Politecnico di Torino

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ESG Investments
sustainability does not compromise performance

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1.0 ESG

1.1 ABSTRACT

The purpose of this paper is to show how sustainable investments are “green” not at the expense of returns. For this scope, the financial products and their performances are analyzed in detail.

The first chapter will present the explanation and the history of ESG. In particular, it will talk about the United Nations Sustainable Development Goals, which have become a common language at the international level. Indeed, governments are called upon to review policies, regulations and governance models following their “instructions”.

After a short introduction, the second part will be more technical. Precisely, topics as indexes, ESG products and financial instruments will be presented. Furthermore, there will be an explanation of markets and diffusion of these financial products, with the latest section dedicated to financial markets’ problems.

Moreover, the fifth chapter will be focus on the stability of ESG investments and ESG funds; a detailed analysis will prove that they have been particularly resilient to the economic crisis from Covid-19. Therefore, it will be concluded that the growth of the phenomenon that has taken place in recent years has not been hindered even by the recent economic disturbances.

Finally, in the last chapter, the risk analysis on ESG investments will be carried out to confirm how sustainable investments have performed better than traditional ones.

1.2 INTRODUCTION

Nowadays we are continuously surrounded by environmental troubles; natural disasters, climate change, pollution… are just few examples of earth deterioration. All these events are attributable to Industrial Revolution, indeed, from that event is started a one-way process of planet demolition. Fortunately, the current greater awareness of the population about the exhaustion of our planet's resources has led to growing attention on the issue of sustainability. Parallel to this, the attention has also grown for the social impact of investments; in fact, there is an increasing research for economies that respect the rights of work and society in general.

Moving directly to financial sector, although some investors are still convinced that by investing in sustainable financial products, it is necessary to renounce a part of the performance, always more players are focusing on sustainable finance. In recent decades, the supply and the demand of sustainable products are increasing, both on the part of institutional investors and private savers.

To recap these aspects, in 1987 the World Commission on Environment and Development of the United Nations has drawn up a document, the

Brundtland report, according to which "sustainable development" is defined as "that development which allows the satisfaction of the economic, environmental and social needs of current generations, without compromising the development of future generations "[1]. In other words, sustainable finance collects the set of investment choices, not only based on mere profit criteria or in accordance with the investor's risk profile, but also considering the impact on the real economy, as well as on society and on the environment, observing a long-term time horizon.

To conclude the introduction and to introduce the real ESG topic, it is reported an article's extract that was published in the Journal of Corporate Finance in 2019, entitled: "Firms and social responsibility: A review of ESG and CSR research in corporate finance"[2]. In particular, the article is very important because it immediately highlights the differences between ESG and CSR: "ESG is an acronym developed in a 2004 report by 20 financial institutions in response to a call from Kofi Anon, Secretary-General of the United Nations7 As it implies, ESG refers to how corporations and investors integrate environmental, social and governance concerns into their business models. CSR traditionally has

[1] International Institute for Sustainable Development (IISD)
https://www.iisd.org/mission-and-goals/sustainable-development

[2] Firms and social responsibility: A review of ESG and CSR research in corporate finance
Stuart L.Gillana Andrew KochbLaura T.Starksc
Journal of Corporate Finance
Volume 66, February 2021, 101889
https://www.sciencedirect.com/science/article/abs/pii/S0929119921000092

referred to corporations' activities with regard to being more socially responsible, to being a better corporate citizen. One difference between the two terms is that ESG includes governance explicitly and CSR includes governance issues indirectly as they relate to environmental and social considerations. Thus, ESG tends to be a more expansive terminology than CSR. As noted, we do not review the vast literature solely focused on corporate governance, however, our focus on the environmental and social aspects of ESG/CSR allow us to examine the interrelationships between a company's governance structure and its environmental and social activities."

1.3 EVOLUTION

This brief paragraph is divided in two parts: in the first one, the salient moments in the history of sustainable finance are narrated; in the second part the most significant world and European meetings are presented.

1.3.1 INITIAL EVOLUTION

The first examples of sustainable investments are to be found in antiquity with the first forms of ethical finance. More precisely, they can be attributed to religion, which was in fact the first to condemn investments in unethical activities.

Specifically, the Pioneer Fund, established by religious organizations in 1928 in Boston (USA), is the first ethical fund in the history. The rule of this fund was very simple: companies operating in war, alcohol, tobacco, pornography and gambling sectors were excluded; paving the way for what we now call the SRI approach, Social Responsible Investing.

In the 20th century, after the Great War, various human rights and anti-war movements led to important steps for social and economic development. The 1900 should also be remembered as the century of the recognition, of equal rights for women compared to men. A revolution that reached its peak in the 1970s, paving the way for greater social and economic inclusion of women. This is still very discussed topic, expanded in this new century to "gender equality", (one of the 17 SDGs[3]), objectives to work on for the Agenda for sustainable development. Regarding environmental events, a series of disasters happened in the 1980s, such as the explosion of the Chernobyl nuclear reactor, the chemical disaster in Bhopal, the accident of the oil tanker Exxon Valdez in Alaska, which led to the need of environmental safeguards and social achievements.

