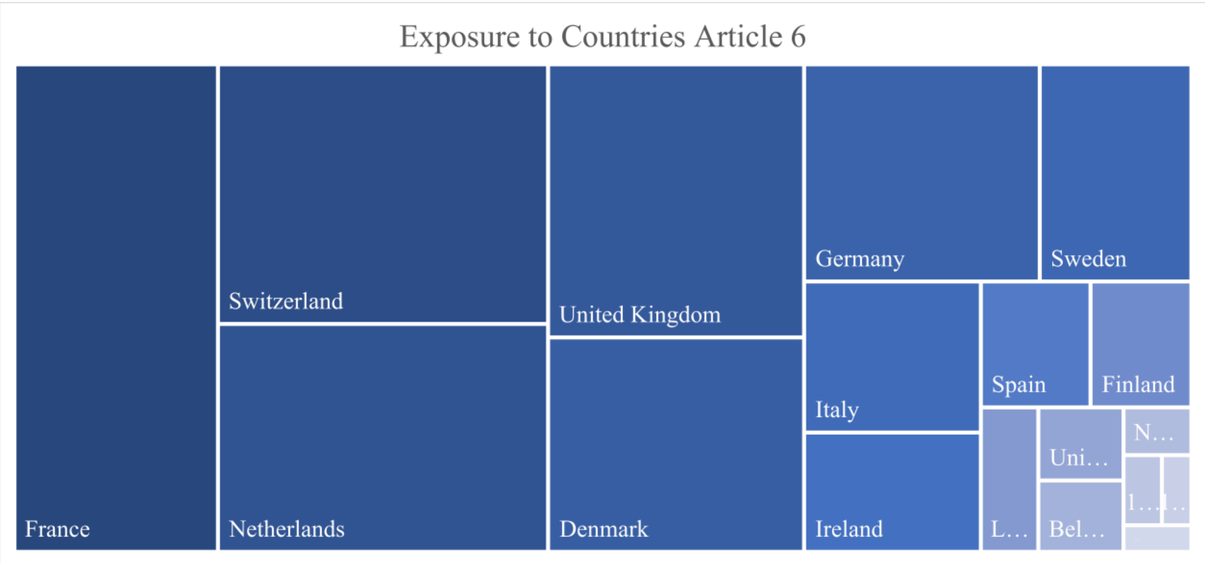
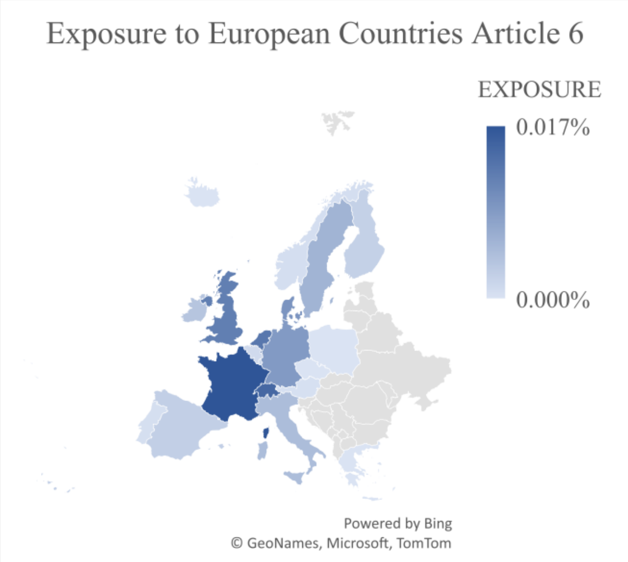
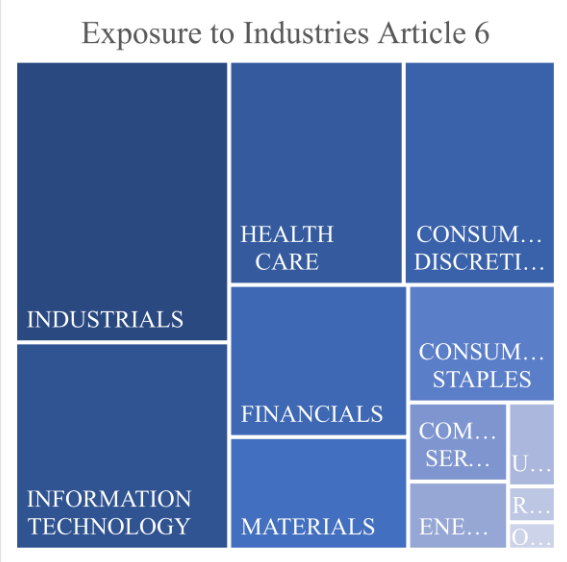


Table 1.7 Exposure to Countries Article 6 B, Authors

&

Table 1.8 Exposure to Industries Article 6, Authors





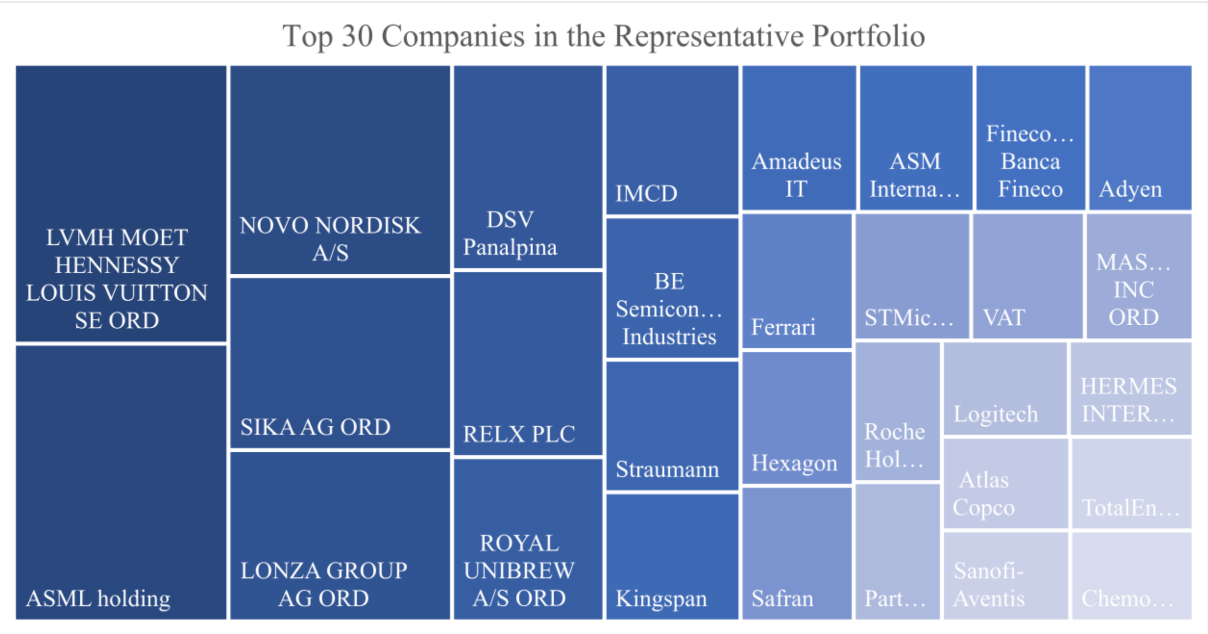
Nonetheless, as shown by the map, in Europe the presence of investees of this class of funds encompasses 21 different countries with a large contribution coming from firms also domiciled in the Central and Southern Europe regions. Eastern Europe nations are still considered by the market players as Emerging Markets (also according to the MSCI classification) and are not receiving a lot of attention from this class of Invertors given the embedded higher risk. It is important to notice that even after Brexit UK remained in the top 5 in terms of investments received.

Regarding the Level of exposure to different sectors, the analysis depicted a high reliance for the funds in investments in the Industrial Sector (22,86%) and in Information Technology (16,78%). These industries are then followed by investments in Health Care (14,84%), Consumer Discretionary (12,92%) and Financials (10,33%) as major contributors.

Within the analysis of the exposure to different industries we developed a drill down on the Sin ones. Firstly, Article 6 funds allocate over the 80% of the asset invested in the energy sector to companies operating in the Oil & Gas related industries. Second, the representative portfolio for this class allocates over the 42% of its assets in Alcohol producers. Third, surprisingly, this class has a low asset allocation to Tobacco producers, around 1% of its allocation for consumer Staples.

The same pattern is also identifiable if we look at the industry the Firms receiving the largest percentages of the total assets as investment. The top 3 firms receiving the biggest amount of assets are LVMH Moet Hennessy Luis Vuitton SE (4,22%), ASML Holding (4,19%), and Novo Nordisk AS (3,34%). These companies belong also the most represented sectors in the sample portfolio, respectively: Consumer Discretionary, Information Technology, Health Care.

Table 1.9 Top 30 Companies in the Reference Portfolio Article 6, Authors



5.3.2.2. ARTICLE 8 SAMPLE CHARACTERISTICS

The sample used for the analysis of the Article 8 funds' portfolios is the largest of the 3 counting 43 Compartments. These compartments invest in the shares of 972 different issuers domiciled in 30 around the world. Nonetheless, the issuers selected by this sample domiciled in Europe belong to 22 different countries. The exposure of the representative portfolio, while showing a similar exposure to France (19,1%), is higher in the UK and Germany markets if compared to the Article 6 ones. Furthermore, an increased contribution of firms belonging to South European markets is present. In particular, the Financials and Information Technology industries drive the increased relevancy of Italy and Spain leading their Percentages in the exposure respectively from 4,71%% to 6,04% and 2,42% to 4.36%. This is paired with a shrink in the exposure to the Switzerland, Netherlands, and Denmark Markets.

Table 1.10 Exposure to Countries Article 8 A, Authors

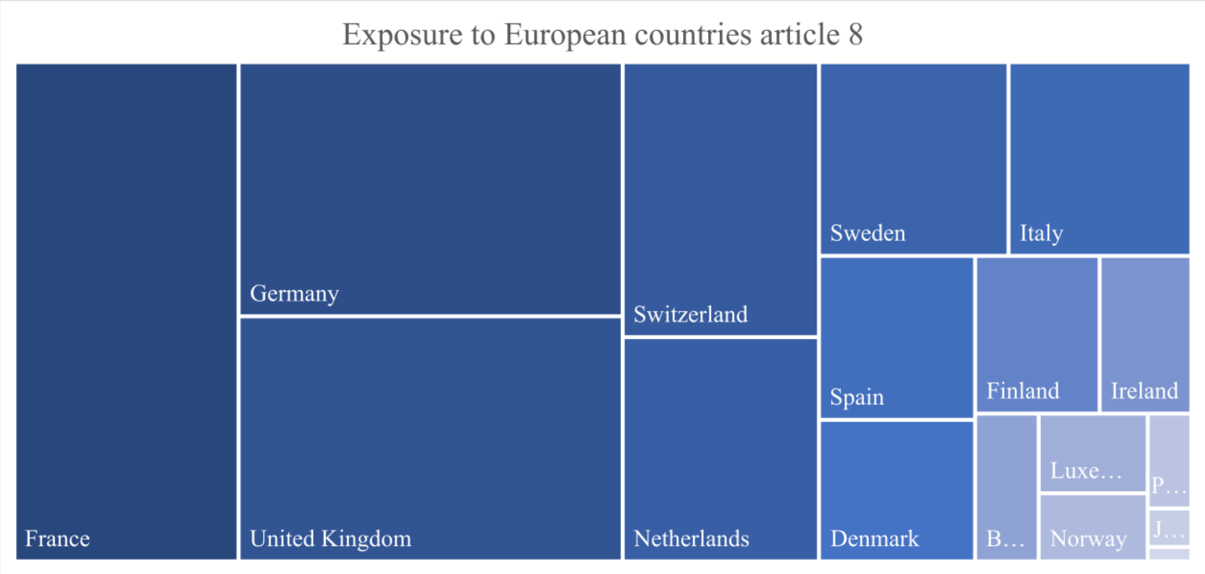
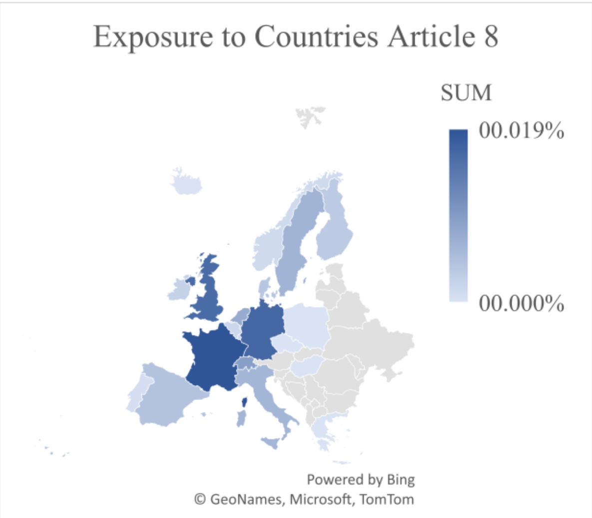
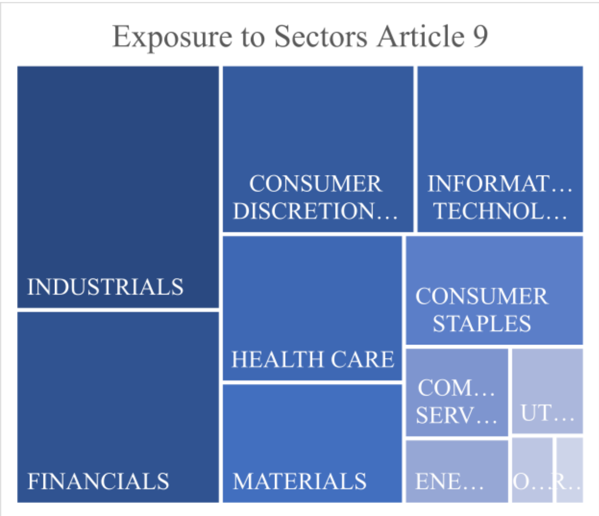


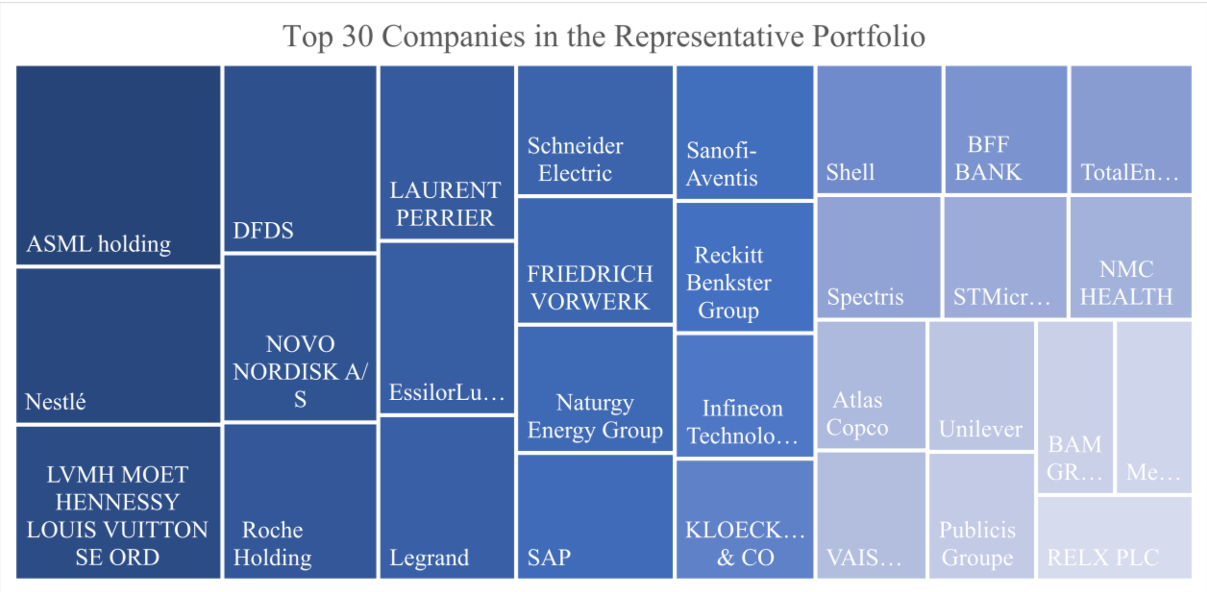
Table 1.11 Exposure to Countries Article 8 B, Authors & Table 1.12 Exposure to Industries Article 8, Authors





In terms of industries Consumer Discretionary and Financials raised their relevance in the portfolio with a respective increase from 12,96 to 13.39%, and 10,31% to 16,18% if compared to the Article 6 reference portfolio. Surprisingly, even with industry screening in place disclosed in the precontractual documents, the relevancy of Oil & Gas related Industries is still high with a 2,69% of the total assets allocated to them. This value corresponds to the 94,7% of the assets allocated to energy by the reference portfolio, a percentage that is even higher than the one of Article 6 funds (80%). The same unexpected results were found for issuers involved in the Tobacco industry: the reference portfolio of Article 8 funds invests in players involved in this industry the 4,5% of the assets allocated for consumer staples (8,25% of the total assets). In contrast, the commitment of this Article 8 reference portfolio into companies involved in Alcohol production is halved. From the 42% of Article 6 Compartments to the 20,7% of the asset allocated in consumer staples by Article 8 ones.

Table 1.13 Top 30 Companies in the Reference Portfolio Article 8, Authors



Regarding the holdings, even with a broader sample of issuers involved, we can see a higher dilution of the assets invested in the same companies. In particular, the total exposure to the top 30 companies in the reference portfolios changes from the 46% invested by Article 6 to the 22,55% allocated to the top 30 firms by the article 8 reference portfolio. Indeed, the same level of asset allocation is only reached if taking into consideration the top 91 companies for the Article 8 Reference Portfolio.

5.3.2.3. ARTICLE 9 SAMPLE CHARACTERISTICS

The same analysis performed for Article 6 funds was developed for Article 9 Funds. Given the investment universe restriction generated by even more strict Negative Screens and the reduced dimension of the Article 9 Sample, the number of issuers selected by these funds are 235, far less than the other two classes. As can be seen by the chart below the changes in the characteristics of the investment universe for this class of funds leads also to a change in the distribution of the investee across Europe. While Germany (14,46%) and United Kingdom (11,86%) remain favorable markets for the investment taken by Article 9 funds, France (30,16%) increased its relevancy in the asset allocation of the Reference Portfolio. This, in pair with a superior concentration of assets in fewer issuers leads to an exposure to fewer nations. The reference Portfolio generated with this class encompasses issuers from 17 nations worldwide 16 of which domiciled in Europe.

Table 1.14 Exposure to Countries Article 9 A, Authors

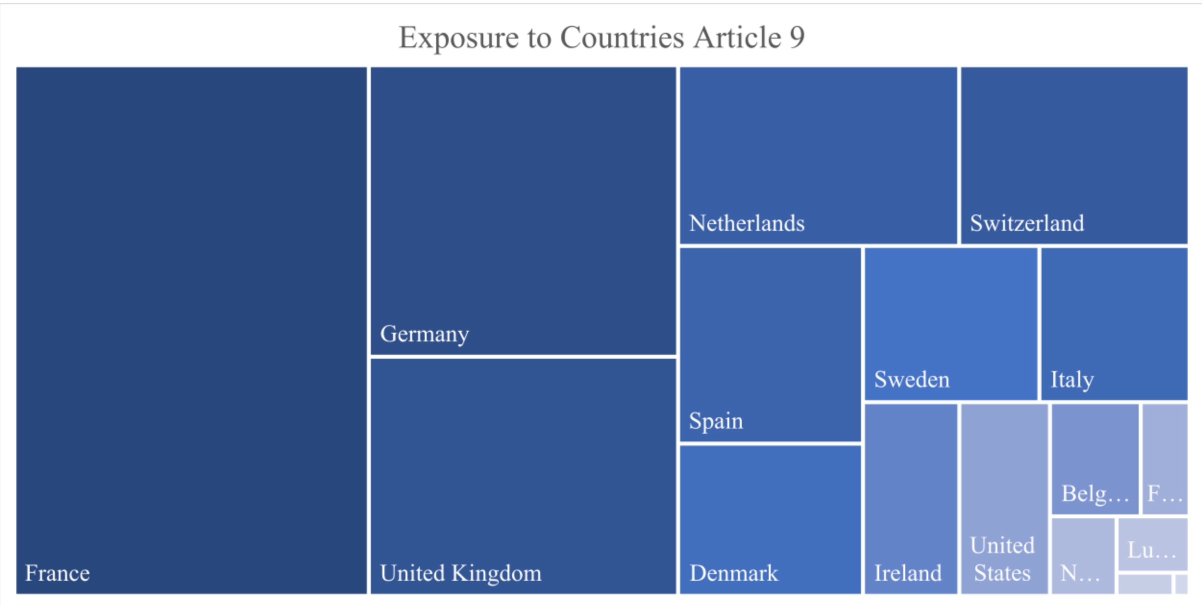
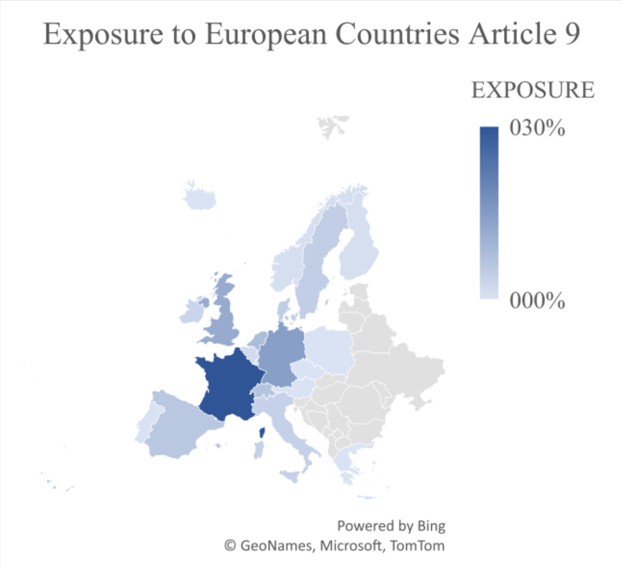


Table 1.15 Exposure to Countries Article 9 B, Authors & Table 1.16 Exposure to Industries Article 9, Authors



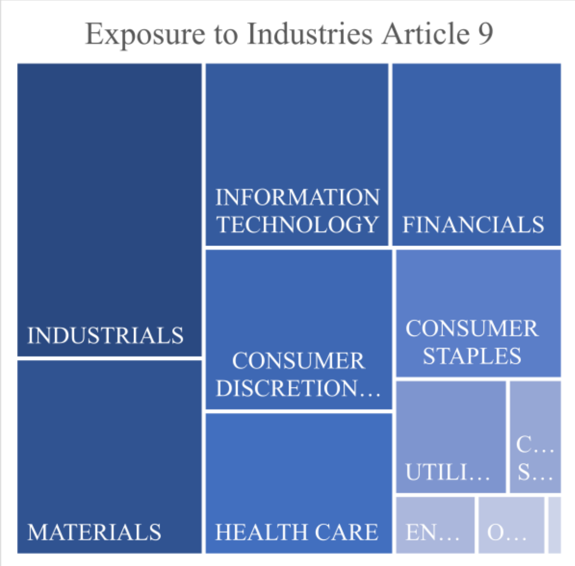
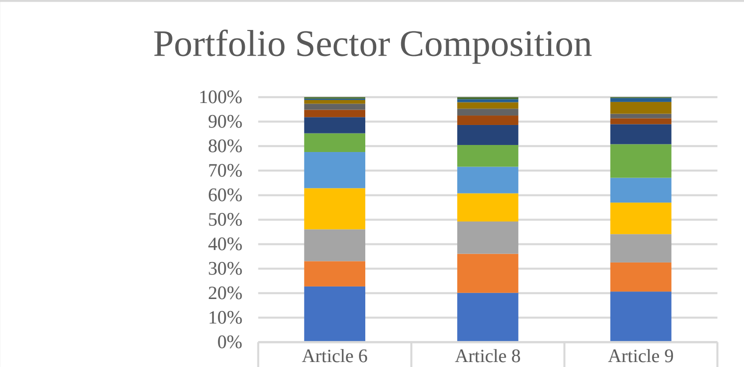


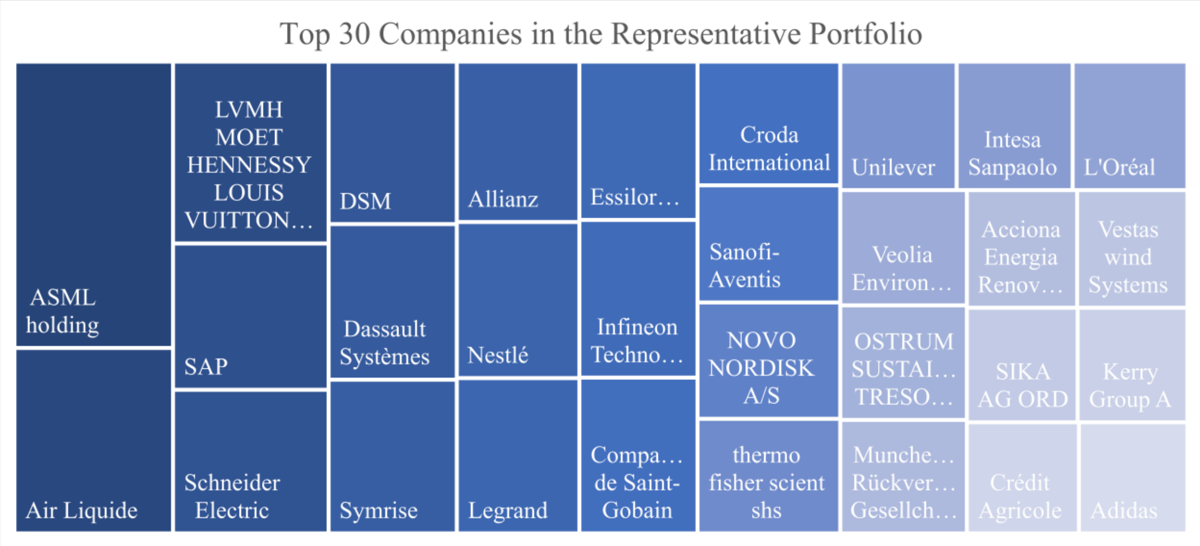
Table 1.17 Portfolio Sector Composition Comparison, Authors



	Article 6	Article 8	Article 9
REAL ESTATE	0,65%	0,845%	0,369%
OPEN ENDED FUND	0,50%	1,239%	1,560%
UTILITIES	1,52%	2,693%	4,886%
ENERGY	2,51%	2,838%	1,843%
COMMUNICATION SERVICES	3,00%	3,931%	2,362%
CONSUMER STAPLES	6,63%	8,253%	8,211%
MATERIALS	7,64%	9,047%	13,735%
HEALTH CARE	14,84%	11,005%	10,159%
INFORMATION TECHNOLOGY	16,82%	11,657%	12,890%
CONSUMER DISCRETIONARY	12,99%	13,397%	11,549%
FINANCIALS	10,33%	16,181%	11,913%
INDUSTRIALS	22,82%	20,442%	20,718%

The analysis of the exposure to different sectors highlighted a still high exposure to the Industrial sector and to Health Care which remain almost stable. Nonetheless, the allocation of investment to Materials, Utilities and Consumer staples in the portfolio increased. The exposure if compared to the base case (Article 6) grew respectively from 7,64% to 13,736%, 1,52% to 4,89%, and 6,63% to 8,21%. Regarding Materials we can see a great contribution to the increase given mainly by 5 different companies. Three of them also entered the top 30 companies in the reference portfolio and are: Air Liquide (2,42%), DSM (1,72%) and Symrise (1,63%).

Table 1.18 Top 30 Companies in the Reference Portfolio Article 9, Authors



Looking at the top 30 holdings of the representative portfolio for Article 9 funds it can be seen a higher concentration in the allocation of assets if compared with both the Article 6 and 8 classes. Furthermore, the composition of the top 30 holdings lists change radically across the 3 Reference Portfolios. Only 5 issuers present in the representative list for article 6 funds manage to be included in the top 30 holdings of the Article 9 class. In particular, 9 members of the top 30 holdings for article 9 funds do not receive any investment from the funds present in the Article 6 funds class. In contrast, smaller differences are observable if looked at the comparison between the holdings composition of Article 8 and 9 funds. Out of the top 30 holdings of the Article 8 reference Portfolio, only two investees are not held by the Article 9 class and 11 members of the list are present in both top 30 lists. Nonetheless, stretching the list of top holdings of Article 8 funds to include the same % of exposure of the representative portfolio of Article 9 ones, 8 more members are present in both portfolios.

It is nice to notice that in the Top 30 holdings for Article 9 funds we can find 4 players coming from industries for whose business model the transition to a more sustainable economy is central.

- Waste Management
- Utilities – Renewables
- Health and nutrition

5.3.3. ESG Metrics Considerations

To control whether the ESG classification for the funds reflected also in superior ESG performances according to an external evaluator we decided to gather 5 ESG ratings for each compartment. The ratings we observed were:

- The comprehensive ESG Rating for each sub-fund
- The Controversy Score
- The Environmental Score
- The Social Score
- The Governmental Score

According to the following data, we observed a clear patter of improvement along the 3 E, S and G Metrics. The same patter was not found for the controversy score which might be due to the sole reliance of Article 6 funds on Norm Base Exclusions present at promoter level. This is done according to the SFDR Requirements to include the consideration of ESG Risks in the investment process also for article 6 Funds.

Table 1.19 Average ESG Scores for SFDR Fund classes, Authors

Average ESG Scores for each SFDR category

	ESG overall	Controversy Score	Environmental	Social	Governmental
Article 6	73.9375	77.1875	70.9375	76.8125	72.1875
Article 8	76.46511628	73.44186047	74.34883721	79.76744186	73.72093023
Article 9	79.125	73.75	78	83.125	73.875

In order to confirm whether this pattern was heavily influenced by the ESG characteristics of the Fund Promoter or was reflecting the characteristics of the Portfolio Holdings we took the ESG Ratings of the investee from Refinitiv. In order to check for this trend, we calculated a weighted average of the same categories of ESG Ratings extracted from the database and used for the Fund class level. Our results highlighted how ESG characteristics and pattern present at SFDR class level held true also when looking at companies belonging to the reference Portfolio using data from Refinitiv.

Table 1.20 Refinitiv ESG Ratings Average, Authors

	ESG overall	Controversy Score	Environmental	Social	Governmental	Overall ESG Score
Article 6	71.30633333	87.277	68.85733333	74.00233333	69.97533333	66.82667
Article 8	78.3425	70.49535714	73.89357143	82.05321429	76.17785714	66.715
Article 9	81.77392857	60.66678571	81.64071429	86.17107143	76.58107143	67.93036

5.4. Performance Analysis

The next step of the research is the calculation and analysis of the 67 funds in our sample. We calculated the average monthly returns of the funds from 30/11/2012 to 31/10/2022. We included only 40 funds, excluding the ones constituted after the 30/10/2012. For the same time horizon, we also calculated the monthly returns of six indexes that we consider as benchmark reference for our comparison. We adopeted the six indexes mentioned in most of the funds' information sheets. The results, classified according to the SFDR regulations, are in the Table 1.21.

Table 1.21 Average 10Y Monthly Return of the Funds, Authors

FUND	EU SFDR	AVERAGE 10Y MONTLHY RETURN
Mirova Europe Environmental Equity Fund	Article 9	0,55%
AXA WF Framlington Sustainable	Article 9	0,42%
Mirova Euro Sustainable Equity	Article 9	0,41%
AXA WF Framlington Sustainable Eurozone	Article 9	0,40%
BL Equities Europe B	Article 9	-0,49%
Candriam Sustainable Equity Eur	Article 9	-0,71%

FUND	EU SFDR	AVERAGE 10Y MONTLHY RETURN
Memnon European I	Article 8	1,04%
AS SICAV II European Smaller Cap	Article 8	0,82%
Candriam Equities Europe Inno	Article 8	0,59%
JPM Euroland Equity	Article 8	0,59%
BNP Paribas Europe Small Cap	Article 8	0,49%
Candriam Equities Europe Opti	Article 8	0,48%
FAST Europe A	Article 8	0,47%
Allianz Europe Equity Growth AT	Article 8	0,45%

Amundi Funds Euroland Equity	Article 8	0,43%
JPM Europe Select Equity	Article 8	0,43%
Robeco Sustainable European Sta	Article 8	0,42%
Robeco QI European Equities	Article 8	0,41%
Schroder ISF Europe Special Situ	Article 8	0,40%
Schroder ISF EURO Equity	Article 8	0,39%
BNP Paribas Euro Equity Classic	Article 8	0,33%
Allianz Euroland Equity Growth	Article 8	0,27%
BNP Paribas Europe Equity Class	Article 8	0,26%
JPM Europe Strategic Growth	Article 8	0,24%
Fidelity Funds European Growt	Article 8	0,21%
JPM Europe Strategic Value	Article 8	0,19%
MFS Meridian Funds European Val	Article 8	-0,39%

FUND	EU SFDR	AVERAGE 10Y MONTLHY RETURN
Janus Henderson HF Pan European	Article 6	0,85%
BGF Continental European Flexib	Article 6	0,67%
Threadneedle European Small	Article 6	0,63%
Threadneedle Pan Europ Small	Article 6	0,59%
Fidelity Funds European Small	Article 6	0,59%
BGF European Special Situations	Article 6	0,50%
Janus Henderson Continental Eur	Article 6	0,49%
Exane Funds 2 Exane Equity	Article 6	0,49%
Ninety-One GSF European Equity	Article 6	0,47%
BGF Euro-Markets A2	Article 6	0,43%
LO Funds Europe High Conviction	Article 6	0,43%
BGF European A2	Article 6	0,38%

M&G (Lux) European Strategic Value	Article 6	0,12%
BGF European Equity Income A4G	Article 6	0,08%

Table 1.22 Average 10Y Monthly Return of the Indexes, Authors

INDEX	AVERAGE 10Y MONTLHY RETURN
STOXX Europe 600 Net Return Index	0,64%
MSCI EMU Net Index	0,64%
MSCI Europe Net Index EUR	0,62%
FTSE Dev Europe Return Index	0,61%
EURO STOXX Small EUR Price Index	0,58%
MSCI Int Europe Growth Price Index	0,56%

Once obtained the averages monthly return for each fund, we proceeded by calculating the average monthly return for each group of funds with the same SFDR classification. We obtained the results in Table 1.23.

Table 1.23 Average 10Y Monthly Return of the SFDR class, Authors

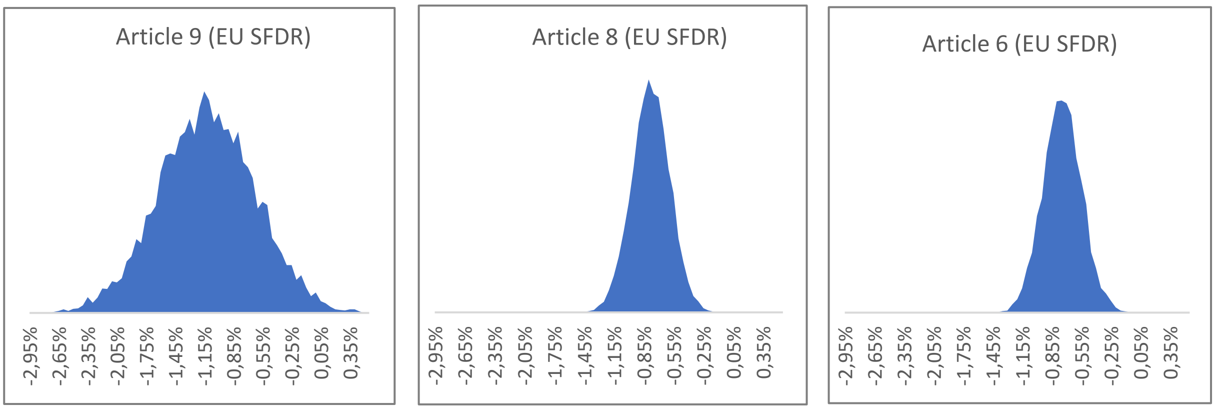
	Article 9 (EU SFDR)	Article 8 (EU SFDR)	Article 6 (EU SFDR)	BENCHMARK
Average 10 years	0,10%	0,40%	0,48%	0,61%

It is notable that funds with SFDR scores that suggest high sustainability have on average lower performances than the funds with SFDR scores linked to lower attention to sustainability terms of returns.

Funds classified with SFDR article 9, the highest sustainability score, have an average return of 0,10% over the 10-year period, SFDR article 8 funds have +0,40% and SFDR article 6 have +0,48%. The funds in the sample have on average lower performances than the 6 benchmark indexes that have an average return of 0,61%.

We also calculated the distribution of returns for each SFDR category present in table 1.24.

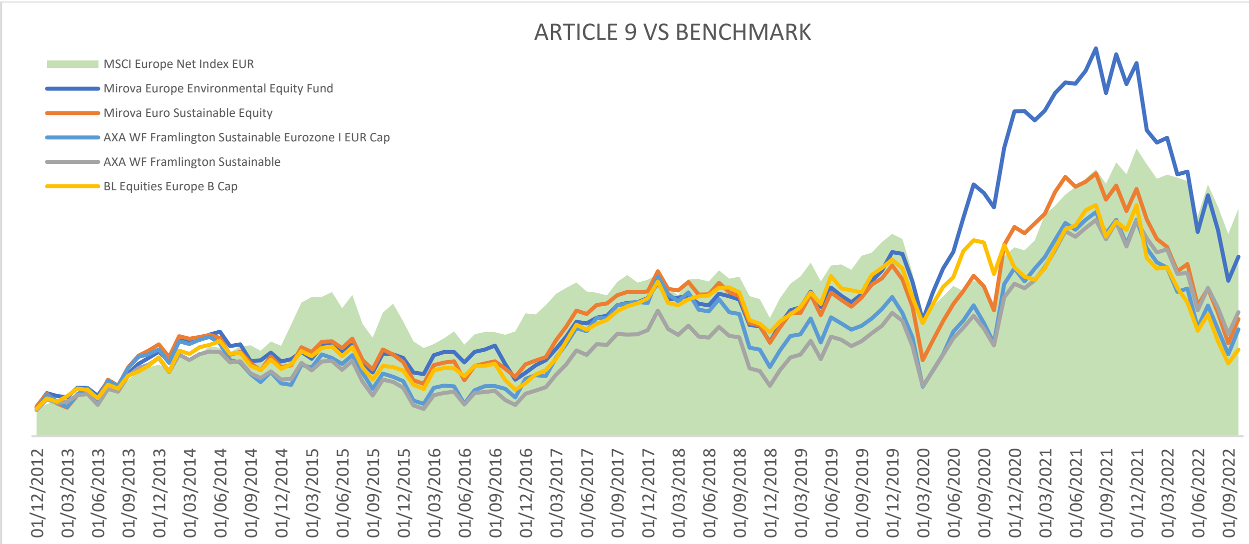
Table 1.24 Distribution of Returns for SFDR class, Authors

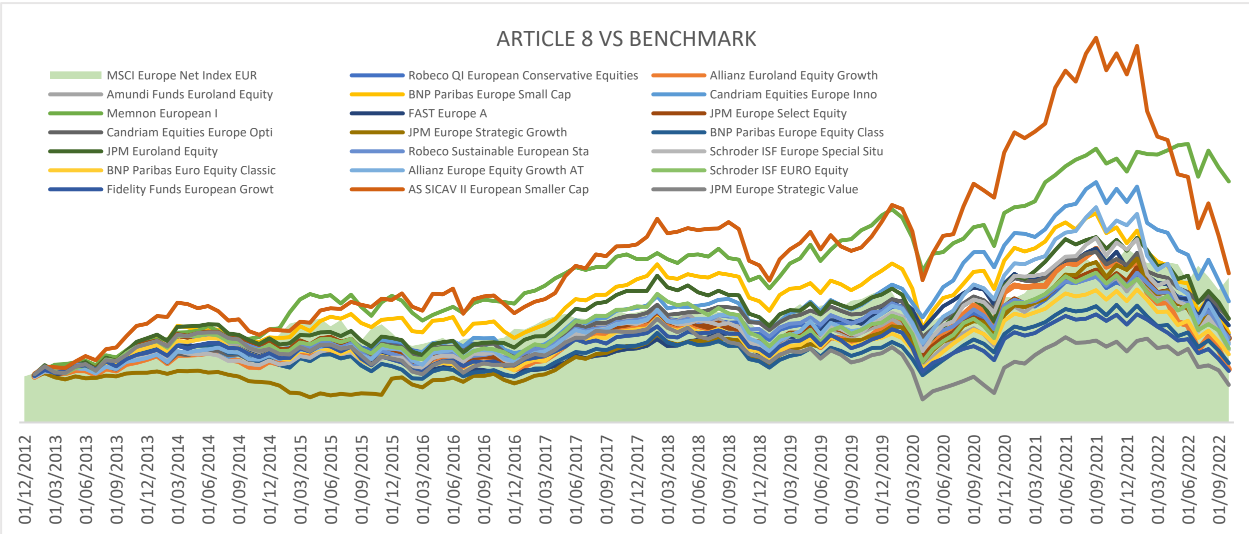


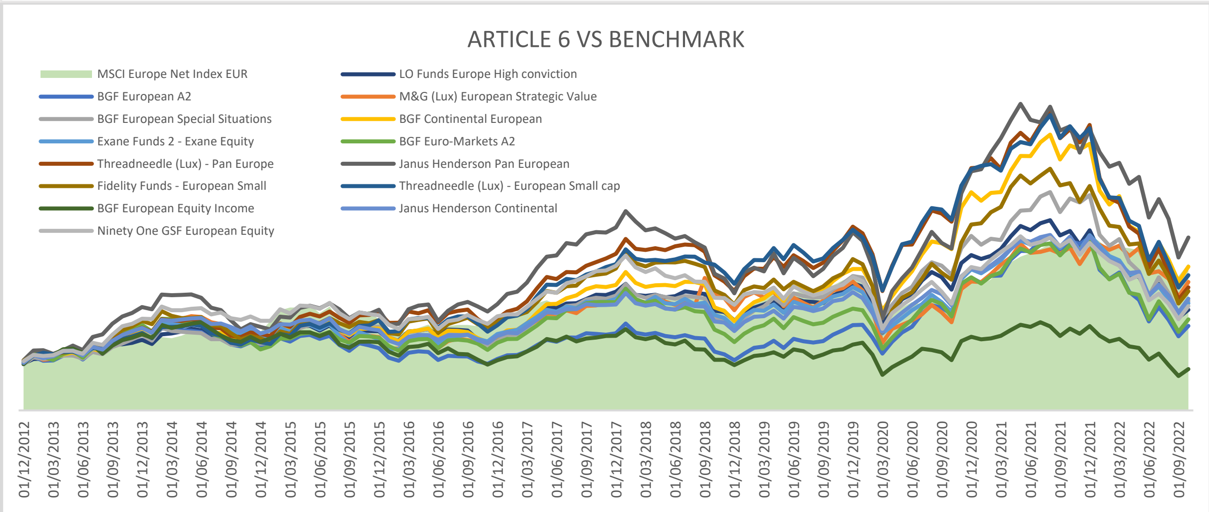
As the graphs shows, funds with SFDR article 9 and 8 have also higher variability in terms of performances achieved by different funds. The lowest performing SFDR Article 9 fund achieved on average -0,71%, the top performing +0,42%. The lowest performing SFDR Article 8 fund achieved on average -0,62%, the top performing +1,33%. The lowest performing SFDR Article 6 fund achieved on average +0,03%, the top performing +0,85%. The variability between the six benchmarks is very low, as their return are similar over the entire time horizon.

To compare the trend of the different funds with respect to the benchmark, we built 3 different graphs that show the trend of each fund and the benchmark considering the price at 31/12/2012 equal to 1 and then evaluating the monthly increase or decrease. In this section we adopted as benchmark only the MSCI Europe Net Index which is considered as the main reference index in the European market.

Table 1.25 Funds Returns vs Benchmark, Authors







The first graph shows that only 1 SFDR Article 9 fund outperformed the benchmark, the others had equal or lower performances with respect to the index.

The second graph shows that about half of the SFDR Article 8 funds achieved better performances than the benchmark, but the other half underperformed the index.

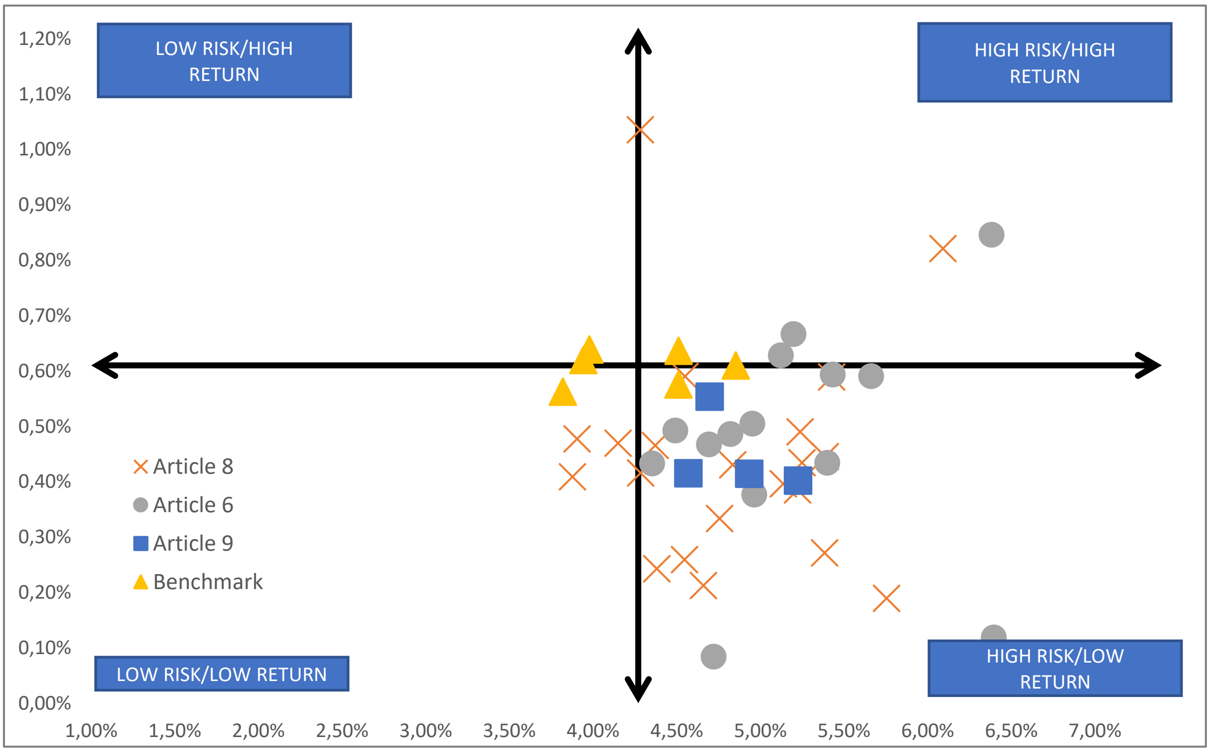
Regarding SFDR Article 6 funds, many of them overperformed the benchmark during the 10-year period, while some of them obtained about the same performances. Only 1 fund performed very bad with respect to the index.

It is interesting to analyze the last years, impacted by Covid 19 at first and then the outbreak of war in Ukraine in 2022. The trend of funds returns in the sample at the outbreak of the pandemic, in the following months and then in the recovery period, followed the ones of the benchmark indexes.

Different situation regarding the period after the outbreak of the war in Ukraine. The Article 9 fund obtained much lower returns than the other categories with respect to the benchmark indexes. This is symptomatic of the loss of attention on sustainability by investors, that were more concerned by other aspects (i.e. inflation, energy…) to protect their returns.

To assess the performances of the funds both in terms of returns and volatility, we built the risk/return matrix, that shows on the x-axis the volatility in terms of standard deviation of returns and on the y-axis the average return.

Table 1.26 Volatility and Returns, Authors



The 4 quadrants show the position of each fund with respect to the average return and volatility of the benchmark indexes. Most funds are in the lower right quadrant, the one characterized by the worst performances both in terms of return and volatility.

Anyway, most funds have performances close to the ones achieved by the benchmarks, as their position in the matrix is not far from the intersection of the two axes.

Looking at the different analysis, we concluded that SFDR Article 9 funds underperformed the other categories and the benchmarks, both in terms of return and volatility.

Also, different SFDR Article 9 funds demonstrated very different performances, while Article 8 and Article 6 funds showed much similar performances with the funds in the same category.

The outcome of the performances analysis is that investors to pursue sustainability must give up a certain amount of return and undertake higher risks.

Anyway, Article 8 funds ensure a good exposure over sustainable assets and showed much higher returns than Article 9 funds. Their performances are not far from the Article 6 performances that are for sure the most performing funds in our sample.

As stated before, Article 6 funds are the most performing in the sample, but still they underperformed on average the benchmark indexes during the entire 10-year period of the analysis. This means that there is not a premium return for investors that buy less sustainable assets.

The results of our analysis, while being based on a heterogeneous sample in terms of size of the 3 classes are quite representative of the market. In particular, if looking at the found launches in the three different SFDR categories in the past 5 quarters the following percentages are present: 13% of the newly launched funds belong to the article 9 category, 39,5% belong to the Article 8 funds category and the remain 47,5% to the Article 6 category.

To drill down on possible reasons behind the performance achieved in the past two years by the analyzed funds, we gathered UCITS fund market data around Net Inflow and Outflows of assets. The data provided by one of the most important observatory of Luxembourgish market for funds (AGEFI) seem to be in discordance with the results of the performance analysis performed. Luxembourg Domiciled funds in the AGEFI analysis are shown to have suffered of a negative trend in the capacity to attract assets. In particular Net Inflow data show negative amounts in the first and second quarter of 2022. Nonetheless, AGEFI research showed how Article 8 and 9 are the main responsible for this results. Article 8 and 9 funds suffered of a total Net Outflow of respectively -30,3 bn and -15,7 bn euros. These data are different from the ones of

Article 9 funds which while suffering from a huge reduction in the Inflow (+22 bn EUR in Q4 2021, +10 bn EUR in Q1 2022), remained positive (+6 bn EUR in Q2 2022).

6 Conclusions and future developments

Given the current speed of climate change an action should be taken, more and more population around the globe suffer every year extreme heat stress and face disruptions caused by the Climate change.

Public Institutions are trying to lead the change by publishing new regulations to obstacle the stickiness to business practices that are harming the environment and negatively exploiting resources and people. Environment, Social and Governance Pillars have become central in the regulatory actions and the European Union aims at establishing itself as a Sustainability Leader. The role of public institutions in the fostering of ESG investing have been thoroughly analyzed by previous literature. The outcome of the main contributors on the topic (I.e., Armstrong and Green 2012, Ilhan 2020, and Bassen 2022) highlighted how the publication of new regulation is not enough. Institutions should support the transition with real evidence of increased social welfare associated with the reduction in freedom for firms, should include stakeholders, and promote the adoption of voluntary ESG actions. This would generate a more effective legislative system able to foster a real transition.

Public Institutions are not the only force that poses a peak importance onto the shift towards a more sustainable economy. Public Institutions are complementing the external pressures generated by the shifting expectations of stakeholders around the role of business in the Sustainability Transition. Employees, Investors and Customers are other Stakeholders classes that have become top of mind for Managers in their need for a sustainability transition. Activism and external advocacy for ESG have been underlined to be the greatest momentum driver for firms on this transition.

The private sector should not leave the task of tackling this problem alone but should engage in sustainability actions to foster the ability of future generation to prosper.

This would not only generate positive externalities but would also make firms more resilient and sustainable in their business model. Indeed, firms are now facing unprecedented distress and disruption of their business models generated by Climate Change. As introduced in the previous chapters firms in many sectors are adopting clear strategies to reduce their carbon footprint, contributing to the generations of solutions to climate change, and comply with regulation requirements. Nonetheless, the strategies adopted by players positioned at higher stage of the value chain have yet not been investigated.

Crucial members of the Sustainability Transition value chain are the ones belonging to the Financial Sector. Their capacity to finance with private capital ESG actions has a multiplying effect on the effectiveness of the ESG practices adoptions by investee, not only by supplying the necessary capital for these long-term investments, but also by influencing through voting and engagement the management of the investees and debtors. The pressure posed by ESMA on the adoption of practices considering ESG in this sector, together with a superior ESG advocacy by the investors, seems to have started a change in the industry. In particular, the data gathered by our research present a commitment growing exponentially on the long term on ESG and sustainability related investment. This while excluding the results of certain setbacks on the topic caused by black swans in the market like the Covid Pandemic and The Russian-Ukrainian War. This stall in ESG actions caused by Covid and War has been acknowledged by Deloitte Surveying the C-level of a broad sample of market players which displayed a gap between sentiment and actions.

Owing to this, our work focused onto ESG in the Investment Management Industry. With the aim to provide the reader with a holistic view of the current context we addressed the topic from different perspective. After presenting in the section "THE CURRENT RELEVANCE OF ESG RELATED RESEARCH" ESG-related topics with a broad market view, our work develops an analysis aimed at providing a clear understanding of our analysis sample to the readers in the sections: “INTRODUCTION TO THE IM INDUSTRY AND UCITS FUNDS”.

In the first section, we firstly investigated the nature of ESG and presented how the multifaceted nature of its definitions generate complexity in the market but also open to different opportunities to address the problem by firms and investment funds. Second, we provided a picture on the AS IS and TO be status of the Regulations around Sustainability and how those are impacting the Investment Management industry. The financial sector saw a steady increase of Regulations addressing sustainability which are hard to navigate and have very strict requirements. In particular, the one considered the biggest challenge to be faced currently in the market is SFDR which was one of the main focuses of our research. Third, we addressed how the market is trying to face the regulatory complexity and navigate through the challenges posed by the need for adopting Sustainable Practices and objectives. The proliferation of framework to sustainability the market player disclosure and adoption have been a relevant phenomenon in this context. The most prominent to classify Sustainable activities are SDGs, UN Global Compact, the ones driving the disclosure GRI, SASB, and TCFD, while the ones analyzing the sustainability model of IM firms could be identified as the one by Eurosif.

Next, we presented an analysis of the Investment Management Industry and of the player involved in the Investment Value Chain across Front, Middle and Back Office. To better understand the selection of the peer group, we presented the complexity of available fund structures for investors and the financial products they provide with a focus on the Mutual Funds Segment. Furthermore, in this section we presented then benefits and risks to be borne by investors investing in these products with a focus on Sustainability Risk. This was done since Sustainability Risk was highlighted as one of the main differentiators held by Sustainable Funds. Furthermore, this risk was given a peak importance and attention by regulators and fund managers in the Sustainability area.

After presenting these factors and focusing on the last-mentioned Framework deeply analyzed in the previous sections, our analysis investigated through the analysis of Prospectuses, Sustainable Policies and other pre-contractual documentation the approaches and strategies adopted by Mutual funds to contribute to this sustainability transition. While all article 9 funds pursue Impact Generating ESG investment strategies, both Impact Aligned and focused, Article 8 funds in the sample show different level of ESG ambitions and encompass different approaches to achieve this classification. Whilst we did not find any compartment adopting exclusion focused strategy, we found different level of ambition in the sample with 5 of them adopting Basic ESG strategies and 33 of them embracing Advanced ESG ones. Within this second group we highlighted the presence of certain funds adopting additional approaches and this led us to investigate whether the level of ambition even within a single class, was having different impacts on the financial performances of the fund later analyzed. Thus, during the performance analysis we decided to group compartments that could be classified according to upcoming SFDR amendments as Article 8+ together with Article 9 ones. Indeed, these group of Article 8 funds adopts more similar approaches to the ones of Article 9 than to the ones of other Article 8 funds.

The developed analysis around the portfolio holdings of the three different class of funds created with our sampling highlighted significant differences in the composition of compartments holdings across the three classes (I.e., Article 6, 8 and 9). In particular, this was highlighted through the creation of a reference portfolio taking into consideration the weighted average of the holdings. The limited investment universe available for Article 9 funds led to a superior concentration of allocated assets in certain countries and industries. In particular, Article 9 funds allocated more than 30% of their assets in equities of issuers coming from France and operating in the GICS Industrials and Materials Sectors. This profoundly differs from the exposure level of the other two classes, suggesting a real shift in issuers selection within the investment selection process.

Furthermore, an analysis around the ESG ratings of the sample highlighted how the different approaches and classification related to SFDR and Eurosif framework lead on average to superior non-financial performances.

The last analysis we performed was the one regarding the performances achieved by investment funds classified as sustainable according to the SFDR classification. To do that we firstly developed and extended analysis of the literature, on the other hand we developed a quantitative analysis of the financial returns of our sample.

A large body of literature has analyzed both in a quantitative and qualitative way the causal relationship between high ESG Performances and superior long-term financial ones. While presenting in a separate section the outcomes of theoretical models, our analyses focused on quantitative papers. The selected studies follow mainly three different methodologies: index-based studies, multivariate regression studies and event studies. The outcomes of the research are conflicting and somehow methodology dependent suggesting a positive correlation in most piece of evidence using index-based and event-based methodologies while showing no correlation in multivariate regression models. In this furrow our research adopted an index-based approach with a focus on the performances achieved by Equity Mutual Funds domiciled in Luxembourg, European fund capital.

Index Based studies around the impact of firms' non-financial performance on their long-term value have started in the 70's from the research of Moskowitz (1972) who tried to identify responsible companies overperforming the market. The reasons behind the apparently superior performances were investigated by different scholars. Important is the contribution of Hamilton (1993), Statman (2000), Jensen (2002).

Hamilton identified two channels linking these two performances in the Changes in cost of capital and in returns. The presence of overperformance was found by Statman both for SRI indexes and Mutual Funds which have been the topic of our research. The outcome of this authoritative research is in contrast with our findings, nonetheless, Statman also highlighted a somewhat superior risk profile embedded in SRI investing which we were able to identify. Our analysis also considered the outcomes of Jensen research which highlighted a strict correlation between Stakeholders' consideration in Firms' strategies and superior performances. In order to do this, we performed a deep analysis of the investment strategies adopted by the members of our sample and compared them with the financial returns observed in the market. While not contradicting Jensen's outcomes, the findings of our research might appear to be doing so. However, the focus of Jensen's analysis was on firms' and not on Investment funds' performances, thus, the results we obtained might testimony the presence of other factors influencing the financial performances of this different type of players. The main external shareholders' class that has a direct impact on shares' value of Mutual Funds are investors with their demand. Demand might be influenced by factors that have to be searched more in the market conditions. The returns we were able to identify might suggest a shift of attention in investors preferences identified by other authors as possible reasons high ESG stocks outperformance in the past.

Covid and the War in Ukraine led firms to adopt strategies to face these disruptions not coming from Environmental Risks setting aside their ESG efforts in favor of more short term objectives.

Furthermore, our findings are somewhat in line with the results of another important contributor highlighting superior performances of firms having superior Shareholders rights and influence of Shareholders on firms decisions. This might be one of the reasons influencing negatively Mutual Funds' performances, which showcase a superior independence between the portfolio manager and the investors in the fund.

Likewise, our results do not discord with the ones of Kempf et al. (2007) which highlighted superior performances through the application of socially responsible screenings. In our sample, the funds having the lowest ESG ambitions and relying solely on negative screenings methodologies to be classified as sustainable achieve better performances than their Article 8 peers. Nonetheless, the overperformance of these funds in comparison with the whole market was not detected by our analysis which suggest a different outcome, more segment specific.