All, and not only, these events have led to a path of evolution up to the modern ESG criteria. Starting from the exclusion criterion of the 1928 Pioneer Fund, passing through the best-in-class and engagement in the

[3] The Sustainable Development Goals (SDGs) or Global Goals are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all".
https://en.wikipedia.org/wiki/Sustainable_Development_Goals 21/07/2022

80s and then following with the impact investing of the early 90s, completed with the integration of ESG factors in financial analysis.

In Italy, Social Responsible Investments (SRI) appeared relatively recently, with the first "ethical" sector set up in 1997 by the SGR of the Sanpaolo group.

1.3.2 CONTEMPORARY EVOLUTION

One of the milestones in terms of environment protection is attributed to the year 1997, when during the Kyoto Conference of the Parties[4] (COP3), specific targets have been set for the cuts in gas emissions responsible for the greenhouse effect and global warming. This agreement entered into force in 2005, ratified by 191 countries. It is based on the United Nations Framework Convention on Climate Change (UNFCCC)[5], signed in Rio de Janeiro in 1992 during the historic Earth Summit.

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[4] 2022 United Nations Framework Convention on Climate Change

The Conference of Parties, known as COP, is the decision-making body responsible for monitoring and reviewing the implementation of the United Nations Framework Convention on Climate Change. It brings together the 197 nations and territories – called Parties – that have signed on to the Framework Convention. The COP has met annually since 1995.
https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop

[5] United Nations Framework Convention on Climate Change from which the acronym UNFCCC or FCCC, also known as the Rio Agreements, is an international environmental treaty produced by the United Nations Conference on Environment and Development (UNCED, United Nations Conference on Environment and Development), informally known as the Earth Summit. The treaty aims to reduce greenhouse gas emissions, which are at the root of global warming. The treaty, as originally stipulated, did not set mandatory limits for greenhouse gas emissions to individual nations; it was therefore, from this point of view, legally non-binding.
https://en.wikipedia.org/wiki/United_Nations_Framework_Convention_on_Climate_Change 24/07/2022

In 2006, the United Nations launched the PRI, Principle for Responsible Investment, with the aim of promoting the spread of sustainable and responsible investment among institutional investors, who are called upon to sign and respect the application of the same. Furthermore, the PRI network aims to include sustainability criteria in the decision-making processes concerning investments. The signatories of the principles now manage total assets of 89 trillion dollars, an amount almost equivalent to the equivalent of world GDP.

In September 2015, the governments of 193 UN member countries signed an action program for Sustainable Development called the 2030 Agenda. The Agenda pursues the ambitious goal of transforming our world, literally: "transforming our world", calling the individual countries of the international community to undertake national strategies and plans to pursue the macro-objective of sustainable development. The program incorporates the Sustainable Development Goals, SDGs into a large action program for a total of 169 ' target ' or goals.

Figure 1 17 SDGs'

Few months later, during the Paris Conference COP (COP21), some predictable scenarios were highlighted. In particular, an increase in "environmental refugees" is expected due to drought and floods, which could perhaps reach 250 million by 2050. Deterioration of citizens' health due to pollution, with consequent increase in health costs and risks for the sustainability of systems pensions. Some important consequences for example will be, for the insurance sector, an increase in the difficulty of estimating risks and therefore an increase in premiums or inability to insure various types of risks.

Following the signing of the Paris Agreement on climate and the 2030 Agenda for Sustainable Development of the United Nations, the European Union has placed the issue of sustainability at the center of its priorities, with the aim of accelerating the transition towards of growth attentive to environmental issues. In particular, regarding finance, the Commission took a significant step with the establishment, in December 2016, of a High Level Technical Expert Group on sustainable finance, "HLEG[6]" in order to define a European strategy on sustainable finance.

On 13 July 2017, the HLEG released an Interim Report which was submitted for public consultation.

On January 31, 2018, the Final Report was published with recommendations addressed to the European Commission: starting from the Report, the latter developed an Action Plan on sustainable finance which was presented on March 22, 2018. In general, the actions proposed in the Plan are guided by four objectives:

- Redirect capital flows towards sustainable investments, to bridge the gap that distances Europe from achieving the international sustainable development goals.

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[6] The HLEG comprised 20 senior experts from civil society, the finance sector, academia and observers from European and international institutions. The group was mandated to provide advice to the Commission on how to:

- steer the flow of public and private capital towards sustainable investments
- identify the steps that financial institutions and supervisors should take to protect the stability of the financial system from risks related to the environment
- deploy these policies on a pan-European scale

Financial Stability, Financial Services and Capital Markets Union 03/07/2020
https://ec.europa.eu/info/publications/sustainable-finance-high-level-expert-group_en

- Adequately manage the financial risks deriving from climate change, the exhaustion of resources and problems of a social nature.
- Promote a long-term investment perspective in economic activities, understood as the approach according to which decisions are made with long-term objectives or consequences.
- Promoting the transparency of the financial market on sustainability issues, to allow investors to make responsible and informed assessments.