Nonetheless, a more careful analysis of our outcomes supports the view of another important and more recent research on this topic. The higher ability we found to retain investment by Article 8 and 9 funds in the market in this turbulent market conditions is in line with the ideas presented by Hoepner (2013) which sheds a light on the recognition by investors of superior long term risk management and return enhancement. The Net outflow observed in the last quarters has been observed as lower for Article 8 and 9 funds if compared to the Article 6 Peers.

Another important study which uses the same timeframe is the one of Brzeszzynki et al (2014) which highlights superior performances for high SRI stocks in contrast with our findings. This might be due to the focus of his study investigating the performances of SRI portfolios with a focus on the British SRI market.

Another important contributor for the Index based returns was the research of Khan et al. (2016) which highlighted a positive correlation between ESG performances and financial ones. This paper used MSCI ratings as a sole proxy of ESG performances for firms, thus, in our research we decided to test his findings using ESG data from another provider (I.e., Refinitiv). This was done also following the present criticism in literature for the adoption of a single ESG data provider due to the lack of ESG rating convergence. Furthermore, our research wanted to enlarge the results of this paper also to a different kind of issuers in the market (I.e., the Mutual Funds).

While the aforementioned authors found a positive correlation between non-financial performances and long-term value for the firms, much research found no or negative correlation between the two. One of the most authoritative studies on this correlation which takes into consideration Mutual Funds for the analysis of performance is the one of Diltz (1997). This study found how investment expenses and transaction costs and stock returns are able to explain persistence of performances for this class of investments. Thus, eliminating the possibility of the existence of difference between ESG and non ESG funds. Furthermore, other studies like the one Gezcy et al. (2009) highlighted how responsible Mutual Funds carry superior management fees and other investment costs. This phenomenon, even if not directly observable from the fee schedule applied by ESG Mutual Funds due to matters of confidentiality, might be one of the reasons behind the lower performance achieved by the funds with highest ESG ambition in the selected sample.

Other reasons behind the not observed correlation between ESG scores and financial performance, as highlighted by Halbritter and Dorfleitner (2015), is the increased ability of investor to price the ESG characteristics of a firm or fund thus leading to a reduced presence of unexpected superior performances. Barber et al. (2019) focusing their study on the Fund Industry, found that investors are willing to exchange financial performance for other forms of non-pecuniary utility. This might explain the willingness of investors to keep Article 8 & 9 in their investment portfolios even with the poorer financial performance highlighted by our study.

A recently published study by Bolton and Kacperczyc (2022) found superior stock returns as associated to higher growth rates of carbon emissions even while considering the pricing in the market of the future superior transition risk associated with carbon intense investees. This Carbon premium associated with carbon intensive industries influence the returns for Funds and might be one of the main factors behind the result found by our research.

Our thesis research finished during the 2022 United Nations Climate Change Conference (COP 27) which was held in Sharm El-Sheikh, Egypt. The conference took place against a backdrop of energy crisis, economic concerns, and extreme weather events worldwide. The members in attendance participated with the aim of reaching an "historic" act to fight climate change. The outcome of this conference might be crucial for the future path of ESG investing and we ought to see concrete results coming from it.

Furthermore, we are conscious of the limits of our research. The availability of data was for us one of the biggest issues, the lack of possibility to apply model we thoroughly analyzed in the Literature Review. The access to I/B/E/S analyst forecast would have been necessary for the calculation of the Implied Cost of Capital which we had to exclude from the scope of our analysis and could have brought relevant information about prospects for the returns of the analyzed peer group. Furthermore, our analysis focused on equity funds which in an overall environment of interest rates rises might have suffered the increased cost of capital. In particular, the value of Sustainable Funds which benefitted in the past from the pricing of a substantially lower cost of capital might have been influenced heavily. Another limit which can be highlighted of our analysis resides in the selection of funds coming from different promoters and relying on different management companies. Indeed, those players apply different Fee Schedules which influence considerably the returns of the funds in the financial markets. The origin of the Promoter might influence the identification of investees given the possibility of the presence of a difference in the knowledge of different markets. The same factor might also influence the choice of investee also for the influence of perceived psychological distance of issuers coming from different countries and our analysis did not analyze deeply this phenomenon.

The analysis done has been performed using the publicly available information, however, given the changing legislative environment and the approaching of important regulatory deadlines information disclosed might have been not fully representative of the operating model of the analyzed funds. Lastly, one of the biggest limits of our research is that Investment Management Sector in this year has faced Liquidity issues given the high levels of Net Outflows

Given the limitations present in our research we suggest the following development and further research. Our analysis might be enlarged by considering a different set of fund in terms of AuM, Legal Structure and Domiciliation. Further research might be done considering different ESG Metrics and an analysis of the returns through the usage of Event Studies and Multivariate Regression Models might be done uncover different patterns.

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A Appendix A

A.1. Sub-Fund Sample

Domicile	Legal Status	Promoter/Ini-tiator	Promoter Origin Code	Fund Name	Sub-Fund Name	Region & Category	Asset Allocation	Sustaina-bility	Curre-ncy	TNAV USD
Luxembourg	SICAV	BlackRock Financial	US	BlackRock Global Funds	Continental European Flexible Fund	Europe	Equities	Article 6	EUR	12.010.923.661,44
Luxembourg	SICAV	Allianz Global Invest	Germany	Allianz Global Investors Fund	Allianz Europe Equity Growth	Europe	Equities	Article 8	EUR	10.245.034.348,02
Luxembourg	SICAV	FIL	Bermuda	Fidelity Funds	European Growth Fund	Europe	Equities	Article 8	EUR	8.309.509.444,43
Luxembourg	SICAV	MFS Investment Ma	US	MFS Meridian Funds	European Value Fund	Europe	Equities	Article 8	EUR	6.000.309.006,45
Luxembourg	SICAV	Eleva Capital	France	ELEVA UCITS Fund	Eleva European Selection Fund	Europe	Equities	Article 8	EUR	5.831.568.242,03
Luxembourg	SICAV	FIL	Bermuda	Fidelity Funds	European Dynamic Growth Fund	Europe	Equities	Article 8	EUR	5.552.816.440,71
Luxembourg	SICAV	Amundi	France	Amundi Funds	Euroland Equity	Europe	Equities	Article 8	EUR	4.430.288.671,03
Luxembourg	SICAV	Amundi	France	Amundi Funds	European Equity Value	Europe	Equities	Article 8	EUR	3.605.372.064,38
Luxembourg	SICAV	Natixis	France	Mirova Funds	Mirova Europe Environmental Equity Fund	Europe	Equities	Article 9	EUR	3.598.437.310,34
Luxembourg	SICAV	Schroders	UK	Schroder International Selection Fund	EURO Equity	Europe	Equities	Article 8	EUR	3.348.690.583,55
Luxembourg	SICAV	MFS Investment Ma	US	MFS Meridian Funds	European Research Fund	Europe	Equities	Article 8	EUR	3.319.671.306,55
Luxembourg	SICAV	Janus Henderson In	UK	Janus Henderson Fund	Continental European Fund	Europe	Equities	Article 6	EUR	2.530.562.843,10
Luxembourg	SICAV	BlackRock Financial	US	BlackRock Global Funds	European Equity Income Fund	Europe	Equities	Article 6	EUR	2.516.138.366,14
Luxembourg	SICAV	Allianz Global Invest	Germany	Allianz Global Investors Fund	Allianz European Equity Dividend	Europe	Equities	Article 8	EUR	2.497.518.473,32
Luxembourg	SICAV	Columbia Threadne	US	Threadneedle (Lux)	European Smaller Companies	Europe Small Cap	Equities	Article 6	EUR	2.482.029.374,54
Luxembourg	SICAV	DNCA Finance	France	DNCA Invest	SRI Europe Growth	Europe	Equities	Article 8	EUR	2.471.563.097,08
Luxembourg	SICAV	Allianz Global Invest	Germany	Allianz Global Investors Fund	Allianz Euroland Equity Growth	Europe	Equities	Article 8	EUR	2.412.312.452,08
Luxembourg	SICAV	BlackRock Financial	US	BlackRock Global Funds	Euro-Markets Fund	Europe	Equities	Article 6	EUR	2.310.407.774,81
Luxembourg	SICAV	Candriam	Belgium	Candriam Equities L	Europe Innovation	Europe	Equities	Article 8	EUR	2.258.860.892,67
Luxembourg	SICAV	JPMorgan	US	JPMorgan Funds	Europe Strategic Value Fund	Europe	Equities	Article 8	EUR	2.213.162.515,02
Luxembourg	SICAV	BlackRock Financial	US	BlackRock Global Funds	European Fund	Europe	Equities	Article 6	EUR	2.174.028.110,86
Luxembourg	SICAV	Candriam	Belgium	Candriam Sustainable	Equity Europe	Europe	Equities	Article 9	EUR	2.147.222.554,82
Luxembourg	SICAV	abrdn	UK	Aberdeen Standard SICAV II	European Smaller Companies Fund	Europe Small Cap	Equities	Article 8	EUR	2.128.539.253,35
Luxembourg	SICAV	Goldman Sachs	US	Goldman Sachs Funds	Goldman Sachs Europe Core® Equity Portfolio	Europe	Equities	Article 8	EUR	2.064.555.610,39
Luxembourg	SICAV	Allianz Global Invest	Germany	Allianz Global Investors Fund	Allianz Europe Equity Growth Select	Europe	Equities	Article 8	EUR	2.042.502.192,19
Luxembourg	SICAV	BlackRock Financial	US	BlackRock Global Funds	European Special Situations Fund	Europe	Equities	Article 6	EUR	1.987.691.007,38
Luxembourg	SICAV	Banque de Luxembc	Luxembourg	BL	BL-Equities Europe	Europe	Equities	Article 9	EUR	1.962.448.885,60
Luxembourg	SICAV	BNP Paribas	France	BNP Paribas Funds	Euro Equity	Europe	Equities	Article 8	EUR	1.937.000.668,75
Luxembourg	SICAV	JPMorgan	US	JPMorgan Investment Funds	Europe Select Equity Fund	Europe	Equities	Article 8	EUR	1.783.747.690,28
Luxembourg	SICAV	Jupiter	UK	The Jupiter Global Fund	Jupiter European Growth	Europe	Equities	Article 8	EUR	1.766.546.489,46
Luxembourg	SICAV	AXA IM	France	AXA World Funds	Framlington Sustainable Eurozone	Europe	Equities	Article 9	EUR	1.683.687.404,17
Luxembourg	SICAV	Invesco	US	Invesco Funds	Invesco Sustainable Pan European Structured Equity Fund	Europe	Equities	Article 8	EUR	1.680.924.763,85
Luxembourg	SICAV	BNP Paribas	France	BNP Paribas Funds	Europe Equity	Europe	Equities	Article 8	EUR	1.674.166.064,99
Luxembourg	SICAV	FIL	Bermuda	Fidelity Funds	European Smaller Companies Fund	Europe Small Cap	Equities	Article 6	EUR	1.587.258.389,75
Luxembourg	SICAV	Janus Henderson In	UK	Janus Henderson Horizon Fund	Euroland Fund	Europe	Equities	Article 6	EUR	1.572.179.844,18
Luxembourg	SICAV	Invesco	US	Invesco Funds	Invesco Pan European Equity Fund	Europe	Equities	Article 8	EUR	1.512.578.934,49
Luxembourg	SICAV	UBS	Switzerland	Multi Manager Access	EMU Equities Sustainable	Europe	Equities	Article 8	EUR	1.490.538.961,50
Luxembourg	SICAV	Dalton Strategic Par	UK	Melchior Selected Trust	European Opportunities Fund	Europe	Equities	Article 8	EUR	1.487.530.647,07
Luxembourg	SICAV	JPMorgan	US	JPMorgan Funds	Europe Dynamic Technologies Fund	Europe	Equities	Article 8	EUR	1.469.950.439,72
Luxembourg	SICAV	Exane	France	Exane Funds 2	Exane Equity Select Europe	Europe	Equities	Article 6	EUR	1.465.875.476,80
Luxembourg	SICAV	ORIX Group	Netherlands	Robeco Capital Growth Funds	Robeco Sustainable European Stars Equities	Europe	Equities	Article 8	EUR	1.458.044.747,43
Luxembourg	SICAV	MainFirst Bank	Germany	MainFirst	Top European Ideas Fund	Europe	Equities	Article 8	EUR	1.410.060.269,92
Luxembourg	SICAV	Pictet	Switzerland	Pictet	Quest Europe Sustainable Equities	Europe	Equities	Article 8	EUR	1.378.941.057,76
Luxembourg	SICAV	Lombard Odier	Switzerland	Lombard Odier Funds	Europe High Conviction	Europe	Equities	Article 6	EUR	1.354.709.183,84
Luxembourg	SICAV	Janus Henderson In	UK	Janus Henderson Fund	Pan European Fund	Europe	Equities	Article 6	EUR	1.347.354.848,46
Luxembourg	SICAV	BNP Paribas	France	BNP Paribas Funds	Europe Small Cap	Europe Small Cap	Equities	Article 8	EUR	1.339.070.118,84
Luxembourg	SICAV	Ninety One	UK	Ninety One Global Strategy Fund	European Equity Fund	Europe	Equities	Article 6	USD	1.331.734.619,46
Luxembourg	SICAV	Eleva Capital	France	ELEVA UCITS Fund	Eleva Euroland Selection Fund	Europe	Equities	Article 8	EUR	1.305.040.383,28
Luxembourg	SICAV	JPMorgan	US	JPMorgan Funds	Europe Strategic Growth Fund	Europe	Equities	Article 8	EUR	1.301.192.762,05

Domicile	Legal Status	Promoter/Ini-tiator	Promoter Origin Code	Fund Name	Sub-Fund Name	Region & Category	Asset Allocation	Sustaina-bility	Curre-ncy	TNAV USD
Luxembourg	SICAV	ORIX Group	Netherlands	Robeco Capital Growth Funds	Robeco QI European Conservative Equities	Europe	Equities	Article 8	EUR	1.294.122.265,16
Luxembourg	SICAV	JPMorgan	US	JPMorgan Funds	Euroland Equity Fund	Europe	Equities	Article 8	EUR	1.292.656.762,24
Luxembourg	SICAV	Natixis	France	Mirova Funds	Mirova Euro Sustainable Equity Fund	Europe High Yield	Equities	Article 9	EUR	1.288.097.455,94
Luxembourg	SICAV	Invesco	US	Invesco Funds	Invesco Euro Equity Fund	Europe	Equities	Article 8	EUR	1.264.107.863,75
Luxembourg	SICAV	FIL	Bermuda	Fidelity Active Strategy	Europe Fund	Europe	Equities	Article 8	EUR	1.212.820.559,51
Luxembourg	SICAV	Candriam	Belgium	Candriam Equities L	Europe Optim Quality	Europe High Yield	Equities	Article 8	EUR	1.184.477.030,84
Luxembourg	SICAV	Columbia Threadne	US	Threadneedle (Lux)	Pan European Small Cap Opportunities	Europe Small Cap	Equities	Article 6	EUR	1.179.886.577,37
Luxembourg	SICAV	M&G	UK	M&G (Lux) Investment Funds 1	M&G (Lux) European Strategic Value Fund	Europe	Equities	Article 6	EUR	1.172.836.574,91
Luxembourg	SICAV	AXA IM	France	AXA World Funds	Framlington Sustainable Europe	Europe	Equities	Article 9	EUR	1.171.465.777,51
Luxembourg	SICAV	J. Chahine Capital	Luxembourg	Digital Funds	Stars Europe	Europe	Equities	Article 8	EUR	1.144.929.841,30
Luxembourg	SICAV	BNP Paribas	France	BNP Paribas Easy	Low Carbon 100 Europe PAB	Europe	Equities	Article 9	EUR	1.072.252.953,53
Luxembourg	SICAV	Allianz Global Invest	Germany	Allianz Global Investors Fund	Allianz Best Styles Europe Equity SRI	Europe	Equities	Article 8	EUR	1.065.416.493,95
Luxembourg	SICAV	Schroders	UK	Schroder International Selection Fund	European Special Situations	Europe	Equities	Article 8	EUR	1.043.815.949,25
Luxembourg	SICAV	Janus Henderson In	UK	Janus Henderson Horizon Fund	Pan European Smaller Companies Fund	Europe Small Cap	Equities	Article 6	EUR	1.037.090.089,47
Luxembourg	SICAV	Zadig Asset Manage	UK	Memnon Fund	Memnon European Fund	Europe	Equities	Article 8	EUR	1.017.784.363,00
Luxembourg	SICAV	FIL	Bermuda	Fidelity Funds	Institutional European Larger Companies Fund	Europe	Equities	Article 8	EUR	1.010.337.788,84
Luxembourg	SICAV	Allianz Global Invest	Germany	Allianz Global Investors Fund	Allianz Best Styles Europe Equity	Europe	Equities	Article 6	EUR	1.006.875.949,92

A.2. Sub-Fund ESG Investment Approaches

					Pre Investment Approaches					Post Investment Approaches	
Index	**Fund Name**	**Sub-Fund Name**	**SFDR**	**EU Taxonomy Alignment**	**Exclu-sions**	**Norms Based Screenings**	**ESG Integration**	**Best in /class/universe/pro-gress**	**Sustainability Themed**	**Engagement**	**Voting**
61	AXA World Funds	Framlington Sustainable Eurozone	Article 9	NO	X	X	X, in house rating methodology	X		Transition Objective	Investor Impact
62	AXA World Funds	Framlington Sustainable Europe	Article 9	NO	X	X	X	X		Transition Objective	Investor Impact
63	BL	BL-Equities Europe	Article 9	NO	X	X, UN Global compact	X			Transition Objective	Investor Impact
64	BNP Paribas Easy	Low Carbon 100 Europe PAB	Article 9	NO	X	X, UN Global compact	X	X		X	X
66	Mirova Funds	Mirova Europe Environmental Equity Fund	Article 9	X, (a) climate change mitigation and (b) climate change adaptation.		X, UN SDGs	X	X	MULTI-thematic	X	X
67	Mirova Funds	Mirova Euro Sustainable Equity Fund	Article 9	Yes, no %		X, UN SDGs	Good Governance, ESG Risk measurement	X	Multi-thematic	X	X
65	Candriam Sustainable	Equity Europe	Article 9	NO	x	X UN Global Compact	X, in house Rating Methodology	X		X	X
48	MFS Meridian Funds	European Value Fund	Article 8	NO		X	X		MFS Low Carbon Transition Characteristic	X	X
49	MFS Meridian Funds	European Research Fund	Article 8	NO		X	X		MFS Low Carbon Transition Characteristic	X	X
50	Multi Manager Access	EMU Equities Sustainable	Article 8	NO	X	X, UN SDGs	corporate governance, transparency, environmental footprint and operational efficiency, employment standards and supply chain monitoring, diversity within the Board of Directors, and anti-fraud and anti-corruption guidelines	X	X	X	X
22	Allianz Global Investors Fund	Allianz Best Styles Europe Equity SRI	Article 8	NO	X	X, UN Global Compact, International Labour Organisation …	X	X		X	X
27	Candriam Equities L	Europe Innovation	Article 8	NO	X	X, UN Global compact	X	X		X	X
58	Candriam Equities L	Europe Optim Quality	Article 8	NO	X	X	X	X		X	X
29	DNCA Invest	SRI Europe Growth	Article 8	NO	X	X, UN Global compact	X, in house rating methodology	X		X	X

32	Fidelity Active Strategy	Europe Fund	Article 8	NO	X	X, UN Global Compact	X, in house rating methodology	X		X	X
37	Invesco Funds	Invesco Sustainable Pan European Structured Equity Fund	Article 8	NO	X	X, UN global Compact, Intetnational Labour Organization, oecd	X	X		X	X
38	Invesco Funds	Invesco Pan European Equity Fund		NO	X	X, UN global Compact, Intetnational Labour Organization, oecd	X	X		X	X
39	Invesco Funds	Invesco Euro Equity Fund		NO	X	X, UN global Compact, Intetnational Labour Organization, oecd	X	X		X	X
45	MainFirst	Top European Ideas Fund	Article 8	NO	X	X, UN Global Compact	X	X		X	
51	Pictet	Quest Europe Sustainable Equities	Article 8	NO	X	X, UN Global Compact	x, in house & external ratings	X		X	X
56	SICAV ODDO BHF	Euro Credit Short Duration	Article 8	NO	X	X	X, in house rating methodology	X			
59	Aberdeen Standard SICAV II	European Smaller Companies Fund	Article 8	NO	X	X, UN Global Compact	X, in house rating methodology			EVALUATING	
18	Allianz Global Investors Fund	Allianz Europe Equity Growth	Article 8	NO	X	X, UN Global Compact	X			X	X
19	Allianz Global Investors Fund	Allianz European Equity Dividend	Article 8	NO	X	X, UN Global Compact	X			X	X
20	Allianz Global Investors Fund	Allianz Euroland Equity Growth	Article 8	NO	X	X, UN Global Compact	X			X	X
21	Allianz Global Investors Fund	Allianz Europe Equity Growth Select	Article 8	NO	X	X, UN Global Compact	X			X	X
23	Amundi Funds	Euroland Equity	Article 8	NO	X	X, UN global compact	X, in house rating methodology			X	X
24	Amundi Funds	European Equity Value	Article 8	NO	X	X, UN global compact	X, in house rating methodology			X	X
25	BNP Paribas Funds	Euro Equity	Article 8	NO	X	X, UN Global Compact, OECD	X			X	X
26	BNP Paribas Funds	Europe Equity	Article 8	NO	X	X, UN Global Compact, OECD	X			X	X
60	BNP Paribas Funds	Europe Small Cap	Article 8	NO	X	X, UN Global Compact, OECD	X			X	X

30	ELEVA UCITS Fund	Eleva European Selection Fund	Article 8	NO	X	X, UN Global Compact	X	X			
31	ELEVA UCITS Fund	Eleva Euroland Selection Fund	Article 8	NO	X	X, UN Global Compact	X	X			
36	Goldman Sachs Funds	Goldman Sachs Europe Core® Equity Portfolio	Article 8	NO	X	X, Un Global Compact	X				X
40	JPMorgan Funds	Europe Strategic Value Fund	Article 8	NO	X	X	X			X	X
41	JPMorgan Funds	Europe Dynamic Technologies Fund	Article 8	NO	X	X	X			X	X
42	JPMorgan Funds	Europe Strategic Growth Fund	Article 8	NO	X	X	X			X	X
43	JPMorgan Funds	Euroland Equity Fund	Article 8	NO	X	X	X			X	X
44	JPMorgan Investment Funds	Europe Select Equity Fund	Article 8	NO	X	X	X			X	X
46	Melchior Selected Trust	European Opportunities Fund	Article 8	NO	X, corruption, human rights issues, or labour practices.	X	X			X	
52	Robeco Capital Growth Funds	Robeco Sustainable European Stars Equities	Article 8	NO	X	X, ILO, UNGPs, UNGC	X			X	X
53	Robeco Capital Growth Funds	Robeco QI European Conservative Equities	Article 8	NO	X	X, ILO, UNGPs, UNGC	X			X	X
54	Schroder International Selection Fund	EURO Equity	Article 8	NO		X, UN Global compact	X. In house ratings			X	X
55	Schroder International Selection Fund	European Special Situations	Article 8	NO		X, UN Global compact	X. In house ratings			X	X
57	The Jupiter Global Fund	Jupiter European Growth	Article 8	NO	X	X, UN global Compact	X			X	X
28	Digital Funds	Stars Europe	Article 8	NO	X	X, UN Global Compact	X				
33	Fidelity Funds	European Growth Fund	Article 8	NO	X	X, UN Global Compact	X, in house rating methodology				

34	Fidelity Funds	European Dynamic Growth Fund	Article 8	NO	X	X, UN Global Compact	X, in house rating methodology				
35	Fidelity Funds	Institutional European Larger Companies Fund	Article 8	NO	X	X, UN Global Compact	X, in house rating methodology				
47	Memnon Fund	Memnon European Fund	Article 8	NO			X, MSCI			X	X

A.3. Sub-Fund Focus, Benchmark and Exclusions Lists

Index	Fund Name	Focus	Benchmark	Exclusions List
61	AXA World Funds	The Sub-Fund is actively managed in order to capture opportunities in the Eurozone equity market, by mainly investing in equities of companies that are part of the EURO STOXX Total Return Net benchmark index (the “Benchmark”) universe	EURO STOXX Total Return Net benchmark index	E: climate (coal mining and coal-based energy production; oil sands production and oil sands related pipelines), biodiversity (palm oil production) or soft commodities (food commodities derivatives); • S: health (tobacco manufacturing) and human rights (violations of United Nations Global Compact (“UNGC”); controversial weapons manufacturing); • G: business ethics (UNGC breach)
62	AXA World Funds	The Sub-Fund is actively managed in order to capture opportunities in the European equities markets, by mainly investing in equities of companies that are part of the MSCI Europe Total Return Net benchmark index	MSCI Europe Total Return Net	E: climate (coal mining and coal-based energy production; oil sands production and oil sands related pipelines), biodiversity (palm oil production) or soft commodities (food commodities derivatives); • S: health (tobacco manufacturing) and human rights (violations of United Nations Global Compact (“UNGC”); controversial weapons manufacturing); • G: business ethics (UNGC breach)
63	BL	En complément des critères mentionnés ci-dessus, le compartiment intégrera des critères ESG par une approche dite en « sélectivité ». Cette approche consiste à réduire de 20% l'univers d'investissement	Not managed in line with any Benchmark	controversial weapons, based on controversies
64	BNP Paribas Easy	Replicate the performance of the Low Carbon 100 Europe PAB®* (NTR) index* (Bloomberg: LC1NR index), including fluctuations, and to maintain the Tracking Error between the sub-fund and the index below 1%. comply with the Paris Aligned Benchmark (PAB) targets of reducing carbon intensity by at least 50% relative to the initial investment universe and achieving an additional decarbonisation target of at least 7% each year.	Low Carbon 100 Europe PAB®* (NTR) index*	Fossil fuels Coal, Unconventional Oil and Gas, Tobacco, Controversial Weapons, Asbestos, Palm Oil
66	Mirova Funds	The investment objective of Mirova Europe Environmental Equity Fund (the “Sub-Fund”) is to allocate the capital towards sustainable economic models with environmental and/or social benefits by investing in companies providing solutions to address mainly environmental issues. renewable energy, transition energy, energy efficiency and natural resources management such as agricultural/food and water production cycle	MSCI Europe Net Dividends Reinvested Index	UN Global Compact, OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights breaches
67	Mirova Funds	The investment objective of Mirova Euro Sustainable Equity Fund (the “Sub-Fund”) is to allocate the capital towards sustainable economic models with environmental and/or social benefits by investing in companies whose economic activity contributes positively to or does not significantly harm the achievement of one or more of the UN Sustainable Development Goals (SDGs) and/or reduces the risk of not achieving one or more of the UN SDGs.	MSCI EMU Net Dividends Reinvested Index	UN Global Compact, OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights breaches
65	Candriam Sustainable	the Sub-Fund aims to contribute to reducing greenhouse gas emissions through specific targets as well as the integration of climate related indicators in equity securities analysis and aims to have long-term positive impact on environment and social domains	MSCI Europe (Net Return)	tobacco, steam coal, weapons and the production of nonconventional oil and gas. The strategy does not invest in companies that manufacture, use or hold anti-personnel mines, cluster bombs, chemical, biological, white phosphorus, depleted uranium and nuclear weapons