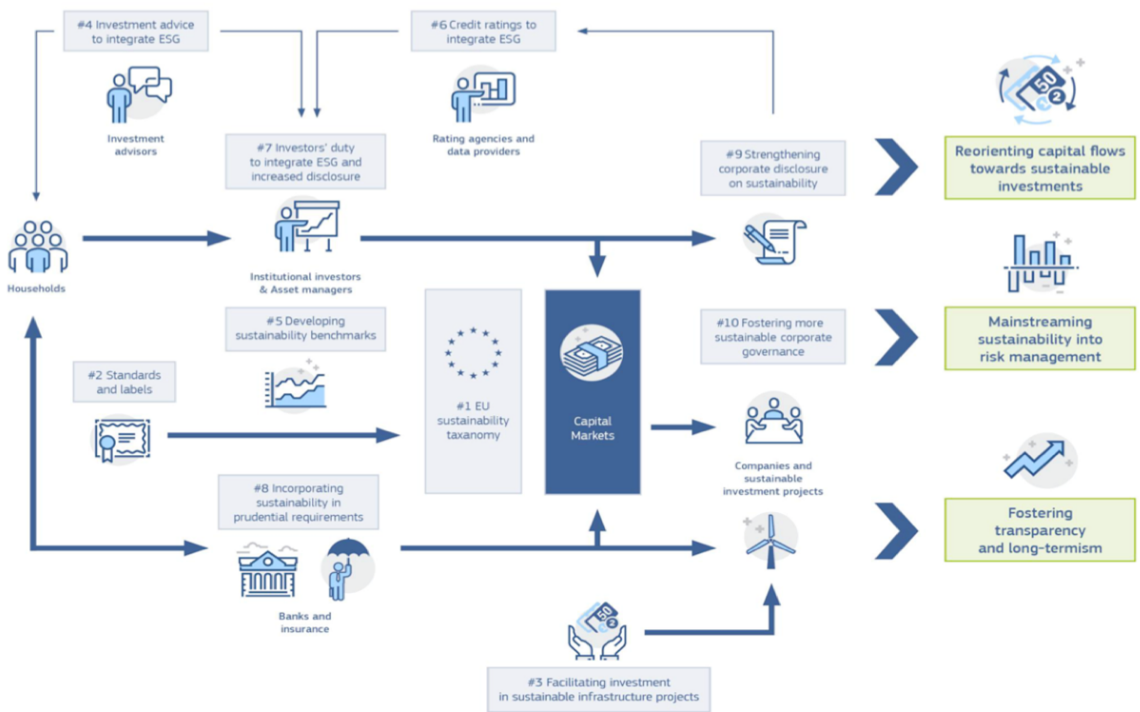

Figure 2 10 points presented in the action plan

In February 2022, EU foreign ministers approved conclusions on the outcome of the COP 26 climate conference and agreed on priorities for the EU's work on climate diplomacy. The conclusions established that the EU and its Member States, as part of a joint Team Europe approach, will engage with partners around the world to accelerate the implementation of the actions and initiatives agreed at COP 26. They also called on other developed countries to fulfill the collective commitment to mobilize 100 billion USD annually. Furthermore, the banks and international financial institutions will play a central role in mobilizing the private sector and shifting the flow of money towards sustainable and green investments.

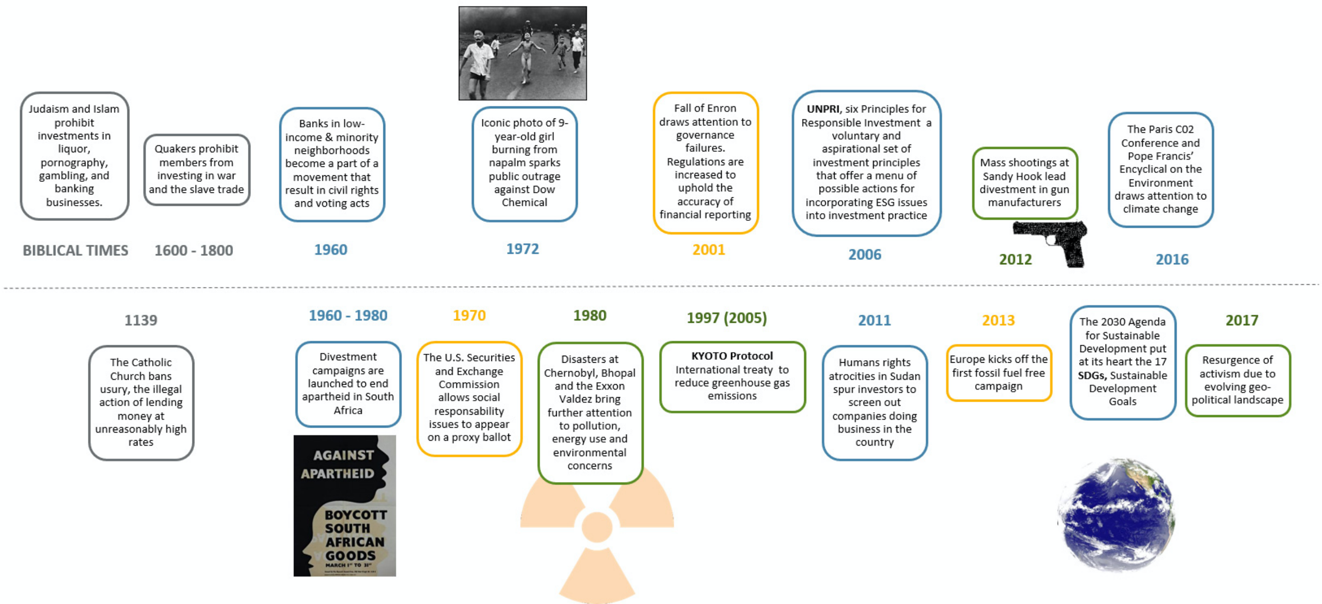

Figure 3 History illustration

1.3.3 ACTUAL SITUATION

In order to report the actual situation, we recall an article from Journal of Cleaner Production entitled: "Measuring the sustainability of investment funds: A critical review of methods and frameworks in sustainable finance"[7].

The author writes: "Capital markets need to join the race of reaching the ambitious Paris Agreement and the United Nations (UN) 2030 Agenda for Sustainable Development (UNCTAD, 2014; UNFCCC, 2015). Up to 7 trillion USD are required every year to reach the 17 Sustainable Development Goals (SDGs) by 2030 (UNEP, 2019). The reality is that these needs are not yet close to being covered. A report of the UN Framework Convention on Climate Change (UNFCCC) estimated that only 681 billion USD flowed into climate finance in 2016 (Yeo, 2019). The asset management industry, in contrast, estimates that investments in so-called "sustainable assets" are 17 times larger than the UNFCC estimate – up to 12 trillion USD in US assets, and 11 trillion EUR in Europe (Eurosif, 2018; US SIF, 2018). This discrepancy raises the question of how many funds are in fact targeted towards sustainability. In Europe, only 108 billion EUR of the 11 trillion EUR in sustainable

[7] Measuring the sustainability of investment funds: A critical review of methods and frameworks in sustainable finance
Ioana Stefania Popescuab Claudia Hitaja Enrico Benettoa
Journal of Cleaner Production
Volume 314, 10 September 2021, 128016
https://www.sciencedirect.com/science/article/pii/S0959652621022344

assets are impact investments – investments actively seeking to generate a positive environmental or social return (EFAMA, 2020; Eurosif, 2018). However, as more and more investment products labelled “sustainable” enter the market, concerns about green- and impact-washing are growing (OECD, 2020a; Revelli, 2017).”

From this extract, we understand that the change to ESG is going on, but it is not in line with the target.

1.4 ESG CRITERIA

Even if in fact the ESG criteria have all been mentioned at least once in the previous paragraphs, it is important to recall them all and analyze them more in depth. Therefore, ESG standards are used to measure the company's impact on environment, society, and governance. Companies are increasingly focusing on emphasizing the sustainability of their businesses and initiatives. These criteria can also be used to create the best ranking of companies to meet these three parameters. Companies are no longer evaluated simply by observing their ability to produce money, but also in producing ethical results, such as social inclusion or environmental protection.

- Criterion E: The "Environmental" criterion refers to numerous parameters such as attention to climate change, food safety, the containment of carbon dioxide emissions or attempts to reduce the use of natural resources. It therefore includes all the initiatives and actions that aim to reduce as much as possible the impact that companies have on the environment and on the territory.

- Criterion S: as for the "Social" side, this includes all corporate decisions and initiatives that have a social impact. Therefore, there are elements such as: respect for human rights, attention to working conditions, gender equality, the rejection of all forms of discrimination. Added to these elements is the possibility of companies to contribute to increasing the well-being of the inhabitants of the area in which the company is located, through various initiatives or events. Social criteria are certainly the most easily observed even by members outside the organization and their compliance facilitates the development of a positive manage of the company.
- Criterion G: the last criterion of the ESG is the one that includes the "Governance" responsibilities of companies. This concerns respect for meritocracy, diversity policies in the composition of the board of directors, the fight against all forms of corruption, and retribution ethics. "Governance" is also particularly important because externals observers evaluate the corporate identity with this parameter. Governance makes it possible to define whether the sustainable actions and initiatives adopted by the company are also accompanied by organizational forms in the workplace that

are equally close to the principles of ESG (Environmental, Social, Governance).