48	MFS Meridian Funds	The Fund's objective is capital appreciation, measured in euros. The Fund invests primarily (at least 70%) in European equity securities. Some of the countries in Europe, primarily those in Eastern Europe, are currently considered emerging market economies	MSCI Europe Index & MSCI Europe Index Value	
49	MFS Meridian Funds	The Fund's objective is capital appreciation, measured in euros. The Fund invests primarily (at least 70%) in European equity securities. Some of the countries in Europe, primarily those in Eastern Europe, are currently considered emerging market economies	MSCI europe Index	
50	Multi Manager Access	With respect to the investment policy outlined above, this actively managed sub-fund shall invest at least 70% of its net assets in equities and equity rights issued by companies which are domiciled or are chiefly active in the European Monetary Union ("EMU") (sometimes also referred to as the Eurozone)	MSCI EMU Net Total Return EUR Index	tobacco, adult entertainment, nuclear power or thermal coal, nor in companies generating a substantial proportion of their turnover using coal-based power. exclude any exposure to companies involved in controversial weapons and war materials
22	Allianz Global Investors Fund	Sustainable and Responsible Investment Strategy (SRI Strategy)	MSCI Europe Ext. SRI 5% Issuer Capped Total Return Net	Hydraulic Fracturing, Tobacco, Alcool, GMO Agriculture, nuclear power, artic drilling, gambling, exploration/exploitation of oil sands, military equipment, pornography, more than 10% of revenues from weapons, more than 10% revenues from thermal coal, coal
27	Candriam Equities L	Au moins 75% des actifs de ce compartiment sont investis en valeurs mobilières de type actions - ou certificats d'investissements dans la mesure où ils se qualifient de valeurs mobilières - de sociétés ayant leur siège social dans un Etat de l'Espace Economique Européen, mais aussi au Royaume-Uni	MSCI Europe (Net Return)	tobacco, steam coal, weapons and the production of nonconventional oil and gas. The strategy does not invest in companies that manufacture, use or hold anti-personnel mines, cluster bombs, chemical, biological, white phosphorus, depleted uranium and nuclear weapons
58	Candriam Equities L	Au moins 75% des actifs de ce compartiment sont investis en valeurs mobilières de type actions - ou certificats d'investissements dans la mesure où ils se qualifient de valeurs mobilières - de sociétés ayant leur siège social dans un Etat de l'Espace Economique Européen, mais aussi au Royaume-Uni	MSCI Europe (Net Return)	tobacco, steam coal, weapons and the production of nonconventional oil and gas. The strategy does not invest in companies that manufacture, use or hold anti-personnel mines, cluster bombs, chemical, biological, white phosphorus, depleted uranium and nuclear weapons
29	DNCA Invest	The Sub-Fund seeks to outperform pan-European equity markets over the recommended investment period. The STOXX EUROPE 600 Net Return EUR index (Bloomberg ticker: SXXR Index), calculated with dividends reinvested, is provided for a posteriori comparison purposes. Investors' attention is drawn to the fact that the management style is discretionary and integrates environmental, social / societal and governance (ESG) criteria.	STOXX EUROPE 600 NR	Tobacco, Weapons, thermal Coal, Coal electricity, Non conventional Weapons, Gas production
32	Fidelity Active Strategy	The fund is actively managed. The Investment Manager will reference MSCI Europe Index (the "Index") by seeking to outperform it as the index constituents are representative of the type of companies the fund invests in. A minimum of 50% of the fund's net assets will be invested in securities deemed to maintain sustainable characteristics, as described in the section entitled "1.3.2 Fidelity Sustainable Investing Framework"	MSCI Europe Index	Weapons (Controversial weapons~; semi-automatic weapons producers~, and retailers*; conventional weapons*), Fossil Fuels (Thermal coal miners & power generation*^; oil sands extraction*; arctic oil & gas production*), Tobacco (All producers and manufacturers~; tobacco retailers, distributors, suppliers and licensors*), Norms-based exclusions (Issuers in violation of United Nations Global Compact, the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles for Business and Human Rights, Responsible Business Conduct and International Labour Organization (ILO) Conventions.), Sovereign exclusions (Sovereign issuers are assessed based on three principles relating to governance, respect for human rights and foreign policy. We also rely on internationally recognised country indicators for our assessment of sovereign issuers (see definitions section))
37	Invesco Funds	The Fund aims to achieve long-term capital growth. The Fund seeks to achieve its objective by investing primarily in a diversified portfolio of equities or equity-related securities of companies: - with their registered office in a European country or exercising their business activities predominantly in European countries which are listed on recognised European stock exchanges, and - which meet the Fund's environmental, social and governance (ESG) criteria with a particular focus on environmental issues.	MSCI Europe Index	fossil fuel industries, activities related to coal or nuclear power, extraction of tar sands and oil shale, fracking or arctic drilling activities, production of restricted chemicals, activities endangering biodiversity, activities generating pollution, manufacturing or sale of conventional weapons or production and distribution of tobacco, Recreative Cannabis
38	Invesco Funds		MSCI Europe Index	fossil fuel industries, activities related to coal or nuclear power, extraction of tar sands and oil shale, fracking or arctic drilling activities, production of restricted chemicals, activities endangering biodiversity, activities generating pollution, manufacturing or sale of conventional weapons or production and distribution of tobacco, Recreative Cannabis
39	Invesco Funds		MSCI Europe Index	fossil fuel industries, activities related to coal or nuclear power, extraction of tar sands and oil shale, fracking or arctic drilling activities, production of restricted chemicals, activities endangering biodiversity, activities generating pollution, manufacturing or sale of conventional weapons or production and distribution of tobacco, Recreative Cannabis
45	MainFirst	MainFirst Top European Ideas Fund is designed as a European equity fund. It invests in promising companies that are expected to generate earnings growth thanks to solid balance sheets, high levels of profitability and forward-looking management. These investments in equities and other participation securities are made globally, although the investment focus lies on European companies	STOXX EUROPE 600 (Net Return)	WEAPONS & CLUSTER MUNITIONS
51	Pictet	Who wish to invest in shares issued by companies that are part of the MSCI Europe Index by identifying the sector leaders practising sustainable development.	MSCI Europe (EUR)	Thermal Coal (production, power genration), Oil and Gas (productoin and extraction), Oil Sands Extractions, Shale energy extractions, artic drilling, Nuclear Power Generation, weapons, controversial weapons, Tobacco, adult entertainment (pornography), gambling, GMO agriculture, pesticides

56	SICAV ODDO BHF	to provide a high level of income and capital growth. The Sub-Fund seeks to achieve its investment objective, in accordance with the policies and guidelines established by the Board of Directors, by investing in a portfolio of at least 2/3 listed transferable debt securities of public or private corporations in all sectors, without geographic limit, with fixed or variable interest rates. At least 2/3 of these debt securities are denominated in Euro.	Not managed in line with any Benchmark	Controversial weapons, coal extraxtion, coal power generation, tobaccO, adult entertainment
59	Aberdeen Standard SICAV II	The Sub-fund's investment objective is long term total return to be achieved by investing at least 70% of the Sub-fund's assets in small capitalisation equities and equity related securities of companies listed, incorporated or domiciled in Europe or companies that derive a significant proportion of their revenues or profits from European operations or have a significant proportion of their assets there.	FTSE Developed Europe Small Cap Index	Controversial Weapons, Tobacco Manufacturing and Thermal Coal
18	Allianz Global Investors Fund	A Sub-Fund managed in accordance with the Climate Engagement Strategy promotes an environmental characteristic through the engagement with the top 10 carbon emitting issuers of the respective Sub-Fund to encourage their transition pathway to a low carbon economy by setting objectives targets which are sector specific	S&P Europe Large Mid Cap Growth Total Return Net	controversial weapons, more than 10% of revenues from weapons, more than 10% revenues from thermal coal, coal, tobacco
19	Allianz Global Investors Fund	A Sub-Fund managed in accordance with the Climate Engagement Strategy promotes an environmental characteristic through the engagement with the top 10 carbon emitting issuers of the respective Sub-Fund to encourage their transition pathway to a low carbon economy by setting objectives targets which are sector specific	MSCI Europe Total Return Net	controversial weapons, more than 10% of revenues from weapons, more than 10% revenues from thermal coal, coal, tobacco
20	Allianz Global Investors Fund	A Sub-Fund managed in accordance with the Climate Engagement Strategy promotes an environmental characteristic through the engagement with the top 10 carbon emitting issuers of the respective Sub-Fund to encourage their transition pathway to a low carbon economy by setting objectives targets which are sector specific	S&P Eurozone Large Mid Cap Growth Total Return Net	controversial weapons, more than 10% of revenues from weapons, more than 10% revenues from thermal coal, coal, tobacco
21	Allianz Global Investors Fund	A Sub-Fund managed in accordance with the Climate Engagement Strategy promotes an environmental characteristic through the engagement with the top 10 carbon emitting issuers of the respective Sub-Fund to encourage their transition pathway to a low carbon economy by setting objectives targets which are sector specific	S&P Europe Large Cap Growth Total Return Net	
23	Amundi Funds	The Sub-Fund is actively managed and seeks to outperform the MSCI Europe Value Index over the recommended holding period. The ESG scoring approach used an in-house scoring methodology with 38 KPIs based on ESG risks analysis.	MSCI EMU Index	thermal coal, fossil fuels, tobacco, controversial weapons, nuclear weapons
24	Amundi Funds	The Sub-Fund is actively managed and seeks to outperform the MSCI EMU Index over the recommended holding period. The ESG scoring approach used an in-house scoring methodology with 38 KPIs based on ESG risks analysis.	MSCI Europe Value Index	thermal coal, fossil fuels, tobacco, controversial weapons, nuclear weapons
25	BNP Paribas Funds	The sub-fund promotes environmental and / or social and governance characteristics in accordance with article 8 of SFDR, and it will have a minimum proportion of its assets considered as sustainable investments within the meaning of SFDR	MSCI EMU (NR)	Fossil fuels Coal, Unconventional Oil and Gas, Tobacco, Controversial Weapons, Asbestos, Palm Oil
26	BNP Paribas Funds	At all times, this sub-fund invests at least 75% of its assets in equities and/or equity equivalent securities issued by a limited number of companies that have their registered offices either in a country member of the EEA, or in the United Kingdom, other than non-cooperative countries in the fight against fraud and tax evasion and are characterised by the quality of their financial structure and/or potential for earnings growth.	MSCI Europe (NR)	Fossil fuels Coal, Unconventional Oil and Gas, Tobacco, Controversial Weapons, Asbestos, Palm Oil
60	BNP Paribas Funds	This sub-fund invests at least 2/3 of its assets in equities and/or equity equivalent securities issued by companies having market capitalisation below the highest market capitalisation (observed at the beginning of each financial year) of the HSBC Smaller European Companies*, EURO STOXX Small**, MSCI Europe SmallCap*** indices, that have their registered offices or conduct the majority of their business activities in Europe.	HSBC Smaller European Companies*, EURO STOXX Small**, MSCI Europe SmallCap***	Fossil fuels Coal, Unconventional Oil and Gas, Tobacco, Controversial Weapons, Asbestos, Palm Oil
30	ELEVA UCITS Fund	The Eleva European Selection Fund seeks to achieve superior long term risk adjusted returns and capital growth by investing primarily in European equities and equity related securities. Eleva European Selection Fund is an SRI Sub-Fund which systematically and simultaneously integrates binding Environmental, Social and Governance criteria in the investment management process. The Sub Fund holds a SRI Label in France.	STOXX Europe 600 Net Return EUR	Controversial weapons, Tobacco, Nuclear weapons
31	ELEVA UCITS Fund	The Eleva Euroland Selection Fund seeks to achieve superior long term risk adjusted returns and capital growth by investing primarily in European equities and equity related securities denominated primarily in Euro	Euro STOXX Index Net Return EUR	Controversial weapons, Tobacco, Nuclear weapons
36	Goldman Sachs Funds	The Goldman Sachs Europe CORE® Equity Portfolio (the "Portfolio") seeks long-term capital appreciation by investing primarily in equity securities of European companies.	MSCI Europe Index (Total Return Net)	Controversial weapons, Tobacco, Thermal Coal, Oil Sands
40	JPMorgan Funds	To provide long-term capital growth by investing primarily in a value style-biased portfolio of European companies.	MSCI Europe Value Index (Total Return Net)	Thermal Coal, Power Generation with fossil Fuels,controversial weapons, Tobacco Production, Conventional Weapons, Unconventional Oil & Gas, Conventional Oil & Gas, Gambling, Pornography, Nuclear Weapons
41	JPMorgan Funds		MSCI Europe Value Index (Total Return Net)	Thermal Coal, Power Generation with fossil Fuels,controversial weapons, Tobacco Production, Conventional Weapons, Unconventional Oil & Gas, Conventional Oil & Gas, Gambling, Pornography, Nuclear Weapons
42	JPMorgan Funds	To provide long-term capital growth by investing primarily in a growth style biased portfolio of European companies.	MSCI Europe Growth Index	Thermal Coal, Power Generation with fossil Fuels,controversial weapons, Tobacco Production, Conventional Weapons, Unconventional Oil & Gas, Conventional Oil & Gas, Gambling, Pornography, Nuclear Weapons
43	JPMorgan Funds	To provide long-term capital growth by investing primarily in companies of countries that are part of the Eurozone ("Euroland Countries").	MSCI EMU Index (Net total Return)	Thermal Coal, Power Generation with fossil Fuels,controversial weapons, Tobacco Production, Conventional Weapons, Unconventional Oil & Gas, Conventional Oil & Gas, Gambling, Pornography, Nuclear Weapons
44	JPMorgan Investment Funds	To achieve a return in excess of the European equity markets by investing primarily in European companies	MSCI Europe Value Index (Total Return Net)	Thermal Coal, Power Generation with fossil Fuels,controversial weapons, Tobacco Production, Conventional Weapons, Unconventional Oil & Gas, Conventional Oil & Gas, Gambling, Pornography, Nuclear Weapons

46	Melchior Selected Trust	The investment objective of the European Opportunities Fund is to achieve longer-term capital growth, from a portfolio primarily made up of the shares of European companies or using derivatives to generate exposure to such equities.	MSCI Europe NR Index	controversial weapons (completely excluded); provision or delivery of adult entertainment; production and distribution of palm oil; provision of predatory lending; extraction and production of thermal coal or the generation of power from thermal coal; manufacture and distribution of all tobacco; provision of unregulated gambling.
52	Robeco Capital Growth Funds	provide long term capital growth while at the same time aiming for a better sustainability profile compared to the Benchmark by promoting certain ESG (i.e. Environmental, Social and corporate Governance) characteristics and integrating sustainability risks in the investment process. The Sub-fund also aims for an improved environmental footprint compared to the Benchmark	MSCI Europe Index	controversial weapons, tobacco, palm oil, fossil fuel, military contracting, firearms and nuclear power, artic drilling, thermal coal, oil sands
53	Robeco Capital Growth Funds	The aim of the Sub-fund is to provide long term capital growth while at the same time aiming for a better sustainability profile compared to the Benchmark by promoting certain ESG (i.e. Environmental, Social and corporate Governance) characteristics and integrating sustainability risks in the investment process.	MSCI Europe Index	controversial weapons, tobacco, palm oil, fossil fuel, military contracting, firearms and nuclear power, artic drilling, thermal coal, oil sands
54	Schroder International Selection Fund	The Fund aims to provide capital growth in excess of the MSCI European Monetary Union (Net TR) index after fees have been deducted over a three to five year period by investing in equity and equity related securities of companies in countries participating in the European Monetary Union	MSCI EMU Net Return	Controversial weapons, coal
55	Schroder International Selection Fund	The Fund aims to provide capital growth in excess of the MSCI Europe (Net TR) index after fees have been deducted over a three to five year period by investing in equity and equity related securities of European companies which meet the Investment Manager's sustainability criteria.	MSCI Europe Net Returns	Controversial weapons, coal
57	The Jupiter Global Fund	To achieve long term capital growth by exploiting special investment opportunities in Europe. (i)the transition to a low carbon economy in seeking to promote the goal of net zero greenhouse emissions by 2050 or sooner; and (ii) the upholding responsibilities to people and planet in seeking compliance with the UN Global Compact Principles, (the "ESG Characteristics").	Not managed in line with any Benchmark	Controversial weapons, coal extraxtion, coal power generation, tobacco
28	Digital Funds	The objective of DIGITAL FUNDS Stars Europe (referred to herein as the "Sub-Fund" or "DIGITAL Stars Europe") is to achieve long-term appreciation of its capital and to outperform the broad European markets, through the use of a sophisticated quantitative model to identify the "stars" performer. The Sub-Fund will use a quantitative model using a development made on price momentum	Not managed in line with any Benchmark	Controversial Weapons, Weapons, coal mining, thermal coal, oil sands extraction, artic drilling, tobacco, GMO agriculture, Palm oil, gambling, alchool, non medicinal drugs, pornography
33	Fidelity Funds	The fund is actively managed. The Investment Manager will, when selecting investments for the fund and for the purposes of monitoring risk, reference MSCI Europe Index (the "Index") as the Index constituents are representative of the type of companies the fund invests in. The fund's performance can be assessed against its Index.	MSCI Europe Index	Weapons (Controversial weapons~; semi-automatic weapons producers~, and retailers*; conventional weapons*), Fossil Fuels (Thermal coal miners & power generation*^; oil sands extraction*; arctic oil & gas production*), Tobacco (All producers and manufacturers~; tobacco retailers, distributors, suppliers and licensors*), Norms-based exclusions (Issuers in violation of United Nations Global Compact, the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles for Business and Human Rights, Responsible Business Conduct and International Labour Organization (ILO) Conventions.), Sovereign exclusions (Sovereign issuers are assessed based on three principles relating to governance, respect for human rights and foreign policy. We also rely on internationally recognised country indicators for our assessment of sovereign issuers (see definitions section))
34	Fidelity Funds	The fund aims to achieve long-term capital growth, principally through investment in an actively managed portfolio of companies that have their head office or exercise a predominant part of their activity in Europe. The fund will typically have a bias towards medium sized companies with a market capitalisation of between 1 and 10 billion Euro	MSCI Europe Index	Weapons (Controversial weapons~; semi-automatic weapons producers~, and retailers*; conventional weapons*), Fossil Fuels (Thermal coal miners & power generation*^; oil sands extraction*; arctic oil & gas production*), Tobacco (All producers and manufacturers~; tobacco retailers, distributors, suppliers and licensors*), Norms-based exclusions (Issuers in violation of United Nations Global Compact, the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles for Business and Human Rights, Responsible Business Conduct and International Labour Organization (ILO) Conventions.), Sovereign exclusions (Sovereign issuers are assessed based on three principles relating to governance, respect for human rights and foreign policy. We also rely on internationally recognised country indicators for our assessment of sovereign issuers (see definitions section))
35	Fidelity Funds	The fund aims to achieve long-term growth, primarily through investments in equity securities of larger European companies. A minimum of 50% of the fund's net assets will be invested in securities deemed to maintain sustainable characteristics, as described in the section entitled "1.3.2(a) Fidelity Sustainable Investing Framework	MSCI Europe Index	Weapons (Controversial weapons~; semi-automatic weapons producers~, and retailers*; conventional weapons*), Fossil Fuels (Thermal coal miners & power generation*^; oil sands extraction*; arctic oil & gas production*), Tobacco (All producers and manufacturers~; tobacco retailers, distributors, suppliers and licensors*), Norms-based exclusions (Issuers in violation of United Nations Global Compact, the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles for Business and Human Rights, Responsible Business Conduct and International Labour Organization (ILO) Conventions.), Sovereign exclusions (Sovereign issuers are assessed based on three principles relating to governance, respect for human rights and foreign policy. We also rely on internationally recognised country indicators for our assessment of sovereign issuers (see definitions section))
47	Memnon Fund	The objective of this Sub-Fund is to maximise long term capital growth by investing primarily in quoted equity listed on or dealt in Regulated Markets within Europe which are issued by companies with principal offices in Europe.	MSCI Daily Net TR Europe	NO EXCLUSION BUT HIGH SCRUTINY ON: tobacco, fossil suel, thermal coal, weapons, alchool and gambling

A.4. Sub-Fund ESG Strategies

						IMPACT ESG INVESTMENT	
	Index	SFDR	EXCLUSION FOCUSED	BASIC ESG INVESTMENT	ADVANCED ESG INVESTMENT	IMPACT ALIGNED	IMPACT GENERATING
Article 8	67	Article 9					X
	66	Article 9					X
	65	Article 9			X		X
	64	Article 9				X	
	63	Article 9					X
	62	Article 9					X
	61	Article 9					X
Article 9	60	Article 8			X		
	59	Article 8	X				
	58	Article 8			X		
	57	Article 8			X		
	56	Article 8		X			
	55	Article 8			X		
	54	Article 8			X		
	53	Article 8			X		
	52	Article 8			X		
	51	Article 8			X		
	50	Article 8				X	
	49	Article 8				X	
	48	Article 8				X	
	47	Article 8			X		
	46	Article 8			X		
	45	Article 8			X		
	44	Article 8			X		
	43	Article 8			X		
	42	Article 8			X		
	41	Article 8			X		
	40	Article 8			X		
	39	Article 8			X		
	38	Article 8			X		
	37	Article 8			X		
	36	Article 8			X		
	35	Article 8	X				
	34	Article 8	X				
	33	Article 8	X				
	32	Article 8			X		
	31	Article 8		X			
	30	Article 8		X			
	29	Article 8			X		
	28	Article 8	X				
	27	Article 8			X		
	26	Article 8			X		
	25	Article 8			X		
	24	Article 8			X		
	23	Article 8			X		
	22	Article 8			X		
	21	Article 8			X		
	20	Article 8			X		
	19	Article 8			X		
	18	Article 8			X		

A.5. Reference Portfolio Holdings Example

				Reference Portfolio Holding		
Company	**Sector**	**Industry**	**Country**	**Art. 6**	**Art. 8**	**Art. 9**
RELX PLC	INDUSTRIALS	PUBLISHING	United Kingdom	22%	0%	1%
Reckitt Benkster Group	CONSUMER STAPLES	OTHER	United Kingdom	6%	1%	1%
Intercontinental Hotels Group	CONSUMER DISCRETIONARY	LODGING	United Kingdom	6%	0%	0%
Shell	ENERGY	OIL & GAS INTEGRATED	United Kingdom	5%	1%	0%
Whitbread PLC	CONSUMER DISCRETIONARY	LODGING	United Kingdom	5%	0%	0%
JD Sports Fashion	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	United Kingdom	5%	0%	0%
ASML holding	INFORMATION TECHNOLOGY	SEMICONDUCTORS & SEMICONDU	Netherlands	4,391%	1,561%	3,744%
LVMH MOET HENNESSY LOUIS VU	CONSUMER DISCRETIONARY	LUXURY GOODS	France	4,222%	1,201%	2,334%
RS GROUP	INDUSTRIALS		United Kingdom	4%	0%	0%
Croda International	MATERIALS	SPECIALTY CHEMICALS	United Kingdom	4%	0%	1%
DIRECT LINE INSURANCE	FINANCIALS	INSURANCE-DIVERSIFIED	United Kingdom	4%	0%	0%
Tesco	CONSUMER STAPLES		United Kingdom	4%	0%	0%
Lloyds Banking Group	FINANCIALS	BANKS-REGIONAL	United Kingdom	3%	0%	0%
Legal & General Group	FINANCIALS	INSURANCE-LIFE	United Kingdom	3%	0%	0%
NOVO NORDISK A/S	HEALTH CARE	BIOTECHNOLOGY	Denmark	3,337%	0,975%	1,369%
GlaxoSmithKline	HEALTH CARE	DRUG MANUFACTURERS-GENERA	United Kingdom	3%	0%	0%
PHOENIX GROUP HOLDINGS	FINANCIALS	INSURANCE-LIFE	United Kingdom	3%	0%	0%
MASTERDARD INC ORD	INFORMATION TECHNOLOGY	CREDIT SERVICES	United States	3%	0%	0%
Persimmon	CONSUMER DISCRETIONARY	RESIDENTIAL CONSTRUCTION	United Kingdom	3%	0%	0%
National Express Group	CONSUMER DISCRETIONARY		United Kingdom	3%	0%	0%
coca-cola european Partners	CONSUMER STAPLES	BEVERAGES-NON ALCOHOLIC	United Kingdom	3%	0%	0%
SIKA AG ORD	MATERIALS	BUILDING MATERIALS	Switzerland	2,731%	0,257%	1,045%
LONZA GROUP AG ORD	HEALTH CARE	OTHER	Switzerland	2,693%	0,443%	0,318%
Kingfisher	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	United Kingdom	3%	0%	0%
Tate & Lyle	CONSUMER STAPLES		United Kingdom	3%	0%	0%
Schneider Electric SE	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	United States	3%	0%	0%
CVS GROUP	HEALTH CARE	HEALTHCARE PLANS	United Kingdom	2%	0%	0%
SOFTCAT	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	United Kingdom	2%	0%	0%
GENUS	HEALTH CARE	BIOTECHNOLOGY	United Kingdom	2%	0%	0%
Spirax-Sarco Engineering	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	United Kingdom	2%	0%	0%
Rightmove	COMMUNICATION SERVICES	INTERNET CONTENT & INFORMAT	United Kingdom	2%	0%	0%
DSV Panalpina	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	Denmark	2,198%	0,279%	0,088%
RWS HOLDINGS	INDUSTRIALS		United Kingdom	2%	0%	0%
IG Group	FINANCIALS		United Kingdom	2%	0%	0%
MORGAN SINDALL GROUP	INDUSTRIALS	ENGINEERING & CONSTRUCTION	United Kingdom	2%	0%	0%
Future	CONSUMER DISCRETIONARY	PUBLISHING	United Kingdom	2%	0%	0%
SYNTHOMER PLC	MATERIALS		United Kingdom	2%	0%	0%
GLOBALDATA	INDUSTRIALS		United Kingdom	2%	0%	0%
Unilever	CONSUMER STAPLES		United Kingdom	2%	1%	1%
Howden Joinery Group	INDUSTRIALS		United Kingdom	2%	0%	0%
JOHNSON SERVICE GROUP	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	United Kingdom	2%	0%	0%
Imperial Brands	CONSUMER STAPLES	TOBACCO	United Kingdom	2%	0%	0%
Rio tinto	MATERIALS	OTHER INDUSTRIAL METALS & MII	United Kingdom	2%	0%	0%
RAINBOW RARE EARTHS	MATERIALS		United Kingdom	2%	0%	0%
ROYAL UNIBREW A/S ORD	CONSUMER STAPLES	BEVERAGES-BREWERS	Denmark	1,759%	0,058%	0,000%
Johnson Matthey	MATERIALS	CHEMICALS	United Kingdom	2%	0%	0%
HomeServe	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	United Kingdom	2%	0%	0%
SPIRE HEALTH GROUP	HEALTH CARE		United Kingdom	2%	0%	0%
Segro PLC	REAL ESTATE		United Kingdom	2%	0%	0%
OSB Group	FINANCIALS	MORTGAGE FINANCE	United Kingdom	2%	0%	0%
YOUNG & CO	CONSUMER DISCRETIONARY	BEVERAGES-BREWERS	United Kingdom	1%	0%	0%
Compass Group	CONSUMER DISCRETIONARY	RESTAURANTS	United Kingdom	1%	0%	0%
IMCD	INDUSTRIALS	CHEMICALS	Netherlands	1,451%	0,219%	0,000%
BE Semiconductor Industries	INFORMATION TECHNOLOGY	SEMICONDUCTORS	Netherlands	1,371%	0,157%	0,000%
INTERMEDIATE CAPITAL GROUP	FINANCIALS		United Kingdom	1%	0%	0%
S4 Capital	COMMUNICATION SERVICES	ADVERTISING AGENCIES	United Kingdom	1%	0%	0%
Natwest Group	FINANCIALS		United Kingdom	1%	0%	0%
Watches of Switzerland group	CONSUMER DISCRETIONARY	OTHER	United Kingdom	1%	0%	0%
Straumann	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Switzerland	1,269%	0,081%	0,000%
CREST NICHOLSON	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
St James's Place	FINANCIALS	ASSET MANAGEMENT	United Kingdom	1%	0%	0%
Kingspan	INDUSTRIALS	BUILDING MATERIALS	Ireland	1,229%	0,323%	0,840%
Amadeus IT	INFORMATION TECHNOLOGY	TRAVEL SERVICES	Spain	1,226%	0,466%	0,284%
IBSTOCK PLC	MATERIALS	BUILDING MATERIALS	United Kingdom	1%	0%	0%
NEXT	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
ConvaTec group	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	United Kingdom	1%	0%	0%
DECHRA PHARMACEUTICALS	HEALTH CARE	DRUG MANUFACTURERS-GENERA	United Kingdom	1%	0%	0%
RENEWI	UTILITIES		United Kingdom	1%	0%	0%
ASM International	INFORMATION TECHNOLOGY	SEMICONDUCTORS & SEMICONDU	Netherlands	1,202%	0,223%	0,000%
CRANEWARE	HEALTH CARE		United Kingdom	1%	0%	0%
EASYJET	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
FinecoBank Banca Fineco	FINANCIALS		Italy	1,166%	0,385%	0,886%
VICTREX	MATERIALS	SPECIALTY CHEMICALS	United Kingdom	1%	0%	0%
Trainline plc	CONSUMER DISCRETIONARY	TRAVEL SERVICES	United Kingdom	1%	0%	0%
PREMIER FOODS	CONSUMER STAPLES		United Kingdom	1%	0%	0%
VISTRY GROUP PLC	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
Adyen	INFORMATION TECHNOLOGY	SOFTWARE & TECH SERVICES	Netherlands	1,105%	0,266%	0,053%