Figure 4 ESG criteria

1.5 STRATEGIES OF ESG INVESTMENTS

The first "technical" topic in ESG, is related to strategies. They have been defined by the GSIA[8](Global Sustainable Investment Alliance), and can be roughly divided into seven groups:

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[8] The Global Sustainable Investment Alliance is an organization promoting sustainable investments through a series regional affiliate. GSIA members include the US SIF, European Sustainable Investment Forum (Eurosif), Responsible Investment Association Australasia (RIAA), the UK Sustainable Investment and Finance Association (UKSIF), the Responsible Investment Association of Canada (RIA), and the Dutch Association of Investors for Sustainable Development (VBDO). GSIA publishes a biannual global Sustainable Investment Review with regional data around the

- Negative selection/Exclusion: as already mentioned above, it was the first type of ESG fund and is detailed by not investing in certain sectors. For example, in companies operating in the arms, alcohol, tobacco, gambling sectors…
- Positive selection/Best in class: approach that aims to select the best companies, from an ESG point of view, within a given sector. In other words, companies operating in a specific sector are compared and the best ones are chosen based on ESG performance.
- Regulations: The choice is based on current regulations therefore investments are selected based on compliance with international norms and standards. The most used standards are those defined in the OECD[9], ONU.
- Thematic investments: investments in themes or activities specifically focused on sustainability; for example: clean energy,

world. According to the 2020 report, the global sustainable investment market reached $35.3 trillion at the beginning of 2020, a 15% increase in two years. In total this amount equates the 36% of all professionally managed assets across regions covered in this report.

http://www.gsi-alliance.org 2022

[9] The Organization for Economic Co-operation and Development (OECD; French: *Organisation de Coopération et de Développement Économiques*, *OCDE*) is an intergovernmental economic organization with 38 member countries, founded in 1961 to stimulate economic progress and world trade. It is a forum of countries describing themselves as committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices and coordinate domestic and international policies of its members. Most of OECD members are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries. As of 2017, the OECD member countries collectively comprised 62.2% of global nominal GDP (US$49.6 trillion) and 42.8% of global GDP (Int$54.2 trillion) at purchasing power parity. The OECD is an official United Nations observer.
https://en.wikipedia.org/wiki/OECD 22/07/2022

reduction of polluting emissions, water treatment, sustainable technologies, and agriculture.

- Impact/community investing: investments in companies, organizations, or funds with the intention of achieving a positive environmental impact, along with a financial return; they are targeted investments, often made in the private market, which aim to help solve social or environmental problems by providing finance. Examples are renewable energies, investments in microfinance and social housing, “community” investments, in which capital is specifically aimed at favoring marginal individuals or communities.
- ESG integration: means the approach that provides for the explicit inclusion of environmental, social and governance factors in traditional financial analysis. The integration process is focused on the potential impact (negative or positive) of ESG issues on the company's economic and financial results, and therefore on the effects in terms of investment risk-return. According to the Forum for Sustainable Finance, integration is an evolved form of strategies that imply a positive and negative selection (exclusions, international conventions, best in class selection and thematic investments), i.e.: it does not represent an investment as pure strategy, but a peculiarity of fundamental analysis.

- Corporate Engagement: engagement is a dialogue between investors and companies focused on positively influencing corporate behaviors to drive long-term, sustainable returns.

1.6 MARKET DIMENSIONS

As it has been said several times in the previous paragraphs, the interest in ESG investments has grown a lot and rapidly in recent years. In fact, the Morningstar website[10] reads that from 10 March 2021, the day of the introduction of the SFDR[11] regulation on sustainability reporting in financial services, the number of traditional funds that have taken on an ESG role has exploded. According to data always provided by Morningstar, at the end of December 2021 the assets in the Article 8

[10] https://www.morningstar.it/it/news/218754/sfdr-e-il-fondo-si-vestì-di-sostenibilità.aspx 09/02/2022

[11] Regulation (EU) 2019/2088, called "Sustainable Finance Disclosure Regulation" (SFDR), published in the Official Journal on 9 December 2019 and in force from 10 March 2021. The EU aims to harmonize the provisions for financial market participants and financial consultants, on the transparency of communication of the integration of sustainability risks and the consideration of negative effects for society and the environment, in governance processes and in the communication of information related to sustainability, relating to financial products.

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS EMPTY
Strategy for Financing the Transition to a Sustainable Economy
Strasbourg, 6.7.2021
COM(2021) 390 final
https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0390&from=BG

and 9[12] funds exceeded 4 trillion euros (42.4% of the European market). European ESG funds were 4,461 in Europe (+ 40% compared to the end of 2020), but the number rises to 6,659 if we refer to the SFDR classification, of which most (25.2%) are article 8 and the remaining 3.4% article 9. Still taking into consideration the Morningstar definition, global ESG funds at the end of the year were 5,932, of which 75% in the Old Continent and only 9% in the United States.