MOONPIG	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
TEAM17	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
Ferrari	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	Italy	1,098%	0,063%	0,000%
Hexagon	INFORMATION TECHNOLOGY	SCIENTIFIC & TECHNICAL INSTRUM	Sweden	1,080%	0,397%	0,539%
Safran	INDUSTRIALS	AEROSPACE & DEFENSE	France	1,078%	0,004%	0,000%
J Sainsbury	CONSUMER STAPLES	GROCERY STORES	United Kingdom	1%	0%	0%
URBAN LOGISTICS	REAL ESTATE		United Kingdom	1%	0%	0%
STMicroelectronics	INFORMATION TECHNOLOGY	SEMICONDUCTORS	Switzerland	1,062%	0,582%	0,085%
FIRST DERIVATIVES PLC	FINANCIALS		United Kingdom	1%	0%	0%
smith & Nephew PLC	HEALTH CARE	MEDICAL DEVICES	United Kingdom	1%	0%	0%
ENDEAVOUR MINING	MATERIALS		United Kingdom	1%	0%	0%
VAT	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	1,019%	0,150%	0,000%
HAYS	INDUSTRIALS	STAFFING & EMPLOYMENT SERVIC	United Kingdom	1%	0%	0%
VICTORIA	CONSUMER DISCRETIONARY	FURNISHINGS, FIXTURES & APPLIA	United Kingdom	1%	0%	0%
SSE PLC	UTILITIES		United Kingdom	1%	0%	0%
John Wood Group	ENERGY		United Kingdom	1%	0%	0%
RENISHAW PLC	INFORMATION TECHNOLOGY	SCIENTIFIC & TECHNICAL INSTRUM	United Kingdom	1%	0%	0%
CONDUIT HOLDINGS	FINANCIALS	INSURANCE-REINSURANCE	United Kingdom	1%	0%	0%
National Grid	UTILITIES		United Kingdom	1%	0%	0%
SHAFTESBURY	REAL ESTATE		United Kingdom	1%	0%	0%
Roche Holding	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Switzerland	0,879%	0,912%	0,917%
TRITAX BIG BOX	REAL ESTATE		United Kingdom	1%	0%	0%
LONGBOAT ENERGY	ENERGY		United Kingdom	1%	0%	0%
Partners	FINANCIALS	CAPITAL MARKETS	Switzerland	0,864%	0,182%	0,000%
Logitech	INFORMATION TECHNOLOGY	COMPUTER HARDWARE	Switzerland	0,859%	0,017%	0,000%
HERMES INTERNATIONAL SCA ORI	CONSUMER DISCRETIONARY	LUXURY GOODS	France	0,845%	0,140%	0,258%
Atlas Copco	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Sweden	0,845%	0,542%	0,065%
DR. MARTENS	CONSUMER DISCRETIONARY	FOOTWEAR & ACCESSORIES	United Kingdom	1%	0%	0%
Sanofi-Aventis	HEALTH CARE	DRUG MANUFACTURERS-GENERA	France	0,821%	0,713%	1,377%
DRAPER ESPRIT	FINANCIALS		United Kingdom	1%	0%	0%
QinetiQ Group	INDUSTRIALS	AEROSPACE & DEFENSE	United Kingdom	1%	0%	0%
TotalEnergies	ENERGY	OIL & GAS INTEGRATED	France	0,813%	0,604%	0,000%
Cranswick	CONSUMER STAPLES	PACKAGED FOODS	United Kingdom	1%	0%	0%
SMART METEING SYSTEMS	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART:	United Kingdom	1%	0%	0%
ChemometecØ	HEALTH CARE	SCIENTIFIC & TECHNICAL INSTRUM	Denmark	0,787%	0,000%	0,000%
Nestlé	CONSUMER STAPLES	FOOD PRODUCTS	Switzerland	0,769%	1,217%	1,576%
VOLUTION GROUP	INDUSTRIALS	BUILDING PRODUCTS & EQUIPME	United Kingdom	1%	0%	0%
JADESTONE ENERGY	ENERGY		United Kingdom	1%	0%	0%
CONCENTRIC	INDUSTRIALS		United Kingdom	1%	0%	0%
FORESIGHT	FINANCIALS		United Kingdom	1%	0%	0%
LEARNING TECHNOLOGIES	INFORMATION TECHNOLOGY		United Kingdom	1%	0%	0%
FINTEL	INDUSTRIALS		United Kingdom	1%	0%	0%
Linde PLC	MATERIALS		Ireland	0,706%	0,349%	0,240%
ESSENTRA	MATERIALS		United Kingdom	1%	0%	0%
IMPACT OIL & GAS	ENERGY	OIL & GAS E&P	United Kingdom	1%	0%	0%
FUNDING CIRCLE HOLDING	FINANCIALS	CREDIT SERVICES	United Kingdom	1%	0%	0%
Rational	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Germany	0,653%	0,262%	0,000%
Avanza Bank	FINANCIALS	BANKS-REGIONAL	Sweden	0,644%	0,004%	0,000%
INSPIRED ENERGY	INDUSTRIALS		United Kingdom	1%	0%	0%
Wizzair Holding	INDUSTRIALS		United Kingdom	1%	0%	0%
SIGMAROC	INDUSTRIALS		United Kingdom	1%	0%	0%
Epiroc	INDUSTRIALS	CONSTRUCTION & FARM MACHIN	Sweden	0,622%	0,156%	0,000%
Ahold Delhaize	CONSUMER STAPLES	OTHER	Netherlands	0,618%	0,349%	0,000%
GAMES WORKSHOP GROUP	CONSUMER DISCRETIONARY	LEISURE	United Kingdom	1%	0%	0%
Allfunds	FINANCIALS	CAPITAL MARKETS	United Kingdom	0,590%	0,344%	0,000%
PLUS500	FINANCIALS	CAPITAL MARKETS	United Kingdom	1%	0%	0%
Teleperformance	INDUSTRIALS	BUSINESS SERVICES	France	0,558%	0,397%	0,821%
Schneider Electric	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	France	0,556%	0,776%	1,842%
BNP Paribas	FINANCIALS	BANKS-REGIONAL	France	0,551%	0,370%	0,840%
Holcim	MATERIALS		Switzerland	0,534%	0,071%	0,000%
JET2 PLC	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
ON THE BEACH	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
DiaSorin	HEALTH CARE		Italy	0,530%	0,054%	0,000%
UPM-Kymmene	MATERIALS	PAPER & FOREST PRODUCTS	Finland	0,529%	0,181%	0,043%
GYM GROUP	CONSUMER DISCRETIONARY		United Kingdom	1%	0%	0%
MTU Aero Engines	INDUSTRIALS	AEROSPACE & DEFENSE	Germany	0,514%	0,276%	0,000%
DIXONS CARPHONE	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	United Kingdom	0%	0%	0%
IQE	INFORMATION TECHNOLOGY		United Kingdom	0%	0%	0%
INDIVIOR	HEALTH CARE		United Kingdom	0%	0%	0%
HEADLAM GROUP	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
Brenntag	INDUSTRIALS	SPECIALTY CHEMICALS	Germany	0,452%	0,075%	0,047%
EDP - Energias de Portugal	UTILITIES	ELECTRIC UTILITIES	Portugal	0,443%	0,088%	0,212%
Spectris	INFORMATION TECHNOLOGY	SCIENTIFIC & TECHNICAL INSTRUM	United Kingdom	0%	1%	0%
Nordea Bank	FINANCIALS	OTHER	Finland	0,435%	0,284%	0,000%
CTS Eventim AG	COMMUNICATION SERVICES	ENTERTAINMENT	Germany	0,435%	0,143%	0,000%
Allianz	FINANCIALS	INSURANCE	Germany	0,424%	0,489%	1,621%
AstraZeneca	HEALTH CARE	DRUG MANUFACTURERS-GENERA	United Kingdom	0,411%	0,466%	0,918%
Experian	INDUSTRIALS	CONSULTING SERVICES	Ireland	0,410%	0,194%	0,149%
Orange	COMMUNICATION SERVICES	TELECOM SERVICES	France	0,409%	0,083%	0,028%

Compagnie de Saint-Gobain	INDUSTRIALS	BUILDING PRODUCTS	France	0,405%	0,147%	1,518%
SUPERDRY	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
BP	ENERGY	OIL & GAS INTEGRATED	United Kingdom	0,400%	0,144%	0,291%
Vinci	INDUSTRIALS	ENGINEERING & CONSTRUCTION	France	0,399%	0,228%	0,272%
BLACKROCK ICS. EURO LIQUID EN\	OPEN ENDED FUND		Ireland	0,395%	0,000%	0,000%
Enel	UTILITIES		Italy	0,390%	0,158%	0,000%
TRUSTPILOT	INFORMATION TECHNOLOGY		United Kingdom	0%	0%	0%
SIEMENS AG	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Germany	0,383%	0,323%	0,298%
CURRYS	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
DISTRIBUTION FINANCE CAPITAL	FINANCIALS		United Kingdom	0%	0%	0%
Industria de Diseno Textil (INDITE	CONSUMER DISCRETIONARY	APPAREL	Spain	0,357%	0,395%	0,775%
FULLER SMITH & TURNER	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
L'Oréal	CONSUMER DISCRETIONARY	PERSONAL PRODUCTS	France	0,348%	0,375%	1,216%
SIG COMBIBLOC GROUP	INDUSTRIALS	PACKAGING & CONTAINERS	Switzerland	0,347%	0,032%	0,167%
OXFORD INSTRUMENTS	INFORMATION TECHNOLOGY		United Kingdom	0%	0%	0%
Auto Trader Group	INFORMATION TECHNOLOGY	INTERNET CONTENT & INFORMAT	United Kingdom	0,336%	0,045%	0,000%
Nexans SA	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART:	France	0,334%	0,129%	0,000%
ALD	INDUSTRIALS		France	0,332%	0,000%	0,000%
Tele2	COMMUNICATION SERVICES	TELECOM SERVICES	Sweden	0,324%	0,214%	0,174%
Zurich Insurance Group	FINANCIALS	OTHER	Switzerland	0,316%	0,074%	0,177%
Merck	HEALTH CARE	OTHER	Germany	0,315%	0,509%	0,207%
Ashtead Group	INDUSTRIALS	RENTALS & LEASING SERVICES	United Kingdom	0,307%	0,003%	0,229%
Dassault Systèmes	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	France	0,307%	0,479%	1,645%
Airbus	INDUSTRIALS	AEROSPACE & DEFENSE	France	0,304%	0,239%	0,000%
Tryg	FINANCIALS	INSURANCE-DIVERSIFIED	Denmark	0,303%	0,010%	0,000%
ArcelorMittal	MATERIALS	STEEL	Luxembourg	0,295%	0,075%	0,000%
ASR Netherland	FINANCIALS	INSURANCE	Netherlands	0,281%	0,217%	0,000%
Pandora	CONSUMER STAPLES	LUXURY GOODS	Denmark	0,281%	0,035%	0,000%
LBG MEDIA	COMMUNICATION SERVICES		United Kingdom	0%	0%	0%
TENARIS SA	ENERGY	ENERGY EQUIPMENT	Luxembourg	0,273%	0,036%	0,000%
Engie	UTILITIES	UTILITIES-DIVERSIFIED	France	0,273%	0,137%	0,125%
Danone	CONSUMER STAPLES	PACKAGED FOODS	France	0,269%	0,168%	0,180%
Stellantis	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	Netherlands	0,264%	0,250%	0,556%
Heineken	CONSUMER STAPLES	BEVERAGES-BREWERS	Netherlands	0,257%	0,099%	0,000%
Puma	CONSUMER DISCRETIONARY	FOOTWEAR & ACCESSORIES	Germany	0,257%	0,019%	0,000%
EssilorLuxottica	CONSUMER DISCRETIONARY	MEDICAL INSTRUMENTS & SUPPLI	France	0,253%	0,890%	1,543%
KBC group	FINANCIALS		Belgium	0,248%	0,198%	0,878%
Legrand	INDUSTRIALS		France	0,246%	0,844%	1,568%
CREO MEDICAL GROUP	HEALTH CARE		United Kingdom	0%	0%	0%
SCS GROUP	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
Euronext	FINANCIALS	FINANCIAL DATA & STOCK EXCHAI	Netherlands	0,242%	0,064%	0,000%
Universal Music Group BV	COMMUNICATION SERVICES		Netherlands	0,242%	0,347%	0,000%
Deutsche Börse	FINANCIALS	FINANCIAL DATA & STOCK EXCHAI	Germany	0,241%	0,337%	0,067%
Volvo	INDUSTRIALS	FARM & HEAVY CONSTRUCTION N	Sweden	0,236%	0,126%	0,075%
KISTOS	ENERGY		United Kingdom	0%	0%	0%
Carlsberg	CONSUMER STAPLES	BEVERAGES-BREWERS	Denmark	0,227%	0,144%	0,136%
Publicis Groupe	CONSUMER DISCRETIONARY	ADVERTISING AGENCIES	France	0,219%	0,517%	0,679%
Arkema	MATERIALS	SPECIALTY CHEMICALS	France	0,204%	0,278%	0,000%
HEIQ	MATERIALS		United Kingdom	0%	0%	0%
JUBILEE METALS GROUP	MATERIALS		United Kingdom	0%	0%	0%
MELEXIS	INFORMATION TECHNOLOGY	SEMICONDUCTORS	Belgium	0,202%	0,004%	0,000%
QIAGEN	HEALTH CARE	DIAGNOSTICS & RESEARCH	Netherlands	0,201%	0,142%	0,000%
FLUIDRA	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Spain	0,198%	0,142%	0,000%
Adidas	CONSUMER DISCRETIONARY		Germany	0,198%	0,450%	0,993%
Elis	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	France	0,194%	0,000%	0,139%
COMPUGROUP MEDICAL SE	HEALTH CARE		Germany	0,188%	0,000%	0,000%
SimCorp	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Denmark	0,187%	0,122%	0,000%
HUHTAMAKI	MATERIALS		Finland	0,182%	0,024%	0,000%
RENALYTIX	HEALTH CARE		United States	0%	0%	0%
BELIMO	INDUSTRIALS	BUILDING PRODUCTS	Switzerland	0,179%	0,007%	0,000%
Autoliv	CONSUMER DISCRETIONARY	AUTO PARTS	Sweden	0,177%	0,005%	0,000%
WIRELESS INFRASTRUCTURE ITALI.	INFORMATION TECHNOLOGY	COMMUNICATION EQUIPMENT	Italy	0,169%	0,038%	0,000%
Synlab	HEALTH CARE		Germany	0,168%	0,000%	0,000%
Unicredit SpA	FINANCIALS		Italy	0,166%	0,170%	0,398%
VAN LANSCHOT KEMPEN	FINANCIALS		Netherlands	0,164%	0,002%	0,000%
Pernod Ricard	CONSUMER STAPLES	BEVERAGE-WINERIES & DISTILLER	France	0,162%	0,475%	0,849%
EQT	ENERGY	OIL, GAS & CONSUMABLES FUELS	Sweden	0,159%	0,133%	0,000%
GVS SPA	HEALTH CARE		Italy	0,157%	0,238%	0,000%
DeutSche Telekom	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Germany	0,156%	0,451%	0,835%
UBS Group	FINANCIALS	OTHER	Switzerland	0,155%	0,274%	0,249%
Sartorius Biotech	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	France	0,154%	0,042%	0,000%
Ericsson	INFORMATION TECHNOLOGY	COMMUNICATION EQUIPMENT	Sweden	0,153%	0,064%	0,140%
IRISH CONTINENTAL GROUP PLC	INDUSTRIALS		Ireland	0,152%	0,005%	0,000%
Nokia	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Finland	0,151%	0,129%	0,057%
Elekta	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Sweden	0,151%	0,026%	0,000%
GENMAB AS	HEALTH CARE	OTHER	Denmark	0,149%	0,068%	0,000%
Bank of Ireland	FINANCIALS		Ireland	0,145%	0,195%	0,000%
Alfa Laval	INDUSTRIALS		Sweden	0,144%	0,073%	0,000%
Michelin SA	CONSUMER DISCRETIONARY	AUTO PARTS	France	0,143%	0,260%	0,576%

SUSE	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Germany	0,143%	0,001%	0,000%
MONCLER SPA	CONSUMER DISCRETIONARY	APPAREL	Italy	0,143%	0,145%	0,076%
VERALIA SASU	INDUSTRIALS		France	0,143%	0,132%	0,000%
Poste Italiane	FINANCIALS		Italy	0,143%	0,407%	0,000%
Erste Group Bank AG	FINANCIALS	BANKS-REGIONAL	Germany	0,142%	0,077%	0,129%
Gjensidige Forsikring	FINANCIALS		Norway	0,142%	0,057%	0,000%
KION	INDUSTRIALS	FARM & HEAVY CONSTRUCTION M	Germany	0,141%	0,034%	0,000%
DALATA HOTEL GROUP LIMITED	CONSUMER DISCRETIONARY		Ireland	0,141%	0,000%	0,000%
Akzo Nobel	MATERIALS		Netherlands	0,141%	0,141%	0,037%
Anglo American	MATERIALS	OTHER INDUSTRIAL METALS & MI	United Kingdom	0,141%	0,139%	0,000%
Gerresheimer	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Germany	0,139%	0,170%	0,000%
REABOLD RESOURCES	ENERGY		United Kingdom	0%	0%	0%
Stratec	HEALTH CARE	MEDICAL DEVICES	Germany	0,138%	0,090%	0,000%
TIKKURILA	MATERIALS	SPECIALTY CHEMICALS	Finland	0,138%	0,054%	0,000%
SEB SA	CONSUMER DISCRETIONARY	FURNISHINGS, FIXTURES & APPLIA	France	0,138%	0,035%	0,214%
ABCAM PLC	HEALTH CARE	BIOTECHNOLOGY	United Kingdom	0,137%	0,082%	0,000%
NN Group	FINANCIALS	INSURANCE-DIVERSIFIED	Netherlands	0,137%	0,198%	0,031%
DAVIDE CAMPARI-MILANO	CONSUMER STAPLES	BEVERAGE-WINERIES & DISTILLER	Netherlands	0,134%	0,045%	0,000%
CANCON	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER	Germany	0,130%	0,093%	0,000%
Porsche automobil Holding	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	Germany	0,128%	0,163%	0,000%
Amundi	FINANCIALS	ASSET MANAGEMENT	France	0,127%	0,037%	0,000%
CRH	INDUSTRIALS		Germany	0,126%	0,000%	0,000%
Worldline	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	France	0,126%	0,301%	0,443%
Air Liquide	MATERIALS		France	0,124%	0,436%	2,425%
Kone	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Finland	0,124%	0,072%	0,237%
Sartorius	HEALTH CARE		Germany	0,124%	0,146%	0,000%
SAP	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Germany	0,124%	0,749%	1,876%
Just eat Takeaway.com	CONSUMER DISCRETIONARY	OTHER	Netherlands	0,123%	0,048%	0,000%
Siemens HEALTHINEERS	HEALTH CARE	DIAGNOSTICS & RESEARCH	Germany	0,123%	0,177%	0,186%
Bureau Veritas	INDUSTRIALS	CONSULTING SERVICES	France	0,123%	0,040%	0,339%
Bayer	HEALTH CARE		Germany	0,123%	0,220%	0,000%
Capgemini	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER	France	0,122%	0,345%	0,416%
Eiffage	INDUSTRIALS	CONSTRUCTION & ENGINEERING	France	0,122%	0,025%	0,000%
MAJOREL GROUP LUXEMBOURG	INFORMATION TECHNOLOGY		Luxembourg	0,122%	0,120%	0,000%
Ryanair holding	INDUSTRIALS		Ireland	0,122%	0,165%	0,000%
Siemens Energy	ENERGY		Germany	0,120%	0,000%	0,150%
Novartis	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Switzerland	0,120%	0,431%	0,404%
APPLUS SERVICES	INDUSTRIALS		Spain	0,119%	0,030%	0,000%
Stabilus	INDUSTRIALS		Luxembourg	0,118%	0,056%	0,000%
Rexel	INDUSTRIALS	ELECTRONICS & COMPUTER DISTR	France	0,118%	0,189%	0,000%
TKH Group	INDUSTRIALS	COMMUNICATION EQUIPMENT	Netherlands	0,116%	0,034%	0,000%
Norma Group	INDUSTRIALS	METAL FABRICATION	Germany	0,116%	0,073%	0,000%
KORIAN MEDICA	HEALTH CARE	MEDICAL CARE FACILITIES	France	0,114%	0,012%	0,000%
Thule Group	CONSUMER DISCRETIONARY	LEISURE	Sweden	0,113%	0,093%	0,000%
Essity	CONSUMER STAPLES		Sweden	0,112%	0,133%	0,800%
Daimler	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	Germany	0,112%	0,050%	0,987%
Kering	CONSUMER DISCRETIONARY	LUXURY GOODS	France	0,111%	0,130%	0,192%
Beiersdorf	CONSUMER STAPLES	HOUSEHOLD & PERSONAL PRODU	Germany	0,110%	0,135%	0,340%
B M EUROPEAN VALUE	CONSUMER DISCRETIONARY	DISCOUNT STORES	Luxembourg	0,110%	0,028%	0,000%
LEM HOLDING	INFORMATION TECHNOLOGY	ELECTRICAL EQUIPMENTS & PART	Switzerland	0,110%	0,015%	0,000%
Fresenius	HEALTH CARE	MEDICAL CARE FACILITIES	Germany	0,109%	0,180%	0,568%
Carrefour	CONSUMER STAPLES	GROCERY STORES	France	0,109%	0,252%	0,110%
ORPEA	HEALTH CARE		France	0,106%	0,023%	0,274%
Knorr-Bremse	INDUSTRIALS	AUTO PARTS	Germany	0,106%	0,157%	0,021%
VZ HOLDING	FINANCIALS		Switzerland	0,105%	0,000%	0,000%
Schindler Holding AG	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Germany	0,105%	0,187%	0,000%
JDE Peet's	CONSUMER STAPLES	PACKAGED FOODS	Netherlands	0,105%	0,082%	0,000%
SGS RA REG SHS	MATERIALS		Switzerland	0,102%	0,105%	0,535%
ADEVINTA ASA	INFORMATION TECHNOLOGY		Norway	0,102%	0,000%	0,000%
AIXTRON SE	INFORMATION TECHNOLOGY	SEMICONDUCTORS EQUIPMENT &	Germany	0,102%	0,044%	0,000%
Eurofins Scientific	HEALTH CARE	DIAGNOSTICS & RESEARCH	Luxembourg	0,102%	0,181%	0,537%
LEG Immobilien	REAL ESTATE		Germany	0,101%	0,016%	0,000%
Vonovia	REAL ESTATE		Germany	0,101%	0,112%	0,000%
BARCO NV	INFORMATION TECHNOLOGY		Belgium	0,101%	0,011%	0,000%
OUTOTEC OYJ	INDUSTRIALS	FARM & HEAVY CONSTRUCTION M	Finland	0,101%	0,137%	0,159%
Neste OYJ	ENERGY	OIL & GAS REFINING & MARKETIN	Finland	0,099%	0,317%	0,217%
Symrise	MATERIALS		Germany	0,097%	0,307%	1,626%
Teamviewer AG	INFORMATION TECHNOLOGY		Germany	0,097%	0,000%	0,228%
MARR SPA	CONSUMER STAPLES		Italy	0,096%	0,000%	0,000%
Rémy Cointreau	CONSUMER STAPLES	BEVERAGES-WINERIES & DISTILLEI	France	0,096%	0,008%	0,000%
Hypoport	FINANCIALS		Germany	0,095%	0,096%	0,000%
Smurfit Kappa Group	MATERIALS		Ireland	0,093%	0,065%	0,732%
Nemetschek	MATERIALS	METALS & MINING	Germany	0,093%	0,172%	0,000%
BT Group	COMMUNICATION SERVICES	TELECOM SERVICES	United Kingdom	0,092%	0,064%	0,026%
QUADIENT	INFORMATION TECHNOLOGY		France	0,092%	0,010%	0,000%
AP Moller - Maersk	INDUSTRIALS	MARINE SHIPPING	Denmark	0,092%	0,088%	0,044%
INFICON HOLDING	INDUSTRIALS		Switzerland	0,089%	0,021%	0,000%
TE CONNNECTIVITY	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Switzerland	0,088%	0,026%	0,000%
KINDRED GROUP	CONSUMER DISCRETIONARY		Malta	0,088%	0,001%	0,000%

Compagnie Générale des Etablisse	CONSUMER DISCRETIONARY	AUTO PARTS	France	0,087%	0,086%	0,000%
Azelis Group NV	MATERIALS		Belgium	0,086%	0,051%	0,000%
NEXI	FINANCIALS		Italy	0,086%	0,372%	0,148%
Repsol	ENERGY		Spain	0,086%	0,090%	0,000%
E.ON SE	UTILITIES	MULTI-UTILITIES	Germany	0,083%	0,142%	0,000%
Hornbach holding	CONSUMER STAPLES	SPECIALTY RETAIL	Germany	0,083%	0,196%	0,000%
MOWI	CONSUMER STAPLES		Norway	0,083%	0,007%	0,000%
SHOP APOTEKE EUROPE	CONSUMER STAPLES		Netherlands	0,083%	0,000%	0,000%
Alcon Inc	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Switzerland	0,082%	0,026%	0,000%
UCB	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Belgium	0,082%	0,183%	0,000%
KARNOV GROUP	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Sweden	0,081%	0,000%	0,000%
Umicore	MATERIALS	POLLUTION & TREATMENTS CONT	Belgium	0,081%	0,099%	0,211%
Lundin Energy	ENERGY	OIL & GAS E&P	Sweden	0,080%	0,088%	0,000%
NORDNET	FINANCIALS		Sweden	0,079%	0,000%	0,000%
STILLFRONT GROUP	INFORMATION TECHNOLOGY	ELECTRONIC GAMING & MULTIME	Sweden	0,076%	0,000%	0,000%
De' Longhi	CONSUMER DISCRETIONARY		Italy	0,076%	0,026%	0,000%
Signify	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART:	Netherlands	0,076%	0,017%	0,540%
SPIE	INDUSTRIALS	ENGINEERING & CONSTRUCTION	France	0,075%	0,117%	0,127%
Dermapharm Holding	HEALTH CARE		Germany	0,075%	0,102%	0,000%
Barry Callebaut	CONSUMER STAPLES	CONFECTIONERS	Switzerland	0,075%	0,021%	0,000%
BURCKHARDT COMPRESSION	INDUSTRIALS		Switzerland	0,075%	0,019%	0,000%
YOURGENE HEALTH	HEALTH CARE		United Kingdom	0%	0%	0%
Bawag Geoup AG	FINANCIALS		Austria	0,074%	0,157%	0,000%
CENTRICA	UTILITIES	UTILITIES-DIVERSIFIED	United Kingdom	0,074%	0,009%	0,000%
VAISALA	INFORMATION TECHNOLOGY	SCIENTIFIC & TECHNICAL INSTRUM	Finland	0,073%	0,540%	0,000%
JTC PLUS	FINANCIALS		Jersey	0,072%	0,000%	0,000%
ALPHA FINANCIAL MARKETS CONS	INDUSTRIALS		United Kingdom	0,072%	0,000%	0,000%
BASF	MATERIALS		Germany	0,071%	0,326%	0,000%
TECAN Group	HEALTH CARE	LIFE SCIENCES TOOLS & SERVICES	Switzerland	0,070%	0,123%	0,239%
Rheinmetall	INDUSTRIALS	INDUSTRIAL DISTRIBUTION	Germany	0,070%	0,012%	0,000%
Burberry	CONSUMER DISCRETIONARY	LUXURY GOODS	United Kingdom	0,069%	0,066%	0,015%
MIPS	CONSUMER DISCRETIONARY	LEISURE	Sweden	0,068%	0,008%	0,000%
Balfour Beatty	INDUSTRIALS	ENGINEERING & CONSTRUCTION	United Kingdom	0,066%	0,006%	0,000%
Philips	HEALTH CARE		Netherlands	0,065%	0,064%	0,257%
Alfen BEHEER NV	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART:	Netherlands	0,065%	0,158%	0,491%
Andritz AG	INDUSTRIALS	INDUSTRIAL DISTRIBUTION	Austria	0,065%	0,058%	0,059%
Wolters KLUWER	INDUSTRIALS	COMMERCIAL & PROFESSIONAL SI	Netherlands	0,065%	0,331%	0,000%
BRITVIC	CONSUMER STAPLES	BEVERAGES-NON ALCOHOLIC	United Kingdom	0,064%	0,191%	0,000%
APERAM	MATERIALS	STEEL	Luxembourg	0,062%	0,054%	0,000%
KONECRANES	INDUSTRIALS		Finland	0,062%	0,007%	0,000%
GLOBAL FASHION GROUP	CONSUMER DISCRETIONARY	APPAREL RETAIL	Luxembourg	0,061%	0,005%	0,000%
Fidelity ILF - the Euro fund - A-ACC	OPEN ENDED FUND		Ireland	0,061%	0,063%	0,000%
CNH Industrial	INDUSTRIALS	FARM & HEAVY CONSTRUCTION M	United Kingdom	0,060%	0,115%	0,000%
Grand City Properties	REAL ESTATE	REAL ESTATE SERVICES	Luxembourg	0,060%	0,070%	0,069%
C&C GROUP	CONSUMER STAPLES		Ireland	0,060%	0,001%	0,000%
MERCEDES-BENZ GROUP AG	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	Germany	0,060%	0,128%	0,000%
GN Store Nord	HEALTH CARE	MEDICAL DEVICES	Denmark	0,059%	0,003%	0,000%
VARTA	INDUSTRIALS		Germany	0,059%	0,004%	0,000%
FBD HOLDINGS	FINANCIALS	INSURANCE-DIVERSIFIED	Ireland	0,059%	0,001%	0,000%
AMS AG	INFORMATION TECHNOLOGY	SEMICONDUCTORS	Switzerland	0,058%	0,029%	0,000%
MILLICOM INTERNATIONAL CELLU	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Luxembourg	0,058%	0,000%	0,000%
OMV	ENERGY	OIL & GAS INTEGRATED	Austria	0,058%	0,062%	0,000%
FLEX	INDUSTRIALS		Norway	0,057%	0,000%	0,000%
SSAB	MATERIALS		Sweden	0,057%	0,031%	0,000%
ZUR ROSE GROUP AG	CONSUMER STAPLES	PHARMACEUTICAL RETAILER	Switzerland	0,057%	0,000%	0,000%
KENMARE RESOURCES	MATERIALS		Ireland	0,057%	0,000%	0,000%
Thales SA	INDUSTRIALS	AEROSPACE & DEFENSE	France	0,057%	0,125%	0,000%
SWATCH GROUP	CONSUMER DISCRETIONARY		Switzerland	0,057%	0,469%	0,000%
Munchener Rückversicherungs-Ge	FINANCIALS	INSURANCE	Germany	0,057%	0,392%	1,183%
DFDS	INDUSTRIALS		Denmark	0,056%	1,093%	0,000%
DAIMLER TRUCK HOLDING	INDUSTRIALS		Germany	0,056%	0,098%	0,000%
BAE SYSTEMS	INDUSTRIALS	AEROSPACE & DEFENSE	United Kingdom	0,056%	0,035%	0,000%
REVENIO	HEALTH CARE	MEDICAL DEVICES	Finland	0,056%	0,000%	0,000%
Ubisoft entertainment	CONSUMER DISCRETIONARY	ELECTRONIC GAMING & MULTIME	France	0,055%	0,096%	0,000%
4IMPRINT GROUP	CONSUMER DISCRETIONARY		United Kingdom	0,055%	0,000%	0,000%
LECTRA	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	France	0,054%	0,007%	0,000%
Nokian Renkaat	CONSUMER DISCRETIONARY		Finland	0,054%	0,003%	0,000%
D'ieteren	CONSUMER DISCRETIONARY		Belgium	0,054%	0,058%	0,000%
Big Yelllow group PLC	REAL ESTATE		United Kingdom	0,053%	0,048%	0,094%
Novozymes	MATERIALS	SPECIALTY CHEMICALS	Denmark	0,053%	0,120%	0,880%
Dometic Group AB	CONSUMER DISCRETIONARY		Sweden	0,053%	0,081%	0,000%
ING Groep	FINANCIALS	BANKS-DIVERSIFIED	Netherlands	0,053%	0,196%	0,000%
Ipsen	HEALTH CARE	DRUG MANUFACTURERS-GENERA	France	0,053%	0,424%	0,000%
ANTIN INFRASTRUCTURE	FINANCIALS		France	0,053%	0,134%	0,000%
BUZZI UNICEM	MATERIALS	CONSTRUCTION MATERIALS	Italy	0,052%	0,000%	0,000%
Alstom	INDUSTRIALS	MACHINERY	France	0,052%	0,008%	0,649%
AAK	CONSUMER STAPLES		Sweden	0,050%	0,010%	0,000%
Carl Zeiss	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Germany	0,050%	0,092%	0,000%
VIENNA INSURANCE GROUP AG W	FINANCIALS	INSURANCE-DIVERSIFIED	Austria	0,050%	0,006%	0,000%

Vitesco Technologies	CONSUMER DISCRETIONARY		Germany	0,050%	0,000%	0,004%
ALPHA FX GROUP	FINANCIALS		United Kingdom	0,050%	0,000%	0,000%
HELLENIC TELECOMMUNICATIONS	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Greece	0,049%	0,000%	0,000%
VIVENDI	COMMUNICATION SERVICES	BROADCASTING	Netherlands	0,048%	0,024%	0,000%
edenred	INFORMATION TECHNOLOGY	IT SERVICES	France	0,048%	0,448%	0,000%
MUNSTER GROUP	FINANCIALS	INSURANCE	Sweden	0,048%	0,000%	0,000%
SCOR	FINANCIALS		France	0,047%	0,061%	0,000%
Hexpol	MATERIALS	SPECIALTY CHEMICALS	Sweden	0,047%	0,049%	0,000%
CAIXABANK	FINANCIALS	BANKS-REGIONAL	Spain	0,047%	0,114%	0,000%
BFF BANK	FINANCIALS		Italy	0,046%	0,610%	0,000%
FUGRO	INDUSTRIALS		Netherlands	0,046%	0,000%	0,000%
COATS GROUP	CONSUMER DISCRETIONARY		United Kingdom	0,046%	0,000%	0,000%
INTERPUMP	INDUSTRIALS		Italy	0,046%	0,142%	0,000%
Iberdrola	UTILITIES		Spain	0,045%	0,194%	0,771%
LISI	INDUSTRIALS		France	0,045%	0,160%	0,000%
Nexity	REAL ESTATE	REAL ESTATE-DIVERSIFIED	France	0,045%	0,000%	0,000%
KARNOV GROUP	INFORMATION TECHNOLOGY		Sweden	0,045%	0,000%	0,000%
DCC	INDUSTRIALS	OIL & GAS REFINING & MARKETIN	Ireland	0,044%	0,065%	0,000%
ASCENTIAL	COMMUNICATION SERVICES	ADVERTISING AGENCIES	United Kingdom	0,044%	0,000%	0,000%
INDRA SYSTEMAS SA	INFORMATION TECHNOLOGY	IT SERVICES	Spain	0,044%	0,014%	0,000%
GRUPO CATALANA OCCIDENTE	FINANCIALS		Spain	0,043%	0,002%	0,000%
FAGRON	HEALTH CARE		Belgium	0,043%	0,019%	0,000%
U-BLOX	INFORMATION TECHNOLOGY		Switzerland	0,042%	0,000%	0,000%
KSB	INDUSTRIALS		Germany	0,042%	0,000%	0,000%
MAREL HF	INDUSTRIALS	MACHINERY	Iceland	0,041%	0,000%	0,000%
MERSEN	INDUSTRIALS		France	0,041%	0,000%	0,000%
GRENERGY RENOVABLES	UTILITIES		Spain	0,041%	0,000%	0,000%
HUGO BOSS AG	CONSUMER DISCRETIONARY		Germany	0,040%	0,084%	0,000%
EURONAV	ENERGY	OIL & GAS REFINING & MARKETIN	Belgium	0,040%	0,000%	0,000%
CAREL INDUSTRIES	INFORMATION TECHNOLOGY		Italy	0,040%	0,000%	0,000%
SANOMA	CONSUMER DISCRETIONARY		Finland	0,040%	0,029%	0,000%
PERMANENT TBS GROUP HOLDIN(	FINANCIALS	BANKS-REGIONAL	Ireland	0,040%	0,000%	0,000%
TECHNOGYM SPA	CONSUMER DISCRETIONARY	LEISURE	Italy	0,039%	0,000%	0,069%
Aalberts Industries N.V.	INDUSTRIALS		Netherlands	0,039%	0,064%	0,000%
State street EUR Liquidity LVNAV F	OPEN ENDED FUND		Luxembourg	0,038%	0,046%	0,000%
KINDRED	CONSUMER DISCRETIONARY		Sweden	0,038%	0,001%	0,000%
Aviva	FINANCIALS	INSURANCE-DIVERSIFIED	United Kingdom	0,038%	0,044%	0,395%
Infineon Technologies	INFORMATION TECHNOLOGY	SEMICONDUCTORS	Germany	0,038%	0,654%	1,536%
DO & COMPANY	INDUSTRIALS	AIPORTS & AIR SERVICES	Austria	0,037%	0,014%	0,000%
FLATEXDEGIRO	FINANCIALS		Germany	0,037%	0,002%	0,000%
XTRACKERS EURO STOXX 50 UCITS	FINANCIALS		Luxembourg	0,037%	0,000%	0,000%
CRITEO ADS	INFORMATION TECHNOLOGY		France	0,036%	0,000%	0,000%
KENDRION	CONSUMER DISCRETIONARY		Netherlands	0,036%	0,000%	0,000%
STRIX GROUP	INFORMATION TECHNOLOGY	ELECTRONIC COMPONENTS	Isle of Man	0,036%	0,000%	0,000%
CARGOTEC	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Finland	0,035%	0,007%	0,000%
EXOR	FINANCIALS	ASSET MANAGEMENT	Netherlands	0,035%	0,017%	0,000%
OCI	MATERIALS		Netherlands	0,034%	0,010%	0,000%
ADVA	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Germany	0,034%	0,167%	0,000%
Bekaert	MATERIALS	METALS & MINING	Belgium	0,034%	0,233%	0,000%
Netcompany	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	Denmark	0,034%	0,002%	0,139%
Sandvik	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Sweden	0,034%	0,068%	0,000%
IPSOS	CONSUMER DISCRETIONARY	CONSULTING SERVICES	France	0,034%	0,037%	0,000%
Volkswagen	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	Germany	0,034%	0,192%	0,000%
AXA	FINANCIALS	CREDIT SERVICES	France	0,033%	0,144%	0,274%
ALTEA	INFORMATION TECHNOLOGY		Norway	0,033%	0,000%	0,000%
TRIGANO	CONSUMER DISCRETIONARY		France	0,033%	0,006%	0,000%
BEFESA	UTILITIES		Spain	0,033%	0,075%	0,000%
VERICI	HEALTH CARE		United Kingdom	0%	0%	0%
BIFFA	UTILITIES		United Kingdom	0,032%	0,018%	0,000%
Solvay	MATERIALS		Belgium	0,031%	0,152%	0,402%
AAREAL BANK	FINANCIALS		Germany	0,031%	0,453%	0,000%
UNIPHAR PLC	HEALTH CARE		Ireland	0,031%	0,003%	0,000%
BILFINGER	INDUSTRIALS		Germany	0,031%	0,092%	0,000%
Cellnex Telecom	COMMUNICATION SERVICES		Spain	0,031%	0,100%	0,301%
ADRIATIC METALS	MATERIALS		United Kingdom	0,031%	0,000%	0,000%
BOOHOO GROUP	CONSUMER DISCRETIONARY		United Kingdom	0,031%	0,180%	0,000%
BOSKALIS WESTMINSTER	INDUSTRIALS		Netherlands	0,031%	0,266%	0,000%
GRENKELEASING	FINANCIALS		Germany	0,031%	0,035%	0,000%
SPAREBANKEN VEST	FINANCIALS		Norway	0,030%	0,002%	0,000%
ORIGIN ENTERPRISES PLC	CONSUMER STAPLES		Ireland	0,030%	0,001%	0,000%
S&T AG	INFORMATION TECHNOLOGY		Germany	0,030%	0,000%	0,000%
SUBSEA 7	ENERGY		Luxembourg	0,030%	0,011%	0,000%
Prosus	CONSUMER DISCRETIONARY	INTERNET CONTENT & INFORMAT	Netherlands	0,029%	0,245%	0,000%
SNAM	ENERGY		Italy	0,029%	0,022%	0,000%
MAPFRE SA	FINANCIALS	INSURANCE-DIVERSIFIED	Spain	0,029%	0,114%	0,000%
CAVERION	INDUSTRIALS		Finland	0,029%	0,004%	0,000%
GLENVEAGH	CONSUMER DISCRETIONARY		Ireland	0,028%	0,000%	0,000%
KAUFMAN AND BROAD	CONSUMER DISCRETIONARY		France	0,028%	0,100%	0,000%
SOLUTIONS 30 SE	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	Luxembourg	0,028%	0,347%	0,000%

Wienerberger	MATERIALS	CONSTRUCTION MATERIALS	Austria	0,028%	0,062%	0,000%
SOPRA STERIA GROUP SACA	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER	France	0,028%	0,061%	0,000%
FNAC DARTY	CONSUMER DISCRETIONARY		France	0,028%	0,001%	0,000%
BETTER COLLECTIVE AS	CONSUMER DISCRETIONARY	SOFTWARE-APPLICATION	Sweden	0,028%	0,346%	0,000%
AMG ADVANCED METALLURGICAL	INDUSTRIALS		Netherlands	0,027%	0,000%	0,000%
ALPHAWAVE IP GROUP	INFORMATION TECHNOLOGY		United Kingdom	0,027%	0,000%	0,000%
Henkel AG & Co	CONSUMER STAPLES	HOUSEHOLDS & PERSONAL PROD	Germany	0,027%	0,071%	0,000%
Alten	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER	France	0,027%	0,370%	0,000%
NEXUS	HEALTH CARE		Germany	0,027%	0,000%	0,000%
Vidrala	MATERIALS		Spain	0,027%	0,056%	0,000%
HelloFresh	CONSUMER STAPLES		Germany	0,026%	0,006%	0,000%
AIB Group PLC	FINANCIALS		Ireland	0,026%	0,018%	0,000%
CLARKSON	INDUSTRIALS		United Kingdom	0,026%	0,000%	0,000%
PIAGGIO	CONSUMER DISCRETIONARY		Italy	0,026%	0,014%	0,000%
CTP	REAL ESTATE		Netherlands	0,026%	0,000%	0,000%
DSK HOLDINF	INDUSTRIALS		Switzerland	0,026%	0,000%	0,000%
CINT GROUP	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	Sweden	0,025%	0,003%	0,000%
Valmet	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINE	Finland	0,025%	0,044%	0,000%
CREDITO EMILIANO	FINANCIALS		Italy	0,025%	0,003%	0,000%
BLUE PRISM GROUP	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	United Kingdom	0,025%	0,000%	0,000%
SAFILO	CONSUMER DISCRETIONARY		Italy	0,024%	0,000%	0,000%
MODERN TIMES	CONSUMER DISCRETIONARY		Sweden	0,024%	0,000%	0,000%
TGS NOPEC GEOPHYSICAL	ENERGY		Norway	0,023%	0,002%	0,000%
AMS-OSRAM	INFORMATION TECHNOLOGY		Austria	0,023%	0,000%	0,000%
CLS	REAL ESTATE		United Kingdom	0,023%	0,000%	0,000%
Plastic Omnium	CONSUMER DISCRETIONARY	AUTO PARTS	France	0,023%	0,018%	0,118%
Foresee Power	INDUSTRIALS		France	0,022%	0,000%	0,070%
FLSMIDTH	INDUSTRIALS	MACHINERY	Denmark	0,022%	0,001%	0,000%
HUSCOMPAGNIET	CONSUMER DISCRETIONARY		Denmark	0,022%	0,000%	0,000%
MEDIA AND GAMES INVEST	CONSUMER DISCRETIONARY		Luxembourg	0,022%	0,000%	0,000%
Yara International	MATERIALS	AGRICULTURAL INPUTS	Norway	0,022%	0,048%	0,000%
DELIVERY HERO	INFORMATION TECHNOLOGY		Germany	0,021%	0,000%	0,000%
BAKKAFROST	CONSUMER STAPLES		Faroe Islands	0,021%	0,000%	0,000%
CAIRING HOMES	CONSUMER DISCRETIONARY		Ireland	0,021%	0,000%	0,000%
BYTES TECHNOLOGIES	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	United Kingdom	0,021%	0,014%	0,000%
GAZTRANSPORT ET TECHNICA SA	ENERGY		France	0,021%	0,128%	0,000%
RHI MAGNESITA	MATERIALS		Austria	0,021%	0,000%	0,000%
LEOVEGAS AB	CONSUMER DISCRETIONARY	ELECTRONIC GAMING & MULTIME	Sweden	0,021%	0,000%	0,000%
Orkla	CONSUMER STAPLES	PACKAGED FOODS	Norway	0,020%	0,051%	0,000%
NABALTEC	MATERIALS		Germany	0,019%	0,422%	0,000%
Bayerische Motoren Werke	CONSUMER DISCRETIONARY		Germany	0,019%	0,194%	0,000%
CONSTRUCCIONES Y AUXIALIAR D	INDUSTRIALS		Spain	0,019%	0,001%	0,000%
SHURGARD	REAL ESTATE		Luxembourg	0,019%	0,000%	0,000%
ACCSYS	MATERIALS		United Kingdom	0,019%	0,047%	0,000%
TIKEHAU CAPITAL	FINANCIALS		France	0,019%	0,000%	0,000%
GRANGES	CONSUMER DISCRETIONARY		Sweden	0,019%	0,202%	0,000%
ACCESSO TECHNOLOGY GROUP	INFORMATION TECHNOLOGY		United Kingdom	0,018%	0,134%	0,000%
KRONES	INDUSTRIALS		Germany	0,018%	0,000%	0,000%
MONTANA AEROSPACE	INDUSTRIALS	AEROSPACE & DEFENSE	Germany	0,018%	0,140%	0,000%
ACERINOX SA	MATERIALS		Spain	0,018%	0,128%	0,000%
MEDIOS	HEALTH CARE		Germany	0,018%	0,000%	0,000%
OUTUKUMPU OYJ	MATERIALS		Finland	0,017%	0,011%	0,000%
CHERRY	INFORMATION TECHNOLOGY		Germany	0,017%	0,000%	0,000%
SESA	INFORMATION TECHNOLOGY		France	0,017%	0,009%	0,000%
QT GROUP	INFORMATION TECHNOLOGY		Finland	0,017%	0,047%	0,000%
ROBERSTER	MATERIALS		France	0,017%	0,000%	0,000%
PATRIZIA	REAL ESTATE		Germany	0,017%	0,036%	0,000%
Ceres Power	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART	United Kingdom	0,016%	0,000%	0,308%
ANGLE	HEALTH CARE		Germany	0,016%	0,000%	0,000%
Boozt AB	CONSUMER DISCRETIONARY	APPAREL RETAIL	Sweden	0,016%	0,002%	0,123%
VGP	REAL ESTATE		Belgium	0,016%	0,001%	0,000%
UNICAJA BANCO SA	FINANCIALS		Spain	0,016%	0,003%	0,000%
Italgas	UTILITIES		Italy	0,016%	0,008%	0,000%
PURETECH HEALTH	HEALTH CARE		Germany	0,015%	0,188%	0,000%
NAVIGATOR SA	MATERIALS		Portugal	0,015%	0,019%	0,000%
Forbo Holding	CONSUMER DISCRETIONARY	BUILDING PRODUCTS & EQUIPME	Switzerland	0,015%	0,137%	0,000%
RECTICEL	INDUSTRIALS		Belgium	0,015%	0,078%	0,000%
LINK MOBILITY GROUP HOLDING	INFORMATION TECHNOLOGY	TELECOM SERVICES	Norway	0,015%	0,000%	0,000%
ACADEMEDIA	CONSUMER DISCRETIONARY		Sweden	0,015%	0,000%	0,000%
APTITUDE	INFORMATION TECHNOLOGY		United Kingdom	0,015%	0,000%	0,000%
SUESS MICROTEC	INFORMATION TECHNOLOGY		Germany	0,015%	0,000%	0,000%
BASWARE	INFORMATION TECHNOLOGY		Finland	0,014%	0,000%	0,000%
CECONOMY	CONSUMER STAPLES	SPECIALTY RETAIL	Germany	0,014%	0,001%	0,000%
ANTARES VISION	INDUSTRIALS		Italy	0,014%	0,000%	0,000%
UPONOR	INDUSTRIALS		Finland	0,014%	0,000%	0,000%
Banca Generali	FINANCIALS		Italy	0,014%	0,122%	0,000%
SECO	INFORMATION TECHNOLOGY		Italy	0,014%	0,001%	0,000%
JOST WERKE	CONSUMER DISCRETIONARY		Germany	0,014%	0,001%	0,000%
SOMFY	INDUSTRIALS	FURNISHINGS, FIXTURES & APPLIA	France	0,014%	0,000%	0,000%

KLINGELNBERG	INDUSTRIALS		Switzerland	0,014%	0,000%	0,000%
DEUTZ	INDUSTRIALS		Germany	0,013%	0,047%	0,000%
FRIEDRICH VORWERK	INDUSTRIALS		Germany	0,013%	0,754%	0,000%
SCANDI STANDARD	CONSUMER STAPLES		Sweden	0,013%	0,000%	0,000%
TECHNOPROBE	INFORMATION TECHNOLOGY		Italy	0,013%	0,021%	0,000%
NOS	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Portugal	0,013%	0,007%	0,000%
EDREAMS ODIGEO	CONSUMER DISCRETIONARY		Spain	0,013%	0,000%	0,000%
ALSO Holding	INFORMATION TECHNOLOGY		Switzerland	0,013%	0,011%	0,000%
JC Decaux	COMMUNICATION SERVICES	MEDIA	France	0,013%	0,000%	0,062%
AMADEUS FIRE	INDUSTRIALS		Germany	0,013%	0,027%	0,000%
IMMOBEL	REAL ESTATE		Belgium	0,012%	0,000%	0,000%
BYSTRONIC	INDUSTRIALS		Switzerland	0,012%	0,160%	0,000%
ALUFLEX	MATERIALS		Switzerland	0,011%	0,000%	0,000%
ELMERA	UTILITIES		Norway	0,011%	0,000%	0,000%
NOBIA	CONSUMER DISCRETIONARY		Sweden	0,011%	0,099%	0,000%
Credit Suisse Group	FINANCIALS	BANKS-DIVERSIFIED	Switzerland	0,011%	0,160%	0,000%
OREZON	MATERIALS		Canada	0,011%	0,154%	0,000%
ELOPAK	MATERIALS		Norway	0,011%	0,000%	0,000%
MEYER BURGER	HEALTH CARE	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,011%	0,012%	0,000%
STILLFRONT GROUP	CONSUMER DISCRETIONARY		Sweden	0,009%	0,000%	0,000%
RESURS	FINANCIALS		Sweden	0,009%	0,000%	0,000%
Scatec	UTILITIES		Norway	0,009%	0,001%	0,015%
DESENIO GROUP	CONSUMER DISCRETIONARY		Sweden	0,009%	0,000%	0,000%
BIKE24	CONSUMER DISCRETIONARY		Germany	0,009%	0,004%	0,000%
ANIMA HOLDING SPA	FINANCIALS		Italy	0,009%	0,008%	0,000%
Société Generale	FINANCIALS		France	0,008%	0,363%	0,056%
PIERCE GROUP	CONSUMER DISCRETIONARY		Sweden	0,008%	0,000%	0,000%
BHG GROUP	CONSUMER DISCRETIONARY		Sweden	0,007%	0,000%	0,000%
KNAUS TABBERT	CONSUMER DISCRETIONARY		Germany	0,007%	0,000%	0,000%
PROMOTORA DE INFORMACIONE	CONSUMER DISCRETIONARY		Spain	0,006%	0,000%	0,000%
WESTWING	CONSUMER DISCRETIONARY		Germany	0,006%	0,000%	0,000%
COBALT INTERNATIONAL ENERGY	ENERGY	OIL & GAS REFINING & MARKETIN	United States	0%	0%	0%
PGS	ENERGY	ENERGY EQUIPMENT	Norway	0,005%	0,000%	0,000%
CEMBRA MONEY BANK	FINANCIALS		Switzerland	0,004%	0,016%	0,000%
ULTIMOVACS	HEALTH CARE		Norway	0,004%	0,000%	0,000%
PROQR THERAPEUTICS	HEALTH CARE		Netherlands	0,003%	0,000%	0,000%
SPHERE MINERALS	ENERGY		Austria	0,003%	0,000%	0,000%
KOYTAS TEXSIL SANAYI	CONSUMER DISCRETIONARY		Turkey	0,000%	0,000%	0,000%
BHP Group	MATERIALS	OTHER INDUSTRIAL METALS & MI	Australia	0,000%	0,042%	0,000%
FACC	INDUSTRIALS		Austria	0,000%	0,000%	0,000%
Lenzing	MATERIALS		Austria	0,000%	0,002%	0,000%
MAYR MELNOHOF KARTON	MATERIALS		Austria	0,000%	0,006%	0,000%
OSTERREICHISCHE POST	INDUSTRIALS	INTREGRATED FREIGHT 6 LOGISTI	Austria	0,000%	0,015%	0,000%
RAIFFENEISEN BANK	FINANCIALS	BANKS-DIVERSIFIED	Austria	0,000%	0,007%	0,000%
SEMPERIT	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Austria	0,000%	0,002%	0,000%
SHOELLER BLECKMANN	ENERGY	OIL & GAS EQUIPMENT & SERVICE	Austria	0,000%	0,015%	0,000%
STRABAG	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Austria	0,000%	0,006%	0,000%
TELEKOM AUSTRIA	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Austria	0,000%	0,011%	0,000%
UBM	REAL ESTATE	REAL ESTATE DEVELOPMENT	Austria	0,000%	0,002%	0,000%
Verbund	UTILITIES	UTILITIES-RENEWABLES	Austria	0,000%	0,055%	0,000%
VOESTALPINE AG	MATERIALS	STEEL	Austria	0,000%	0,015%	0,000%
Ackermans & van Hareen	INDUSTRIALS	CONSTRUCTION & ENGINEERING	Belgium	0,000%	0,018%	0,000%
Aedifica SA	REAL ESTATE		Belgium	0,000%	0,000%	0,067%
Ageas SA	FINANCIALS	INSURANCE	Belgium	0,000%	0,093%	0,000%
Anheuser-Busch InBev	CONSUMER STAPLES	BEVERAGES-BREWERS	Belgium	0,000%	0,090%	0,077%
BPOST	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	Belgium	0,000%	0,001%	0,000%
ECONOM GROUP SA	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	Belgium	0,000%	0,010%	0,000%
FRANZ COLRUYT	CONSUMER STAPLES		Belgium	0,000%	0,016%	0,000%
GIMV	FINANCIALS	ASSET MANAGEMENT	Belgium	0,000%	0,104%	0,000%
Groupe Bruxelles Lambert	FINANCIALS	CAPITAL MARKETS	Belgium	0,000%	0,065%	0,000%
LOTUS BAKERIES NV	CONSUMER STAPLES	PACKAGED FOODS	Belgium	0,000%	0,023%	0,000%
Ontex Group NV	CONSUMER STAPLES		Belgium	0,000%	0,000%	0,031%
Proximus	COMMUNICATION SERVICES		Belgium	0,000%	0,069%	0,000%
SOFINA	FINANCIALS	ASSET MANAGEMENT	Belgium	0,000%	0,024%	0,000%
TELENET GROUP HOLDING	COMMUNICATION SERVICES	TELECOM SERVICES	Belgium	0,000%	0,005%	0,000%
CINT GROUP AB	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Brazil	0,000%	0,020%	0,000%
Ballard Power system Plc	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Canada	0,000%	0,000%	0,000%
CEZ AS	UTILITIES		Czech Republic	0,000%	0,008%	0,000%
KOMERCNI BANKA AS	FINANCIALS		Czech Republic	0,000%	0,027%	0,000%
WAG Payment solutions	INFORMATION TECHNOLOGY		Czech Republic	0,000%	0,000%	0,000%
Ambu -B-	HEALTH CARE		Denmark	0,000%	0,052%	0,000%
Chr Hansen Holdin	MATERIALS	SPECIALTY CHEMICALS	Denmark	0,000%	0,083%	0,381%
Coloplast -B-	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Denmark	0,000%	0,103%	0,000%
DEMANT	HEALTH CARE		Denmark	0,000%	0,011%	0,000%
DRILLING CO.	ENERGY	OIL & GAS DRILLING	Denmark	0,000%	0,015%	0,000%
DS NORDEN AS	INDUSTRIALS	MARINE TRANSPORTATION	Denmark	0,000%	0,090%	0,000%
ISS AS	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	Denmark	0,000%	0,050%	0,000%
Jykse Bank A.S.	FINANCIALS	BANKS-REGIONAL	Denmark	0,000%	0,118%	0,000%
JYSKE BANK	FINANCIALS	BANKS-REGIONAL	Denmark	0,000%	0,012%	0,000%

MATAS	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	Denmark	0,000%	0,002%	0,000%
NKT AS	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART	Denmark	0,000%	0,005%	0,000%
Orsted	UTILITIES	UTILITIES-RENEWABLES	Denmark	0,000%	0,047%	0,392%
RINGKJOEBING LANDBOBANK	FINANCIALS	BANKS-REGIONAL	Denmark	0,000%	0,016%	0,000%
ROCKWOOL International	INDUSTRIALS		Denmark	0,000%	0,016%	0,027%
SCHOUW AS	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Denmark	0,000%	0,002%	0,000%
SPAR NORD BANK	FINANCIALS	BANKS-REGIONAL	Denmark	0,000%	0,003%	0,000%
SYDBANK	FINANCIALS	BANKS-REGIONAL	Denmark	0,000%	0,021%	0,000%
Topdanmark	FINANCIALS	INSURANCE-DIVERSIFIED	Denmark	0,000%	0,081%	0,000%
Vestas wind Systems	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Denmark	0,000%	0,047%	1,069%
AKTIA BANK	FINANCIALS	BANKS-REGIONAL	Finland	0,000%	0,001%	0,000%
CITYCON OYJ	REAL ESTATE	REAL ESTATE-DIVERSIFIED	Finland	0,000%	0,001%	0,000%
Elisa	COMMUNICATION SERVICES	TELECOM SERVICES	Finland	0,000%	0,043%	0,000%
Fortum	UTILITIES	UTILITIES-RENEWABLES	Finland	0,000%	0,115%	0,000%
HARVIA	CONSUMER DISCRETIONARY	LEISURE	Finland	0,000%	0,006%	0,000%
KEMIRA	MATERIALS	CHEMICALS	Finland	0,000%	0,013%	0,000%
Kesko	CONSUMER STAPLES	GROCERY STORES	Finland	0,000%	0,145%	0,000%
METSA BOARD	INDUSTRIALS		Finland	0,000%	0,016%	0,000%
MUSTI GROUP	CONSUMER DISCRETIONARY	PERSONAL SERVICES	Finland	0,000%	0,188%	0,000%
Orion	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Finland	0,000%	0,035%	0,000%
Sampo OYJ	FINANCIALS	INSURANCE-DIVERSIFIED	Finland	0,000%	0,313%	0,000%
Stora Enso -R-	MATERIALS	PAPER & PAPER PRODUCTS	Finland	0,000%	0,195%	0,180%
Tieto	INFORMATION TECHNOLOGY		Finland	0,000%	0,020%	0,000%
TOKMANNI	CONSUMER DISCRETIONARY	DISCOUNT STORES	Finland	0,000%	0,376%	0,000%
2MX Organic SA	FINANCIALS	DIVERSIFIED FINANCIAL SERVICES	France	0,000%	0,003%	0,044%
Accor	CONSUMER DISCRETIONARY	LODGING	France	0,000%	0,009%	0,000%
Afyren	MATERIALS		France	0,000%	0,000%	0,136%
Allianz cash Facility fund i3d eur	OPEN ENDED FUND		France	0,000%	0,340%	0,000%
Allianz Securicash SRI IC eur	OPEN ENDED FUND		France	0,000%	0,240%	0,000%
AMUNDI EURO LIQUIDITY SRI	OPEN ENDED FUND		France	0,000%	0,000%	0,000%
Atos	HEALTH CARE	BIOTECHNOLOGY	France	0,000%	0,034%	0,119%
AXA Trésor court Terme Capitalisa	OPEN ENDED FUND		France	0,000%	0,000%	0,296%
BioMérieux	HEALTH CARE	DIAGNOSTICS & RESEARCH	France	0,000%	0,309%	0,307%
BOLLORE	COMMUNICATION SERVICES	ENTERTAINMENT	France	0,000%	0,001%	0,000%
BOUYGUES SA	INDUSTRIALS	ENGINEERING & CONSTRUCTION	France	0,000%	0,000%	0,052%
Carbios	MATERIALS		France	0,000%	0,000%	0,000%
CNP ASSURANCE	FINANCIALS	INSURANCE	France	0,000%	0,001%	0,000%
CNP ASSURANCE	FINANCIALS	INSURANCE-DIVERSIFIED	France	0,000%	0,029%	0,000%
COFACE SA	FINANCIALS	INSURANCE-REINSURANCE	France	0,000%	0,003%	0,000%
Crédit Agricole	FINANCIALS	BANKS-REGIONAL	France	0,000%	0,123%	1,026%
Derichebourg	INDUSTRIALS	WASTE MANAGEMENT	France	0,000%	0,012%	0,000%
électricité de France	UTILITIES	UTILITIES-DIVERSIFIED	France	0,000%	0,019%	0,000%
Entech ---- SHS	INDUSTRIALS		France	0,000%	0,265%	0,049%
ERAMET	MATERIALS	OTHER INDUSTRIAL METALS & MI	France	0,000%	0,006%	0,000%
ESKER	INFORMATION TECHNOLOGY		France	0,000%	0,266%	0,000%
eurazeo	FINANCIALS	ASSET MANAGEMENT	France	0,000%	0,000%	0,196%
Eutelsat communication	COMMUNICATION SERVICES	COMMUNICATION EQUIPMENT	France	0,000%	0,017%	0,000%
Faurencia	CONSUMER DISCRETIONARY	AUTOMOBILES & COMPONENTS	France	0,000%	0,034%	0,338%
GECINA	REAL ESTATE		France	0,000%	0,020%	0,000%
Getlink ACT	INDUSTRIALS	RAILROADS	France	0,000%	0,008%	0,400%
Global Bioenergies	UTILITIES	UTILITIES-RENEWABLES	France	0,000%	0,000%	0,026%
Groupe Berkem SA	MATERIALS	CHEMICALS	France	0,000%	0,076%	0,075%
HOFF GR CM	HEALTH CARE	BIOTECHNOLOGY	France	0,000%	0,000%	0,107%
Hydro-ref-solut SHS	INDUSTRIALS	MACHINERY	France	0,000%	0,000%	0,107%
ID LOGISTICS GROUP	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	France	0,000%	0,240%	0,000%
INTERPARFUMES SA	MATERIALS	CHEMICALS	France	0,000%	0,118%	0,000%
KLEPIERRE	REAL ESTATE		France	0,000%	0,012%	0,000%
La francaise des Jeux	CONSUMER DISCRETIONARY	GAMBLING	France	0,000%	0,008%	0,000%
LAURENT PERRIER	CONSUMER STAPLES	BEVERAGES-WINERIES & DISTILLEI	France	0,000%	0,903%	0,000%
MAINSON DU MONDE	CONSUMER DISCRETIONARY	FURNISHINGS, FIXTURES & APPLIA	France	0,000%	0,001%	0,000%
Medincell Sa	HEALTH CARE	DRUG MANUFACTURERS-GENERA	France	0,000%	0,105%	0,021%
MERCIALYS	REAL ESTATE		France	0,000%	0,003%	0,000%
Metabolic Explorer - ACT OPO	MATERIALS	CHEMICALS	France	0,000%	0,000%	0,073%
METROPOLE TELEVISION	CONSUMER DISCRETIONARY	BROADCASTING	France	0,000%	0,008%	0,000%
NEOEN SA	UTILITIES	UTILITIES-RENEWABLES	France	0,000%	0,061%	0,129%
OENEO	MATERIALS	BUILDING MATERIALS	France	0,000%	0,297%	0,000%
OSTRUM SRI CASH PLUS SICA I-CA	OPEN ENDED FUND		France	0,000%	0,001%	0,012%
OSTRUM SUSTAINABLE TRESORER	OPEN ENDED FUND		France	0,000%	0,000%	1,197%
Renault SA	CONSUMER DISCRETIONARY	AUTO MANUFACTURERS	France	0,000%	0,010%	0,191%
ROBERTET SA	MATERIALS	CHEMICALS	France	0,000%	0,041%	0,000%
ROTHSCHILD & CO	FINANCIALS	CAPITAL MARKETS	France	0,000%	0,246%	0,000%
SOCIETE BIC SA	INDUSTRIALS	HOUSEHOLDS & PERSONAL PRODI	France	0,000%	0,236%	0,000%
SODEXO	FINANCIALS		France	0,000%	0,027%	0,000%
SOITEC	INFORMATION TECHNOLOGY	SEMICONDUCTOR EQUIPMENT &	France	0,000%	0,061%	0,102%
STEF RFW	FINANCIALS		France	0,000%	0,062%	0,000%
Suez	UTILITIES	UTILITIES-REGULATED WATER	France	0,000%	0,004%	0,000%
TELEVISION FRANCAISE	CONSUMER DISCRETIONARY	BROADCASTING	France	0,000%	0,003%	0,000%
Unibail-Rodamco-Westfield Real E	REAL ESTATE	REIT - RETAIL	France	0,000%	0,000%	0,032%
Valeo SA	CONSUMER DISCRETIONARY	AUTO PARTS	France	0,000%	0,126%	0,034%