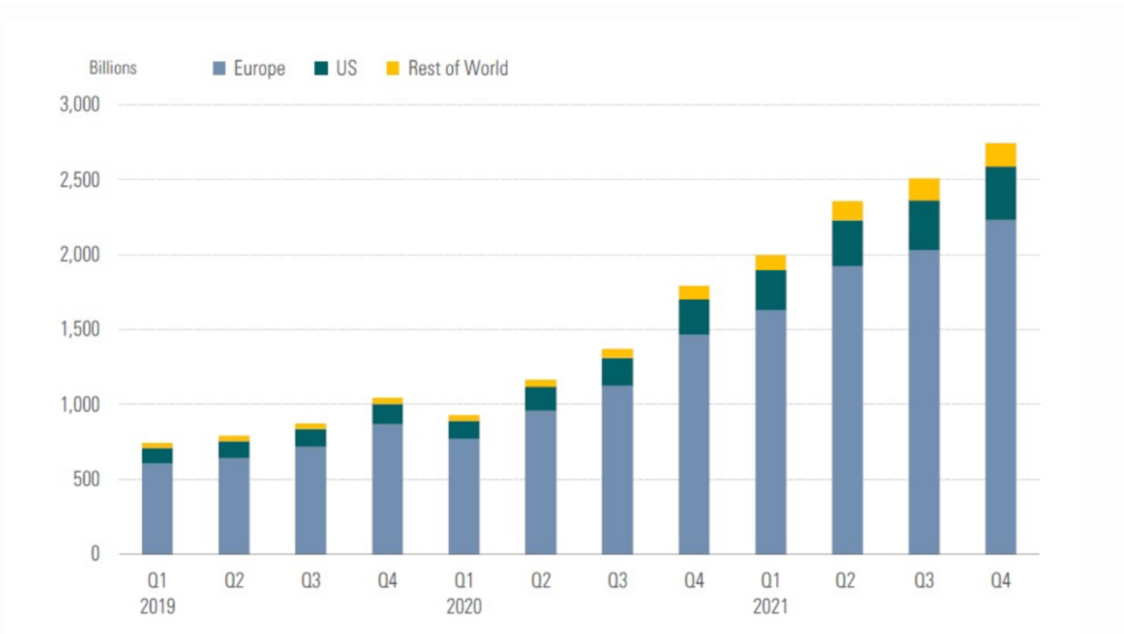

Figure 5 Sustainable fund, assets by regions of the globe (quarterly data in billions of dollars). Morningstar data dec. 2021

[12] In compliant with Article 8 portfolios should promote environmental or social characteristics, or a combination of these characteristics, proving that the companies in which the investments are made comply with good governance practices. In compliant with Article 9 portfolios should have "sustainable investments as an objective".
Pictet Asset Management 2022
https://am.pictet/en/uk/global-articles/2021/pictet-asset-management/sfdr

2 ESG INDICES

2.1 INTRODUCTION TO ESG INDICES

Before going deeply into the actual analysis of ESG products, we need to analyze the sustainability indices on the market.

For these purposes it is useful to recall the Action Plan (mentioned in the first chapter) because the European Commission set up a Technical expert group on sustainable finance (TEG[13]) to implement the ten actions of the Action Plan.

The TEG report[14] aims to increase the comparability between sustainability indices, provide an important tool to investors for their strategies, increase transparency on the impact of new risks on securities, in particular climate risk and the risk due to the transition to new energy sources, and eliminate "greenwashing", the practice of defining sustainable projects or policies without particular motivations for the sole purpose of gaining support and improving reputation. Finally, the report provides general schemes that must be respected to

[13] The TEG (Technical Expert Group on sustainable finance) is a group of thirty-five experts in the field of sustainable finance.
Financial Stability, Financial Services and Capital Markets Union 15/07/2020
https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en

[14] TEG published the: "final report on climate benchmarks and benchmark's ESG disclosure" (discussed in the first chapter)
https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/190930-sustainable-finance-teg-final-report-climate-benchmarks-and-disclosures_en.pdf 09/2019

present the various sustainability indices; each scheme contains the minimum requirements to be declared for each different type of security. In general, the report is a fundamental step towards the standardization of sustainability indices and, consequently for the growth of sustainable finance. Indeed, it is often complicated to make comparisons between different companies due to the numerous and different financial indices present on the market.

2.2 TYPES OF INDEXES

To select the products that make up the sustainability indices, there are three main criteria:

- Indices by exclusion: They exclude all sectors, types of activities or products that are not compatible with the values or ethical principles selected for that index, such as companies that produce weapons or that do not respect human rights. The securities that are present in these indices depend on the definition of the exclusion criteria and the thresholds that trigger them, which vary from index to index.