Veolia Environment	UTILITIES	WASTE MANAGEMENT	France	0,000%	0,191%	1,203%
VIRBAC	HEALTH CARE	DRUG MANUFACTURERS-GENERA	France	0,000%	0,004%	0,000%
Voltalia	UTILITIES	UTILITIES-RENEWABLES	France	0,000%	0,140%	0,256%
WAGA Energy SA	ENERGY	OIL, GAS & CONSUMABLES FUELS	France	0,000%	0,002%	0,116%
ABOUT YOU HOLDING	CONSUMER DISCRETIONARY		Germany	0,000%	0,021%	0,000%
ADESSO SE	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	Germany	0,000%	0,011%	0,000%
ALL FOR ONE	INDUSTRIALS		Germany	0,000%	0,005%	0,000%
ATOSS SOFTWARE	INFORMATION TECHNOLOGY		Germany	0,000%	0,114%	0,000%
Aurubis	MATERIALS	COPPER	Germany	0,000%	0,002%	0,000%
BAUER	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Germany	0,000%	0,004%	0,000%
Bechtle	INFORMATION TECHNOLOGY		Germany	0,000%	0,072%	0,000%
BERENTZEN	CONSUMER STAPLES	BEVERAGES WINERIES	Germany	0,000%	0,001%	0,000%
BERTRANDT	INDUSTRIALS	AUTO PARTS	Germany	0,000%	0,046%	0,000%
CEWEW STIFTUNG &CO	INDUSTRIALS		Germany	0,000%	0,001%	0,000%
CONTINENTAL AG	CONSUMER DISCRETIONARY	AUTO PARTS	Germany	0,000%	0,038%	0,043%
Covestro	MATERIALS	CHEMICALS	Germany	0,000%	0,069%	0,000%
Crop Energies	ENERGY		Germany	0,000%	0,013%	0,000%
DEUSCHE BANK	CONSUMER DISCRETIONARY	FURNISHINGS, FIXTURES & APPLIA	Germany	0,000%	0,016%	0,000%
DEUTSCHE EUROSHOP	REAL ESTATE		Germany	0,000%	0,002%	0,000%
Deutsche Pfandbriefbank	FINANCIALS		Germany	0,000%	0,068%	0,000%
Deutsche Post	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	Germany	0,000%	0,307%	0,751%
DRAEGERWERK KGAA	HEALTH CARE	MEDICAL INSTRUMENTS & SUPPLI	Germany	0,000%	0,001%	0,000%
DUERR AG	INDUSTRIALS	MACHINERY	Germany	0,000%	0,090%	0,098%
DWS GROUP	FINANCIALS	ASSET MANAGEMENT	Germany	0,000%	0,006%	0,000%
Encavis	UTILITIES	CAPITAL MARKETS	Germany	0,000%	0,000%	0,280%
ENERGIEKONTOR	INDUSTRIALS		Germany	0,000%	0,010%	0,000%
ELRINGKLINGER	CONSUMER DISCRETIONARY	AUTO PARTS	Germany	0,000%	0,156%	0,000%
Evonik Industries	MATERIALS	SPECIALTY CHEMICALS	Germany	0,000%	0,074%	0,000%
EVOTEC SE	HEALTH CARE		Germany	0,000%	0,012%	0,000%
FREENET AG	COMMUNICATION SERVICES	TELECOM SERVICES	Germany	0,000%	0,045%	0,000%
FUCHS PETROLUB SE	MATERIALS	SPECIALTY CHEMICALS	Germany	0,000%	0,040%	0,000%
GEA group AG	INDUSTRIALS		Germany	0,000%	0,244%	0,000%
GFT TECHNOLOGIES	INFORMATION TECHNOLOGY		Germany	0,000%	0,030%	0,000%
Hannover Rück	FINANCIALS	INSURANCE-REINSURANCE	Germany	0,000%	0,062%	0,302%
HAPAG-LLOYD	INDUSTRIALS		Germany	0,000%	0,313%	0,000%
HeidelbergCement	MATERIALS	BUILDING MATERIALS	Germany	0,000%	0,015%	0,000%
HELLA	CONSUMER DISCRETIONARY	AUTO PARTS	Germany	0,000%	0,003%	0,000%
HOCHTIEF AG	INDUTRIALS	ENGINEERING & CONSTRUCTION	Germany	0,000%	0,019%	0,000%
HOME24	CONSUMER DISCRETIONARY		Germany	0,000%	0,121%	0,000%
INDUS	INDUSTRIALS		Germany	0,000%	0,036%	0,000%
JENOPTIK	INFORMATION TECHNOLOGY	ELECTRONIC COMPONENTS	Germany	0,000%	0,049%	0,000%
JUNGHEINRICH AG	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Germany	0,000%	0,078%	0,000%
K+S AG	MATERIALS	AGRICULTURAL INPUTS	Germany	0,000%	0,006%	0,000%
KLOECKNER & CO	MATERIALS	METALS	Germany	0,000%	0,635%	0,000%
KOENIG & BAUER AG	INDUSTRIALS		Germany	0,000%	0,190%	0,000%
LEIFHEIT	CONSUMER DISCRETIONARY	HOUSEHOLDES PRODUCTS	Germany	0,000%	0,092%	0,000%
MACHINEFAKTORY BERTHOLD HE	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Germany	0,000%	0,131%	0,000%
MENSCH UN MACHINE SOFTWARI	INDUSTRIALS	SPECIALTY INDUSTRSTIAL SERVICE	Germany	0,000%	0,032%	0,000%
Morphosys	HEALTH CARE	BIOTECHNOLOGY	Germany	0,000%	0,000%	0,061%
NAGARRO	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	Germany	0,000%	0,004%	0,000%
NEW WORK	COMMUNICATION SERVICES	INTERNET CONTENT & INFORMAT	Germany	0,000%	0,009%	0,000%
NORDEX SE	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEI	Germany	0,000%	0,000%	0,017%
OHB	INDUSTRIALS	AEROSPACE & DEFENSE	Germany	0,000%	0,003%	0,000%
POLYPEPTIDE GROUP AG	MATERIALS	CHEMICALS	Germany	0,000%	0,025%	0,000%
PROCREDIT	FINANCIALS		Germany	0,000%	0,312%	0,000%
PROSIEBENSAT.1 MEDIA	COMMUNICATION SERVICES		Germany	0,000%	0,017%	0,000%
REALTECH	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	Germany	0,000%	0,000%	0,000%
RWE	UTILITIES		Germany	0,000%	0,023%	0,000%
SALZGITTER	MATERIALS		Germany	0,000%	0,005%	0,000%
SCHAEFFLER AG	CONSUMER DISCRETIONARY	AUTO PARTS	Germany	0,000%	0,010%	0,000%
Scout24	COMMUNICATION SERVICES	REAL ESTATE SERVICES	Germany	0,000%	0,099%	0,000%
SECUNET SECURITIY NETWORKS	INDUSTRIALS	SECURITY & PROTECTION SERVICE	Germany	0,000%	0,002%	0,000%
Siemens Healthineers AG	HEALTH CARE	DIAGNOSTICS & RESEARCH	Germany	0,000%	0,039%	0,000%
SIXT	INDUSTRIALS	RENTAL & LEASING SERVICES	Germany	0,000%	0,082%	0,000%
Software AG	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	Germany	0,000%	0,044%	0,000%
STO SE	MATERIALS		Germany	0,000%	0,013%	0,000%
Stroeer	COMMUNICATION SERVICES	MEDIA	Germany	0,000%	0,065%	0,000%
TAG Immobilien	REAL ESTATE	REAL ESTATE SERVICES	Germany	0,000%	0,001%	0,000%
TAKKT AG	CONSUMER DISCRETIONARY		Germany	0,000%	0,009%	0,000%
TALANX	FINANCIALS		Germany	0,000%	0,041%	0,000%
TELEFONICA DEUTCHLAND HOLDI	COMMUNICATION SERVICES		Germany	0,000%	0,019%	0,000%
TUI	CONSUMER DISCRETIONARY	TRAVEL SERVICES	Germany	0,000%	0,105%	0,000%
USU SOFTWARE	INFORMATION TECHNOLOGY		Germany	0,000%	0,008%	0,000%
VERBIO VEREINIGTE BIOENERGIE	ENERGY	SPECIALTY CHEMICALS	Germany	0,000%	0,012%	0,000%
Wacker Chemie	MATERIALS	SPECIALTY CHEMICALS	Germany	0,000%	0,206%	0,000%
WUSTENROT	FINANCIALS	BANKS-REGIONAL	Germany	0,000%	0,009%	0,000%
ALPHA SVCS	UTILITIES	UTILITIES-REGULATED WATER	Germany	0,000%	0,056%	0,000%
Zalando	CONSUMER DISCRETIONARY		Germany	0,000%	0,309%	0,030%
AEGEAN AIRLINES	INDUSTRIALS		Greece	0,000%	0,008%	0,000%

MAGYAR TELEKOM	COMMUNICATION SERVICES	TELECOMMUNICATION SERVICES	Hungary	0,000%	0,004%	0,000%
ARION BANK	FINANCIALS		Iceland	0,000%	0,032%	0,000%
ISLANDSBANKI	FINANCIALS		Iceland	0,000%	0,016%	0,000%
ACCENTURE	INFORMATION TECHNOLOGY	TECHNOLOGY SERVICES	Ireland	0,000%	0,017%	0,000%
Äon Plc	FINANCIALS	INSURANCE BROKERS	Ireland	0,000%	0,000%	0,000%
CRH	MATERIALS	BUILDING MATERIALS	Ireland	0,000%	0,225%	0,000%
Flutter	CONSUMER DISCRETIONARY	GAMBLING	Ireland	0,000%	0,090%	0,000%
GLAMBIA	INDUSTRIALS	FOOD PRODUCTS	Ireland	0,000%	0,039%	0,000%
GRAFTON GROUP	INDUSTRIALS		Ireland	0,000%	0,172%	0,000%
GREENCORE GROUP PLC	CONSUMER STAPLES	PACKAGED FOODS	Ireland	0,000%	0,013%	0,000%
HIBERNIA	REAL ESTATE		Ireland	0,000%	0,025%	0,000%
ICON	HEALTH CARE	DIAGNOSTICS & RESEARCH	Ireland	0,000%	0,054%	0,000%
INVESCO LIQUIDITY FUND PLC INV	OPEN ENDED FUND		Ireland	0,000%	0,144%	0,000%
Kerry Group A	CONSUMER STAPLES		Ireland	0,000%	0,218%	1,036%
KEYWORD STUDIOS	INFORMATION TECHNOLOGY	ELECTRONIC GAMING & MULTIME	Ireland	0,000%	0,027%	0,000%
A2A	UTILITIES		Italy	0,000%	0,024%	0,000%
ACEA	UTILITIES		Italy	0,000%	0,000%	0,000%
Amplifon	HEALTH CARE		Italy	0,000%	0,162%	0,000%
Ariston holding	CONSUMER DISCRETIONARY		Italy	0,000%	0,142%	0,000%
Assicurazioni Generali	FINANCIALS	INSURANCE	Italy	0,000%	0,186%	0,052%
AUTOGRILL SPA	CONSUMER DISCRETIONARY		Italy	0,000%	0,087%	0,000%
AZIMUT HOLDING	FINANCIALS		Italy	0,000%	0,105%	0,000%
BANCA FARMAFACTORING	FINANCIALS		Italy	0,000%	0,281%	0,000%
Banca Medilanum	FINANCIALS		Italy	0,000%	0,011%	0,000%
BANCA POPOLARE DI SONDRIO	FINANCIALS	BANKS-REGIONAL	Italy	0,000%	0,003%	0,000%
BANCO BPM SPA	FINANCIALS	BANKS-REGIONAL	Italy	0,000%	0,013%	0,000%
Biesse	INDUSTRIALS	MACHINERY	Italy	0,000%	0,024%	0,000%
BREMBO	CONSUMER DISCRETIONARY	AUTO PARTS	Italy	0,000%	0,042%	0,000%
CAREL INDUSTRIES SPA	INFORMATION TECHNOLOGY	BUILDING MATERIALS	Italy	0,000%	0,043%	0,000%
DOVALUE SPA	FINANCIALS		Italy	0,000%	0,087%	0,000%
EL EN SPA	HEALTH CARE		Italy	0,000%	0,001%	0,000%
Eni SpA	ENERGY		Italy	0,000%	0,079%	0,000%
ERG SPA	UTILITIES	INDEPENDENT POWER AND RENE\	Italy	0,000%	0,000%	0,212%
ESPRINET	INFORMATION TECHNOLOGY		Italy	0,000%	0,006%	0,000%
Gruppo MutuiOnline	FINANCIALS		Italy	0,000%	0,089%	0,000%
HERA SPA	UTILITIES		Italy	0,000%	0,120%	0,000%
ILLIMITY BANK SPA	FINANCIALS		Italy	0,000%	0,108%	0,000%
INTERCOS	CONSUMER DISCRETIONARY		Italy	0,000%	0,021%	0,000%
Intesa Sanpaolo	FINANCIALS		Italy	0,000%	0,075%	1,229%
Iren	FINANCIALS	CAPITAL MARKETS	Italy	0,000%	0,018%	0,000%
LEONARDO	INDUSTRIALS	AEROSPACE & DEFENSE	Italy	0,000%	0,247%	0,000%
MAIRE TECHNIMONT SPA	INDUSTRIALS		Italy	0,000%	0,012%	0,000%
MEDIOBANCA SPA	FINANCIALS		Italy	0,000%	0,312%	0,000%
OVS	CONSUMER DISCRETIONARY	APPARE	Italy	0,000%	0,079%	0,000%
Pirelli	CONSUMER DISCRETIONARY	AUTO PARTS	Italy	0,000%	0,116%	0,000%
PRYSMIAN	INDUSTRIALS		Italy	0,000%	0,042%	0,302%
RECORDATI EURO	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Italy	0,000%	0,001%	0,000%
REPLY	INFORMATION TECHNOLOGY		Italy	0,000%	0,224%	0,210%
SALVATORE FERRAGAMO	CONSUMER DISCRETIONARY	LUXURY GOODS	Italy	0,000%	0,001%	0,000%
SESA	INFORMATION TECHNOLOGY		Italy	0,000%	0,175%	0,000%
Telecom Italia	COMMUNICATION SERVICES	TELECOM SERVICES	Italy	0,000%	0,033%	0,000%
TERNA	UTILITIES	UTILITIES-REGULATED ELECTRIC	Italy	0,000%	0,021%	0,186%
TINEXTA SPA	INDUSTRIALS		Italy	0,000%	0,011%	0,000%
UNIEURO	CONSUMER DISCRETIONARY		Italy	0,000%	0,008%	0,000%
Unipol Gruppo	FINANCIALS	BANKS-DIVERSIFIED	Italy	0,000%	0,010%	0,000%
UnipolSai Assicurazioni	FINANCIALS	INSURANCE-DIVERSIFIED	Italy	0,000%	0,010%	0,000%
WEBUILD	INDUSTRIALS		Italy	0,000%	0,007%	0,000%
BREEDON GROUP	MATERIALS	BUILDING MATERIALS	Jersey	0,000%	0,018%	0,000%
FERGUSON PLC	INDUSTRIALS	INDUSTRIAL DISTRIBUTION	Jersey	0,000%	0,092%	0,000%
GLENCORE PLC	MATERIALS	OTHER INDUSTRIAL METALS & MI	Jersey	0,000%	0,084%	0,000%
MAN GROUP	FINANCIALS	ASSET MANAGEMENT	Jersey	0,000%	0,034%	0,000%
WPP PLC	COMMUNICATION SERVICES	ADVERTISING AGENCIES	Jersey	0,000%	0,060%	0,000%
Hikma Pharmaceuticals	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Jordan	0,000%	0,003%	0,000%
ABERDEEN STANDARD LIQUIDITY	OPEN ENDED FUND		Luxembourg	0,000%	0,116%	0,000%
Allianz Global Investors fund Allia	OPEN ENDED FUND		Luxembourg	0,000%	0,038%	0,000%
Allianz Global Investors fund Allia	OPEN ENDED FUND		Luxembourg	0,000%	0,009%	0,000%
Aroundtown	REAL ESTATE		Luxembourg	0,000%	0,026%	0,000%
BNP PARIBAS INSTICASH EUR	OPEN ENDED FUND		Luxembourg	0,000%	0,016%	0,000%
ELEVA Leaders Small & Mid-Cap E	OPEN ENDED FUND		Luxembourg	0,000%	0,000%	0,000%
Eleva Sustainable Impact Europe f	OPEN ENDED FUND		Luxembourg	0,000%	0,000%	0,000%
INPOST	INDUSTRIALS	SPECIALTY INDUSTRIAL SERVICES	Luxembourg	0,000%	0,006%	0,000%
JPMORGAN EUR LIQUIDITY LVNAV	OPEN ENDED FUND		Luxembourg	0,000%	0,225%	0,000%
L OCCITANE INTERNATIONAL	CONSUMER DISCRETIONARY		Luxembourg	0,000%	0,000%	0,000%
Mirova GBL Environ EQT fd Q eur	OPEN ENDED FUND		Luxembourg	0,000%	0,000%	0,055%
RTL GROUP	COMMUNICATION SERVICES	MEDIA	Luxembourg	0,000%	0,017%	0,000%
ABN AMRO Group NV	FINANCIALS	BANKS-DIVERSIFIED	Netherlands	0,000%	0,239%	0,000%
ACCEL GROUP	CONSUMER DISCRETIONARY		Netherlands	0,000%	0,002%	0,000%
AEGON NV	FINANCIALS	INSURANCE-DIVERSIFIED	Netherlands	0,000%	0,054%	0,000%
BAM GROUP	FINANCIALS	ASSET MANAGEMENT	Netherlands	0,000%	0,512%	0,000%

Basic-Fit NV	CONSUMER DISCRETIONARY		Netherlands	0,000%	0,001%	0,077%
BRUNEL	INDUSTRIALS		Netherlands	0,000%	0,063%	0,000%
Corbion	MATERIALS		Netherlands	0,000%	0,051%	0,537%
DSM	MATERIALS		Netherlands	0,000%	0,384%	1,719%
EUROCOMMERCIAL	REAL ESTATE	REIT-OFFICE	Netherlands	0,000%	0,004%	0,000%
FLOWTRADERS	FINANCIALS	CAPITAL MARKETS	Netherlands	0,000%	0,028%	0,000%
ForFarmers	CONSUMER STAPLES	FARM PRODUCTS	Netherlands	0,000%	0,020%	0,000%
HEIJMANS	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Netherlands	0,000%	0,003%	0,000%
KPN	COMMUNICATION SERVICES	TELECOM SERVICES	Netherlands	0,000%	0,070%	0,000%
NX FILTRATION BV	INDUSTRIALS	MACHINERY	Netherlands	0,000%	0,044%	0,122%
PostNL	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	Netherlands	0,000%	0,021%	0,000%
Randstadt Holding NV	INDUSTRIALS	STAFFING & EMPLOYMENT SERVIC	Netherlands	0,000%	0,078%	0,000%
Royal Dutch Shell	ENERGY		Netherlands	0,000%	0,049%	0,000%
SBM OFFSHORE	ENERGY	ENERGY EQUIPMENT	Netherlands	0,000%	0,026%	0,000%
TECHNIP ENERGIES NV	ENERGY	OIL & GAS EQUIPMENT & SERVICE	Netherlands	0,000%	0,014%	0,000%
Vopak	INDUSTRIALS	TRANSPORTATION INFRASTRUCTU	Netherlands	0,000%	0,012%	0,000%
AKER BP ASA	INDUSTRIALS	CONGLOMERATES	Norway	0,000%	0,054%	0,000%
Borregaard ASA	MATERIALS	SPECIALTY CHEMICALS	Norway	0,000%	0,158%	0,000%
CRAYON GROUP HOLDING ASA	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER	Norway	0,000%	0,039%	0,000%
DNB BANK	FINANCIALS	OTHER	Norway	0,000%	0,045%	0,000%
DNB NOR ASA	INDUSTRIALS	INFORMATION TECHNOLOGY SER	Norway	0,000%	0,059%	0,067%
DNO	ENERGY	OIL & GAS E&P	Norway	0,000%	0,002%	0,000%
Elkem	MATERIALS	SPECIALTY CHEMICALS	Norway	0,000%	0,003%	0,000%
Entra	REAL ESTATE	REIT-OFFICE	Norway	0,000%	0,003%	0,000%
Equinor	ENERGY	OIL & GAS INTEGRATED	Norway	0,000%	0,071%	0,000%
EUROPRIS ASA	CONSUMER DISCRETIONARY	DISCOUNT STORES	Norway	0,000%	0,008%	0,000%
GOLDEN OCEAN	INDUSTRIALS	MARINE SHIPPING	Norway	0,000%	0,012%	0,000%
KONGSBERG GRUPPEN	CONSUMER DISCRETIONARY	AUTO PARTS	Norway	0,000%	0,069%	0,000%
MPC CONTAIN	INDUSTRIALS		Norway	0,000%	0,018%	0,000%
NEL ASA	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Norway	0,000%	0,000%	0,016%
NORDIC SEMICONDUCTORS	INFORMATION TECHNOLOGY	SEMICONDUCTORS	Norway	0,000%	0,039%	0,000%
Norsk Hydro	MATERIALS	ALUMINUM	Norway	0,000%	0,044%	0,000%
SCHIBSTED	COMMUNICATION SERVICES	PUBLISHING	Norway	0,000%	0,023%	0,000%
SPAREBANK NORD NORGE	FINANCIALS		Norway	0,000%	0,007%	0,000%
SPAREBANK OESTLANDET	FINANCIALS		Norway	0,000%	0,002%	0,000%
SPAREBANK SMN	FINANCIALS		Norway	0,000%	0,089%	0,000%
SPAREBANK SR-BANK ASA	FINANCIALS		Norway	0,000%	0,002%	0,000%
Storebrand	FINANCIALS	FINANCIAL CONGLOMERATES	Norway	0,000%	0,093%	0,000%
Telenor	COMMUNICATION SERVICES	TELECOM SERVICES	Norway	0,000%	0,217%	0,000%
TOMRA SYSTEMS	INDUSTRIALS	WASTE MANAGEMENT	Norway	0,000%	0,031%	0,753%
VEIDEKKE	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Norway	0,000%	0,008%	0,000%
ALLEGRO.EU SA	CONSUMER DISCRETIONARY	INTERNET RETAIL	Poland	0,000%	0,010%	0,000%
ASSECO POLAND	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Poland	0,000%	0,001%	0,000%
CORTICEIRA	TIMBER	LUMBER & WOOD PRODUCTION	Portugal	0,000%	0,131%	0,000%
CTT CORREIOS	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	Portugal	0,000%	0,144%	0,000%
GALP ENERGIA	ENERGY	OIL & GAS INTEGRATED	Portugal	0,000%	0,074%	0,000%
Jeronimo Martins	CONSUMER STAPLES	FOOD DISTRIBUTION	Portugal	0,000%	0,137%	0,000%
REN SGPS	UTILITIES		Portugal	0,000%	0,009%	0,000%
SEMAPA SOC	MATERIALS	PAPER & PAPER PRODUCTS	Portugal	0,000%	0,095%	0,000%
Sonae	CONSUMER STAPLES	DEPARTMENT STORES	Portugal	0,000%	0,004%	0,000%
Acciona Energia Renovables	ENERGY		Spain	0,000%	0,056%	1,069%
ACS ACTIVIDADES	INDUSTRIALS		Spain	0,000%	0,001%	0,000%
ATRESMEDIA CORP DE MEDIOS DI	CONSUMER DISCRETIONARY	ENTERTAINMENT	Spain	0,000%	0,005%	0,000%
Banco Bilbao Vizcaya Argentaria	FINANCIALS	BANKS-DIVERSIFIED	Spain	0,000%	0,106%	0,628%
Banco Santander	FINANCIALS		Spain	0,000%	0,256%	0,097%
BANKINTER SA REGS	FINANCIALS	BANKS-REGIONAL	Spain	0,000%	0,068%	0,000%
BANCO DE SABADELL SA	FINANCIALS	BANKS-REGIONAL	Spain	0,000%	0,010%	0,000%
Compagnie automotive	CONSUMER DISCRETIONARY	AUTO PARTS	Spain	0,000%	0,162%	0,000%
EBRO FOODS	CONSUMER STAPLES	PACKAGED FOODS	Spain	0,000%	0,030%	0,000%
EDP Renovaveis	UTILITIES	INDEPENDENT POWER AND RENE	Spain	0,000%	0,000%	0,031%
ENAGAS	UTILITIES	UTILITIES-REGULATED GAS	Spain	0,000%	0,003%	0,000%
Endesa	UTILITIES		Spain	0,000%	0,007%	0,000%
Ferrovial	INDUSTRIALS		Spain	0,000%	0,019%	0,086%
GESTAMP	CONSUMER DISCRETIONARY	AUTO PARTS	Spain	0,000%	0,021%	0,000%
Grifols	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Spain	0,000%	0,168%	0,607%
IMMOBILIARIA COLONIAL SOCIMI	REAL ESTATE	REAL ESTATE SERVICES	Spain	0,000%	0,015%	0,000%
Internatinoal Consolidated AIRLIN	INDUSTRIALS		Spain	0,000%	0,003%	0,000%
LABORATORIOS FARMACEUTICOS	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Spain	0,000%	0,263%	0,000%
LAR ESPANA REAL ESTATE SOCIMI	REAL ESTATE		Spain	0,000%	0,002%	0,000%
LINEA DIRECT ASEGURADORA	FINANCIALS	INDSURANCE- LIFE	Spain	0,000%	0,010%	0,000%
LOGISTICA HOLDING	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	Spain	0,000%	0,000%	0,000%
MEDIASET ESPANA COMUNICATIC	CONSUMER DISCRETIONARY	BROADCASTING	Spain	0,000%	0,152%	0,000%
MERLIN PROPERTIES	REAL ESTATE	REIT-DIVERSIFIES	Spain	0,000%	0,007%	0,000%
Naturgy Energy Group	UTILITIES		Spain	0,000%	0,753%	0,000%
Real Electrica	UTILITIES	UTILITIES-RENEWABLES	Spain	0,000%	0,039%	0,000%
RED ELECTRICA CORP	UTILITIES		Spain	0,000%	0,006%	0,000%
Siemens Gamesa Renewables Ene	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Spain	0,000%	0,192%	0,519%
Solaria Energia	UTILITIES	UTILITIES-RENEWABLES	Spain	0,000%	0,004%	0,669%
telefonica SA	COMMUNICATION SERVICES	TELECOM SERVICES	Spain	0,000%	0,083%	0,035%