- Indices by inclusion: The selection by inclusion it requires more in-depth analysis than by exclusion, because all the securities must be analyzed from an ESG point of view. Therefore, the inclusion criterion can produce higher costs for the management company and consequently for the investor. On the other hand, by construction, these indices are more representative of the entire economy with a consequent reduction in the risk - return gap.

- Index for under or overweight: these indices give greater weight than the starting index to companies whose sustainability ratings are higher, while they underweight those with low sustainability. However, given the lack of exclusions, these types of indices are not suitable for management mandates where there are strict restrictions on the exclusion of certain types of assets.

2.3 HOW AN ESG INDEX IS DEVELOPED?

As already understood from the previous paragraphs, the process of calculating an ESG rating is complicated and completely non-unique. First of all, it is necessary to understand what an index is. According to Investopedia’s definition: "A market index measures the value of a portfolio of holdings with specific market characteristics. Each index has its own methodology which is calculated and maintained by the index provider. Index methodologies will typically be weighted by either price or market cap. "[15]. Expressing this concept in simpler words, these indices, better known as benchmarks, aim to represent the trend of the reference market with a summary data.

In practical terms, there are three steps to follow for creating an index:

- The first phase consists in identifying a basket of stocks having some specific characteristics, for example: market capitalization, market sector belonging to a specific market and with some limits in terms of capitalization.
- The second step is to attribute a relative weight in the basket
- Finally, with the relative weights it is possible to calculate the level of the index.

2.1.2 SUSTAINABILITY INDICES, SOME EXAMPLES WITH INTESA SANPAOLO

To make the topic more understandable, we have thought to take real indices into analysis. During the introduction, in particular in paragraph 1.5, we had seen the different strategies used to label a product as

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[15] Market Index
By JULIE YOUNG Updated April 28, 2022
Reviewed by GORDON SCOTT
Fact checked by MELODY KAZEL
https://www.investopedia.com/terms/m/marketindex.asp

sustainable. We now take into consideration the example of Intesa Sanpaolo[16] to present some of sustainability indices; we consider this bank because it is the second largest Italian banking group, and one of the largest in Europe.

The following list contains all the indices in which we can find the stock:

- Dow Jones Sustainability Indices: Intesa Sanpaolo is included in S&P Global's DJSI World and DJSI Europe. These indices contain companies with the largest capitalization in the market and the companies are selected using the best-in-class criterion. Just to give a concrete parameter, DJSI World includes over 300 companies among the 2,500 largest companies in the world included in the S&P Global BMI index. DJSI Europe includes about 150 companies among the 600 largest European companies in the S&P Global BMI index.

  Moving directly to data, Intesa Sanpaolo has scored 83/100, with an average sector score of 38, so deeply over the average.
- FTSE4Good: Intesa Sanpaolo is included in two FTSE4Good indices, a group of stocks indices designed to encourage investments in companies that meet globally recognized standards ethics. The score is made using only public information from over 7,200 companies present in 47 different countries. Intesa is rated 4.1.

[16] All data was collected from the bank's official website, available at the following link: https://group.intesasanpaolo.com/it/sostenibilita/indici-di-sostenibilita 27/05/2022

- MSCI ESG Index[17]: MSCI (Morgan Stanley Capital International) is the largest company in the world that provides ESG indices with more than 1500 indices that have been studied to guarantee a precise guide for esg investments.