VISCOFAN SA	CONSUMER STAPLES	PACKAGING & CONTAINERS	Spain	0,000%	0,004%	0,000%
AddTech	INDUSTRIALS		Sweden	0,000%	0,052%	0,000%
ARJO AB	HEALTH CARE	MEDICAL SERVICES	Sweden	0,000%	0,113%	0,000%
Assa abloy -B-	INDUSTRIALS		Sweden	0,000%	0,280%	0,984%
ATRIUM LJUNGBERG	REAL ESTATE		Sweden	0,000%	0,045%	0,000%
AXFOOD AB	CONSUMER STAPLES	GROCERY STORES	Sweden	0,000%	0,035%	0,325%
Beijer	INDUSTRIALS		Sweden	0,000%	0,019%	0,000%
BillerudKorsnas	MATERIALS		Sweden	0,000%	0,044%	0,000%
BOLIA AB	CONSUMER DISCRETIONARY	FURNISHINGS, FIXTURES & APPLIA	Sweden	0,000%	0,003%	0,000%
Boliden	MATERIALS	OTHER INDUSTRIAL METALS & MI	Sweden	0,000%	0,010%	0,000%
Bravida Holding	INDUSTRIALS		Sweden	0,000%	0,001%	0,000%
CASTELLUM	REAL ESTATE	REAL ESTATE-DEVELOPMENT	Sweden	0,000%	0,027%	0,000%
CELLAVISION	HEALTH CARE	MEDICAL DEVICES	Sweden	0,000%	0,019%	0,000%
CLOETTA	CONSUMER STAPLES		Sweden	0,000%	0,001%	0,000%
ELECTROLUX	CONSUMER DISCRETIONARY		Sweden	0,000%	0,016%	0,000%
Evolution	CONSUMER DISCRETIONARY	GAMBLING	Sweden	0,000%	0,005%	0,000%
FABEGE	REAL ESTATE	REAL ESTATE SERVICES	Sweden	0,000%	0,018%	0,000%
FORTNOX	INFORMATION TECHNOLOGY		Sweden	0,000%	0,010%	0,000%
G5 ENTERTAINMENT	COMMUNICATION SERVICES		Sweden	0,000%	0,345%	0,000%
Getinge	HEALTH CARE	MEDICAL DEVICES	Sweden	0,000%	0,310%	0,000%
Hennes & Mauritz	CONSUMER DISCRETIONARY	APPAREL RETAIL	Sweden	0,000%	0,000%	0,027%
HMS NETWORKS	INFORMATION TECHNOLOGY	COMMUNICATION EQUIPMENT	Sweden	0,000%	0,005%	0,000%
HOLMEN	MATERIALS		Sweden	0,000%	0,009%	0,000%
Husqvarna	CONSUMER DISCRETIONARY	TOOLS & ACCESSORIES	Sweden	0,000%	0,146%	0,000%
Industrivarden AB	FINANCIALS		Sweden	0,000%	0,118%	0,002%
INTRUM	INDUSTRIALS	CREDIT SERVICES	Sweden	0,000%	0,005%	0,000%
Investor -B-	FINANCIALS	ASSET MANAGEMENT	Sweden	0,000%	0,044%	0,000%
INSTALCO	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Sweden	0,000%	0,004%	0,000%
INWINDO	INDUSTRIALS	FURNISHINGS, FIXTURES & APPLIA	Sweden	0,000%	0,009%	0,000%
KINNEVIK	FINANCIALS		Sweden	0,000%	0,142%	0,000%
Lifco	HEALTH CARE		Sweden	0,000%	0,014%	0,000%
LINDAB INTERNATIONAL	INDUSTRIALS	BUILDING PRODUCTS & EQUIPME	Sweden	0,000%	0,129%	0,000%
LOOMIS	INDUSTRIALS	SECURITY & PROTECTION SERVICE	Sweden	0,000%	0,127%	0,000%
MEKONOMEN	CONSUMER DISCRETIONARY	INDUSTRIAL DISTRIBUTION	Sweden	0,000%	0,002%	0,000%
NIBE Industrier	INDUSTRIALS	BUILDING PRODUCTS & EQUIPME	Sweden	0,000%	0,034%	0,711%
NOBINA	INDUSTRIALS	RAILROADS	Sweden	0,000%	0,002%	0,000%
Nordic Entertainment Group	CONSUMER DISCRETIONARY	ELECTRONIC GAMING & MULTIME	Sweden	0,000%	0,074%	0,000%
NOLATO	INDUSTRIALS		Sweden	0,000%	0,013%	0,000%
OX2 AB	INDUSTRIALS		Sweden	0,000%	0,008%	0,000%
Peab	INDUSTRIALS		Sweden	0,000%	0,023%	0,000%
SAAB	INDUSTRIALS	AEROSPACE & DEFENSE	Sweden	0,000%	0,035%	0,000%
SAMHALLSBYGG	REAL ESTATE	REIT-OFFICE	Sweden	0,000%	0,008%	0,000%
SDIPTECH	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	Sweden	0,000%	0,004%	0,000%
SINCH	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Sweden	0,000%	0,198%	0,000%
SECTRA AB	HEALTH CARE		Sweden	0,000%	0,001%	0,000%
SECURITAS AB	INDUSTRIALS	SECURITY & PROTECTION SERVICE	Sweden	0,000%	0,159%	0,000%
SKANDINAVISKA ENSKILDA BANKE	FINANCIALS	BANKS-REGIONAL	Sweden	0,000%	0,020%	0,000%
Skanska	INDUSTRIALS	ENGINEERING & CONSTRUCTION	Sweden	0,000%	0,025%	0,000%
SKF	INDUSTRIALS	TOOLS & ACCESSORIES	Sweden	0,000%	0,142%	0,000%
SURGICAL SCIENCE SWEDEN AB	HEALTH CARE		Sweden	0,000%	0,008%	0,000%
Svenska Cellulosa	MATERIALS	CHEMICALS	Sweden	0,000%	0,002%	0,020%
Svenska Handelsbanken	FINANCIALS	BANKS-DIVERSIFIED	Sweden	0,000%	0,139%	0,225%
Sweco AB	INDUSTRIALS		Sweden	0,000%	0,000%	0,115%
Swedbank	FINANCIALS	BANKS-REGIONAL	Sweden	0,000%	0,111%	0,000%
SWEDENCARE	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Sweden	0,000%	0,001%	0,000%
Swedish Match	CONSUMER STAPLES	TOBACCO	Sweden	0,000%	0,051%	0,000%
Telia	COMMUNICATION SERVICES	TELECOM SERVICES	Sweden	0,000%	0,019%	0,000%
Trelleborg	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINER	Sweden	0,000%	0,031%	0,000%
TROAX GROUP	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINER	Sweden	0,000%	0,090%	0,000%
TRUECALLER	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Sweden	0,000%	0,010%	0,000%
Volvo Treasury	FINANCIALS		Sweden	0,000%	0,000%	0,101%
ABB	INDUSTRIALS	ELECTRICAL EQUIPMENTS & PART	Switzerland	0,000%	0,046%	0,000%
ADECCO GROUP	INDUSTRIALS	OTHER	Switzerland	0,000%	0,047%	0,000%
ALLREAL HOLDING	REAL ESTATE	REAL ESTATE-DIVERSIFIED	Switzerland	0,000%	0,011%	0,000%
Bachem Holding	HEALTH CARE	CHEMICALS	Switzerland	0,000%	0,121%	0,000%
BALOISE HOLDING AG	FINANCIALS	OTHER	Switzerland	0,000%	0,012%	0,000%
BANQUE CANTONALE VAUDOISE	FINANCIALS	BANKS-REGIONAL	Switzerland	0,000%	0,005%	0,000%
BOSSARD	INDUSTRIALS	INDUSTRIAL DISTRIBUTION	Switzerland	0,000%	0,009%	0,000%
BUCHER INDUSTRIES	INDUSTRIALS		Switzerland	0,000%	0,110%	0,000%
Chocoladefabriken Lindt & Sprüng	CONSUMER STAPLES		Switzerland	0,000%	0,085%	0,000%
CLARIANT	MATERIALS	OTHER	Switzerland	0,000%	0,005%	0,000%
Coca-Cola HBC	CONSUMER STAPLES	BEVERAGES-NON ALCOHOLIC	Switzerland	0,000%	0,018%	0,000%
COMET HOLDING	INFORMATION TECHNOLOGY	SCIENTIFIC & TECHNICAL INSTRUM	Switzerland	0,000%	0,013%	0,000%
Compagnie Financière Richemont	CONSUMER DISCRETIONARY	OTHER	Switzerland	0,000%	0,205%	0,126%
DAETWEYER	INDUSTRIALS		Switzerland	0,000%	0,001%	0,000%
DKSH holding	INDUSTRIALS	CONSULTING SERVICES	Switzerland	0,000%	0,080%	0,000%
EDAG	CONSUMER DISCRETIONARY		Switzerland	0,000%	0,005%	0,000%
EFG	FINANCIALS	ASSET MANAGEMENT	Switzerland	0,000%	0,007%	0,000%
EMMI	CONSUMER STAPLES	PACKAGED FOODS	Switzerland	0,000%	0,003%	0,000%

EMS-CHEMIE	MATERIALS		Switzerland	0,000%	0,106%	0,000%
FERREXPO	MATERIALS	STEEL	Switzerland	0,000%	0,014%	0,000%
FISCHER (GEORG)	INDUSTRIALS		Switzerland	0,000%	0,030%	0,000%
GALENICA	HEALTH CARE	MEDICAL DISTRIBUTION	Switzerland	0,000%	0,013%	0,000%
Geberit	INDUSTRIALS	OTHER	Switzerland	0,000%	0,191%	0,679%
Givaudan	MATERIALS	OTHER	Switzerland	0,000%	0,001%	0,115%
HELVETIA HOLDING	FINANCIALS	INSURANCE-DIVERSIFIED	Switzerland	0,000%	0,021%	0,000%
HOLCIM	MATERIALS		Switzerland	0,000%	0,011%	0,000%
INTERROLL HOLDING AG	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,059%	0,000%
INTERSHOP HOLDING	REAL ESTATE	REAL ESTATE SERVICES	Switzerland	0,000%	0,111%	0,000%
Julius Baer Group Ltd.	FINANCIALS	OTHER	Switzerland	0,000%	0,034%	0,000%
KARDEX	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,014%	0,000%
KOMAX HOLDING AG	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,060%	0,000%
Kuehne & Nagel International	INDUSTRIALS	OTHER	Switzerland	0,000%	0,239%	0,000%
MEDACTA	HEALTH CARE		Switzerland	0,000%	0,102%	0,000%
MEDMIX	HEALTH CARE		Switzerland	0,000%	0,000%	0,000%
MOBILEZONE HOLDINGS	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	Switzerland	0,000%	0,008%	0,000%
MOBIMO HOLDIN	REAL ESTATE	REAL ESTATE-DIVERSIFIED	Switzerland	0,000%	0,012%	0,000%
MONTANA AEROSPACE	INDUSTRIALS	AEROSPACE & DEFENSE	Switzerland	0,000%	0,020%	0,000%
PSP Swiss Property	REAL ESTATE	REAL ESTATE-DIVERSIFIED	Switzerland	0,000%	0,005%	0,000%
RIETER HOLDING	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,006%	0,000%
SCHWEIZER TECHNOLOGIES	INDUSTRIALS	BUILDING PRODUCTS & EQUIPMEI	Switzerland	0,000%	0,072%	0,000%
SENSIRION HOLDING	INDUSTRIALS	OIL & GAS EQUIPMENT & SERVICE	Switzerland	0,000%	0,060%	0,000%
SFS GROUP	INDUSTRIALS	TOOLS & ACCESSORIES	Switzerland	0,000%	0,001%	0,000%
SIEGFRIED HOLDING	HEALTH CARE	DRUG MANUFACTURERS-GENERA	Switzerland	0,000%	0,017%	0,000%
SKAN GROUP	INFORMATION TECHNOLOGY		Switzerland	0,000%	0,000%	0,000%
Sonova	HEALTH CARE	OTHER	Switzerland	0,000%	0,081%	0,000%
STARRAG	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,002%	0,000%
SULZER	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,022%	0,000%
SULZER	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	Switzerland	0,000%	0,001%	0,000%
Swiss Life holding	FINANCIALS	OTHER	Switzerland	0,000%	0,495%	0,000%
SWISS PRIME SITE	REAL ESTATE	REAL ESTATE SERVICES	Switzerland	0,000%	0,019%	0,000%
SWISS RE	FINANCIALS	INSURANCE-REINSURANCE	Switzerland	0,000%	0,000%	0,058%
SWISS STEEL	MATERIALS	STEEL	Switzerland	0,000%	0,002%	0,000%
Swisscom	COMMUNICATION SERVICES	OTHER	Switzerland	0,000%	0,065%	0,000%
Temenos	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	Switzerland	0,000%	0,062%	0,000%
VONTOBEL	FINANCIALS	ASSET MANAGEMENT	Switzerland	0,000%	0,004%	0,000%
ZEHNDER GROUP	INDUSTRIALS	BUILDING PRODUCTS & EQUIPMEI	Switzerland	0,000%	0,393%	0,000%
NMC HEALTH	HEALTH CARE		United Arab Emirates	0,000%	0,576%	0,000%
3i Group	FINANCIALS		United Kingdom	0,000%	0,041%	0,040%
Abrdn	FINANCIALS	ASSET MANAGEMENT & CUSTODY	United Kingdom	0,000%	0,003%	0,028%
Admiral	FINANCIALS	INSURANCE-PROPERTY & CASUAL1	United Kingdom	0,000%	0,085%	0,000%
AIRTEL AFRICA PLC	COMMUNICATION SERVICES	TELECOM SERVICES	United Kingdom	0,000%	0,014%	0,000%
Ashmore Group	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0,000%	0,117%	0,000%
Asos	CONSUMER DISCRETIONARY	INTERNET RETAIL	United Kingdom	0,000%	0,171%	0,000%
Associated British food	CONSUMER STAPLES	PACKAGED FOODS	United Kingdom	0,000%	0,038%	0,000%
Avast PLC Reg	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	United Kingdom	0,000%	0,000%	0,349%
Aveva Group	INFORMATION TECHNOLOGY	SOFTWARE-APPLICATION	United Kingdom	0,000%	0,339%	0,000%
Barclays	FINANCIALS	BANKS-DIVERSIFIED	United Kingdom	0,000%	0,074%	0,000%
Barratt developments	CONSUMER DISCRETIONARY	RESIDENTIAL CONSTRUCTION	United Kingdom	0,000%	0,025%	0,015%
Beazley PLC	FINANCIALS	INSURANCE-PROPERTY & CASUAL1	United Kingdom	0,000%	0,042%	0,000%
BELLWAY PLC	CONSUMER DISCRETIONARY	RESIDENTIAL CONSTRUCTION	United Kingdom	0,000%	0,033%	0,000%
Berkeley Group Holdings	FINANCIALS	CONGLOMERATES	United Kingdom	0,000%	0,005%	0,000%
British American Tobacco	CONSUMER STAPLES	TOBACCO	United Kingdom	0,000%	0,291%	0,000%
Bunzl	INDUSTRIALS	FOOD DISTRIBUTION	United Kingdom	0,000%	0,131%	0,000%
Capricorn Energy PLC	ENERGY	OIL & GAS E&P	United Kingdom	0,000%	0,015%	0,000%
CIVITAS	REAL ESTATE	REIT-RESIDENTIAL	United Kingdom	0,000%	0,000%	0,000%
COMPUTACENTER	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	United Kingdom	0%	0%	0%
COUNTRYSIDE PROPERTIES	REAL ESTATE		United Kingdom	0%	0%	0%
Diageo	CONSUMER STAPLES	BEVERAGES-WINERIES & DISTILLEI	United Kingdom	0%	0%	0%
DIPLOMA	INDUSTRIALS	INDUSTRIAL DISTRIBUTION	United Kingdom	0%	0%	0%
Drax Group	UTILITIES	UTILITIES-RENEWABLES	United Kingdom	0%	0%	0%
DS SMITH	MATERIALS	PACKAGING & CONTAINERS	United Kingdom	0%	0%	0%
ENERGEAN	ENERGY	OIL & GAS E&P	United Kingdom	0%	0%	0%
Entain	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
Evraz	MATERIALS		United Kingdom	0%	0%	0%
FDM GROUP HOLDING	INFORMATION TECHNOLOGY	INFORMATION TECHNOLOGY SER\	United Kingdom	0%	0%	0%
Ferguson	INDUSTRIALS	INDUSTRIAL DISTRIBUTION	United Kingdom	0%	0%	0%
FEVERTREE	CONSUMER STAPLES	BEVERAGE-NON-ALCOHOLIC	United Kingdom	0%	0%	0%
FRASERS	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
GRAINGER	REAL ESTATE	REAL ESTATE SERVICES	United Kingdom	0%	0%	0%
GREGGS	CONSUMER DISCRETIONARY	GROCERY STORES	United Kingdom	0%	0%	0%
Halfords Group	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	United Kingdom	0%	0%	0%
Halma	INFORMATION TECHNOLOGY	CONGLOMERATES	United Kingdom	0%	0%	1%
Hangreaves Lansdown	MATERIALS	STEEL	United Kingdom	0%	0%	0%
HILL & SMITH HOLDING	MATERIALS	ENGINEERING & CONSTRUCTION	United Kingdom	0%	0%	0%
HISCOX LTD	FINANCIALS	INSURANCE-PROPERTY & CASUAL1	United Kingdom	0%	0%	0%
HSBC Holding	FINANCIALS	BANKS-DIVERSIFIED	United Kingdom	0%	0%	0%
IMI PLC	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	United Kingdom	0%	0%	0%

IMPAX ASSET MANAGEMENT	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0%	0%	0%
INCHCAPE	CONSUMER DISCRETIONARY	AUTO & TRUCK DEALERSHIP	United Kingdom	0%	0%	0%
Informa	COMMUNICATION SERVICES	PUBLISHING	United Kingdom	0%	0%	0%
Intertek group	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	United Kingdom	0%	0%	0%
INVESTEC PLC	FINANCIALS	CAPITAL MARKETS	United Kingdom	0%	0%	0%
ITV	COMMUNICATION SERVICES	BROADCASTING	United Kingdom	0%	0%	0%
JUPITER FUND MANAGEMENT	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0%	0%	0%
KELLER GROUP	INDUSTRIALS	ENGINEERING & CONSTRUCTION	United Kingdom	0%	0%	0%
KEYWORDS STUDIOS PLC	INFORMATION TECHNOLOGY	ELECTRONIC GAMING & MULTIME	United Kingdom	0%	0%	0%
KIER GROUP	INDUSTRIALS	CONSTRUCTIONS & ENGINEERING	United Kingdom	0%	0%	0%
LAND SECURITIES GROUP PLC	REAL ESTATE	REIT-DIVERSIFIES	United Kingdom	0%	0%	0%
LIONTRUST	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0%	0%	0%
London Stock Exchange Group	FINANCIALS	FINANCIAL DATA & STOCK EXCHAI	United Kingdom	0%	0%	0%
M&G GROUP	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0%	0%	0%
MARKS & SPENCER GROUP PLC	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
MARSHALLS PLC	MATERIALS	BUILDING MATERIALS	United Kingdom	0%	0%	0%
MELROSE INDUSTRIES	INDUSTRIALS	INDUSTRIAL SPECIALTY MACHINEF	United Kingdom	0%	0%	0%
MICHAEL PAGE INTERNATIONAL	INDUSTRIALS	STAFFING & EMPLOYMENT SERVIC	United Kingdom	0%	0%	0%
Mondi	MATERIALS	PAPER & PAPER PRODUCTS	United Kingdom	0%	0%	0%
NINETYONE	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0%	0%	0%
Ocado Group PLC	CONSUMER STAPLES	GROCERY STORES	United Kingdom	0%	0%	0%
PARAGON BANKING	FINANCIALS	MORTGAGE FINANCE	United Kingdom	0%	0%	0%
PEBBLE	CONSUMER DISCRETIONARY		United Kingdom	0%	0%	0%
Pennon Group	UTILITIES	UTILITIES-REGULATED WATER	United Kingdom	0%	0%	0%
PETERSHILL	FINANCIALS	ASSET MANAGEMENT	United Kingdom	0%	0%	0%
PETS AT HOME GROUP	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	United Kingdom	0%	0%	0%
Primary Health Properties	REAL ESTATE		United Kingdom	0%	0%	0%
Prudential	FINANCIALS	BANKS-REGIONAL	United Kingdom	0%	0%	0%
REACH PLC	COMMUNICATION SERVICES	PUBLISHING	United Kingdom	0%	0%	0%
Rentokil Initial	INDUSTRIALS	SPECIALTY BUSINESS SERVICES	United Kingdom	0%	0%	0%
RESTAURANT GROUP PLC	CONSUMER STAPLES		United Kingdom	0%	0%	0%
Rolls-Royce holfding PLC	INDUSTRIALS	AEROSPACE & DEFENSE	United Kingdom	0%	0%	0%
Rotork	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	United Kingdom	0%	0%	0%
Royal Mail	INDUSTRIALS	INTEGRATED FREIGHT & LOGISTIC	United Kingdom	0%	0%	0%
SAFESTORE HOLDINGS PLC	REAL ESTATE		United Kingdom	0%	0%	0%
Sage group	INFORMATION TECHNOLOGY	BIOTECHNOLOGY	United Kingdom	0%	0%	0%
SEVERN TRENT	UTILITIES	UTILITIES-REGULATED WATER	United Kingdom	0%	0%	0%
SPIRENT COMMUNICATION	INFORMATION TECHNOLOGY	SOFTWARE-INFRASTRUCTURE	United Kingdom	0%	0%	0%
STANDARD CHARTERED PLC	FINANCIALS	BANKS-DIVERSIFIED	United Kingdom	0%	0%	0%
STHREE	INDUSTRIALS		United Kingdom	0%	0%	0%
SUPERMARKET INCOME REIT	REAL ESTATE	REIT-DIVERSIFIES	United Kingdom	0%	0%	0%
TAYLOR WIMPEY	CONSUMER DISCRETIONARY	RESIDENTIAL CONSTRUCTION	United Kingdom	0%	0%	0%
Technipfmc PLC	ENERGY	OIL & GAS EQUIPMENT & SERVICE	United Kingdom	0%	0%	0%
Telecom Plus	UTILITIES	UTILITIES-DIVERSIFIED	United Kingdom	0%	0%	0%
Tyman	INDUSTRIALS	BUILDING PRODUCTS & EQUIPMEI	United Kingdom	0%	0%	0%
United Utilities Group	UTILITIES	UTILITIES-REGULATED WATER	United Kingdom	0%	0%	0%
Ventrica	COMMUNICATION SERVICES	ADVERTISING AGENCIES	United Kingdom	0%	0%	0%
VIRGIN MONEY UK	FINANCIALS		United Kingdom	0%	0%	0%
Vodafone group	COMMUNICATION SERVICES	TELECOM SERVICES	United Kingdom	0%	0%	0%
Weir Group PLC	INDUSTRIALS	SPECIALTY INDUSTRIAL MACHINEF	United Kingdom	0%	0%	0%
WH SMITH	CONSUMER DISCRETIONARY	SPECIALTY RETAIL	United Kingdom	0%	0%	0%
Willis Towers watson PLC	FINANCIALS	INSURANCE BROKERS	United Kingdom	0%	0%	0%
Wm Morrison Supermarkets	CONSUMER DISCRETIONARY	GROCERY STORES	United Kingdom	0%	0%	0%
WPP	COMMUNICATION SERVICES	ADVERTISING AGENCIES	United Kingdom	0%	0%	0%
YOUGOV PLC	COMMUNICATION SERVICES		United Kingdom	0%	0%	0%
Ecolab Inc	MATERIALS	CHEMICALS	United States	0%	0%	1%
Sunrun Inc	INDUSTRIALS	SOLAR	United States	0%	0%	0%
thermo fisher scient shs	HEALTH CARE	DIAGNOSTICS & RESEARCH	United States	0%	0%	1%
Wolfspeed	INFORMATION TECHNOLOGY	SEMICONDUCTORS	United States	0%	0%	0%
NOMAD FOOD	CONSUMER STAPLES	PACKAGED FOODS	United States Virgin Islands	0%	0%	0%

A.6. Sub-funds ESG Ratings

Fund	ESG overall	Controversy Score	Environmental	Social	Governmental
BlackRock Global Funds - Continental European Flexible Fund	75	90	73	79	70
Janus Henderson Fund - Continental European Fund	82	56	81	84	78
BlackRock Global Funds - European Equity Income Fund	81	70	80	83	78
Threadneedle (Lux) - European Smaller Companies	65	97	58	68	67
BlackRock Global Funds - Euro-Markets Fund	76	83	76	80	72
BlackRock Global Funds - European Fund	72	90	69	77	68
BlackRock Global Funds - European Special Situations Fund	71	90	68	75	69
Fidelity Funds - European Smaller Companies Fund	54	95	46	56	58
Janus Henderson Horizon Fund - Euroland Fund	78	69	77	81	76
Exane Funds 2 - Exane Equity Select Europe	82	67	81	85	78
Lombard Odier Funds - Europe High Conviction	72	88	68	76	71
Janus Henderson Fund - Pan European Fund	82	56	81	85	79
Ninety One Global Strategy Fund - European Equity Fund	81	60	79	84	77
Threadneedle (Lux) - Pan European Small Cap Opportunities	56	99	47	55	60
M&G (Lux) Investment Funds 1 - M&G (Lux) European Strategic Value Fund	78	56	74	80	77
Janus Henderson Horizon Fund - Pan European Smaller Companies Fund	78	69	77	81	77
Allianz Global Investors Fund - Allianz Best Styles Europe Equity SRI	80	46	81	81	79
Allianz Global Investors Fund - Allianz Europe Equity Growth	84	53	85	87	79
Fidelity Funds - European Growth Fund	82	55	82	85	79
MFS Meridian Funds - European Value Fund	81	57	80	84	77
ELEVA UCITS Fund - Eleva European Selection Fund	83	58	86	86	77
Fidelity Funds - European Dynamic Growth Fund	83	59	82	86	79
Amundi Funds - Euroland Equity	82	59	81	85	80
Amundi Funds - European Equity Value	81	60	82	85	75
Schroder International Selection Fund - EURO Equity	80	61	80	84	77
MFS Meridian Funds - European Research Fund	82	61	81	85	78
Allianz Global Investors Fund - Allianz European Equity Dividend	82	61	79	85	82
DNCA Invest - SRI Europe Growth	82	62	80	86	79
Allianz Global Investors Fund - Allianz Euroland Equity Growth	82	63	78	84	81
Candriam Equities L - Europe Innovation	79	63	79	82	76
JPMorgan Funds - Europe Strategic Value Fund	82	66	83	85	76
Aberdeen Standard SICAV II - European Smaller Companies Fund	81	67	80	84	77
Goldman Sachs Funds - Goldman Sachs Europe Core® Equity Portfolio	80	67	81	84	72
Allianz Global Investors Fund - Allianz Europe Equity Growth Select	77	68	73	80	75
BNP Paribas Funds - Euro Equity	78	68	78	82	75
JPMorgan Investment Funds - Europe Select Equity Fund	80	69	80	83	75
The Jupiter Global Fund - Jupiter European Growth	79	69	78	82	73
Invesco Funds - Invesco Sustainable Pan European Structured Equity Fund	78	72	78	83	73
BNP Paribas Funds - Europe Equity	75	72	73	78	72
SICAV ODDO BHF - Euro Credit Short Duration	81	74	80	84	77
Invesco Funds - Invesco Pan European Equity Fund	77	75	81	81	68
Multi Manager Access - EMU Equities Sustainable	74	81	70	77	71
Melchior Selected Trust - European Opportunities Fund	74	83	71	76	73
JPMorgan Funds - Europe Dynamic Technologies Fund	73	83	68	77	70
Robeco Capital Growth Funds - Robeco Sustainable European Stars Equities	76	83	72	81	74
MainFirst - Top European Ideas Fund	74	84	65	77	76
Pictet - Quest Europe Sustainable Equities	76	84	70	79	75
BNP Paribas Funds - Europe Small Cap	72	86	68	78	69
ELEVA UCITS Fund - Eleva Euroland Selection Fund	73	86	70	78	71
JPMorgan Funds - Europe Strategic Growth Fund	75	86	75	78	70
Robeco Capital Growth Funds - Robeco QI European Conservative Equities	76	88	70	79	75
JPMorgan Funds - Euroland Equity Fund	75	88	72	80	70
Invesco Funds - Invesco Euro Equity Fund	70	92	68	73	68
Fidelity Active Strategy - Europe Fund	60	94	58	67	62
Candriam Equities L - Europe Optim Quality	67	96	61	69	69
Digital Funds - Stars Europe	57	97	46	58	62
Schroder International Selection Fund - European Special Situations	55	100	47	56	59

Mirova Funds - Mirova Europe Environmental Equity Fund	77	84	78	81	71
Mirova Funds - Mirova Euro Sustainable Equity Fund	81	68	80	85	75
Candriam Sustainable - Equity Europe	78	78	78	82	73
BNP Paribas Easy - Low Carbon 100 Europe PAB	80	69	81	84	74
BL - BL-Equities Europe	76	82	72	80	72
AXA World Funds - Framlington Sustainable Eurozone	81	66	80	86	75
AXA World Funds - Framlington Sustainable Europe	84	61	83	87	79

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