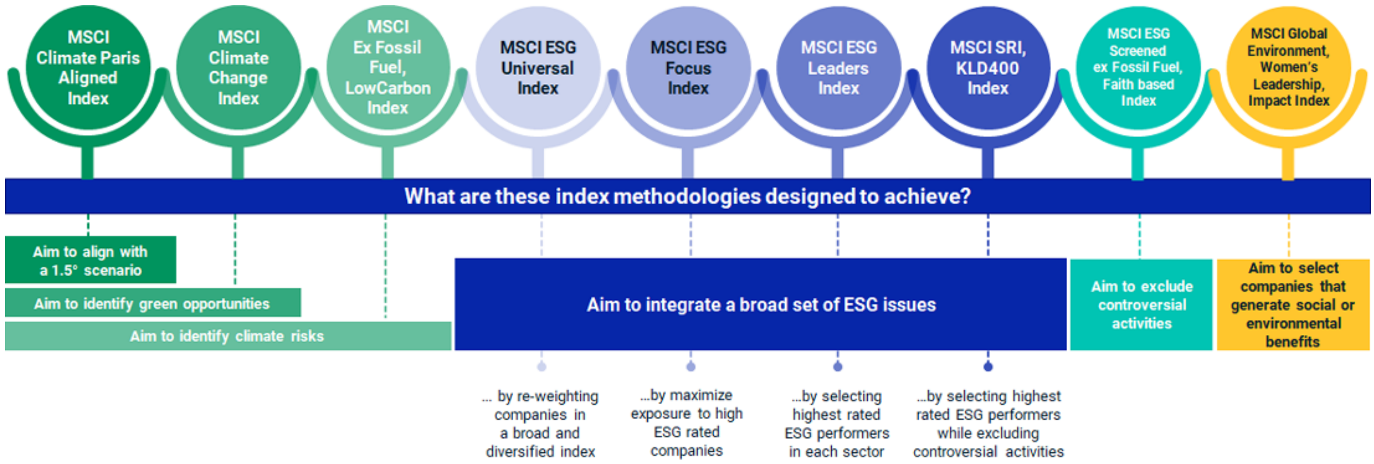

Figure 6 MSCI Indexes

ESG ratings can vary on a seven-level scale that can range from AAA to CCC, depending on how the firm manages social, environmental and governance risks.

MSCI's ESG rating methodology aims to analyze risks and opportunities to precisely identify the positive and negative externalities produced by companies in a given sector. So, it tries to analyze the long-term results by understanding whether they

[17] MSCI Inc. as of March 2020 https://www.msci.com/our-solutions/indexes/esg-indexes

will be positive or negative. The model uses 4 questions as a binary:

i. What are the most relevant risks and opportunities that companies must face in relation to ESG factors?
ii. How exposed is each company to these risks and opportunities?
iii. How are these risks and opportunities managed by each company?
iv. What is the overall image of the organization and how does its collocation itself in relation to its own industry peer?

Going back to our example, Intesa Sanpaolo is included in several families of indicators including MSCI ESG Leaders Indexes, MSCI Climate Change and MSCI Low Carbon Indexes; starting from 2016, the bank has the highest rating of AAA.

- Euronext Vigeo Europe 120 and Euronext Vigeo Eurozone 120: The 120 companies included in both indices are selected by the rating company ESG Vigeo-Eiris on approximately 5,000 issuers.
- Soleactive ESG indices: the bank is included in the Solactive ESG indices, including Global and Europe Corporate Social Responsibility Indices, which use the criteria of the independent association Forum Ethibel and in other ESG indices, such as Solactive ISS ESG Prime Index Series, which refer to ISS ratings.

- STOXX® sustainability indices are a family that includes Low Carbon and Climate Indices. The STOXX® Global ESG selects companies with best-in-class criteria, based on the sustainability rating assigned by Sustainalytics. The index includes about 400 leading companies worldwide.
- MIB ESG Index is the first blue-chip index for Italy dedicated to ESG, it is quite new because it was launched on 18 October 2021 by Borsa Italiana.

  The index includes the issuers that present ESG best practices and combines the measurement of economic performance with ESG assessments in line with the principles of the United Nations Global Compact. The analysis of ESG criteria is carried out by Vigeo Eiris, a company that has been part of Moody's ESG Solutions since 2019 and it is specialized in evaluates the ESG performance of issuers.

  The methodology of the index is to rank the best 40 companies based on ESG criteria, selected from among the 60 most liquid Italian companies, excluding those involved in activities that are not compatible with ESG investments. The components of the index are weighted based on the free float market capitalization.
- Standard Ethics: "Standard Ethics is a self-regulated sustainability rating company that provides a comparable and standardized solicited rating system suited to a modern rating agency in terms

of methodology, long-term evaluations, and fairness: the Standard Ethics Rating (SER)."[18] Intesa Sanpaolo is rated EE on a scale from EEE to F.

- ECPI indices is a family including more than 50 indices that analyze (and valuate risks) public information from over 4000. Intesa Sanpaolo is included, among others, in the ECPI World ESG Equity and in the ECPI Euro ESG Equity.
- CDP: is a non-profit organization that provides rules for measuring information relating to environmental impact. Furthermore, CDP annually evaluates the actions taken to stop the climate change. The companies rating is is based on 4 levels (communication, awareness, management, leadership) representing the phases that a company goes through. These phases represent the steps that a company has to follow for reaching the environmental protection. The assessment scale is from A to D-; and Intesa in 2021 Intesa was included in the leadership band with the score A-.
- Bloomber Gender Equality: as it is easy to guess from the name, this index focuses on gender equality. In particular, it considers five survey areas: female leadership and the enhancement of talent, equal pay, inclusive culture, policies for the prevention and

[18] Standard Ethics is a self-regulated sustainability rating company that provides a comparable and standardized solicited rating system suited to a modern rating agency in terms of methodology, long-term evaluations and fairness: the Standard Ethics Rating (SER).

https://www.standardethics.eu 2022

contrast of sexual harassment and recognition as a brand that promotes equality of genre.

- Corporate Knights: this index includes the 100 most sustainable companies in the world. The selection is made amid more than 7,000 listed companies in the world, evaluated using 23 indicators that analyze the ESG themes as environmental sustainability, attention to human resources, equality of gender, to revenues from green products and services.

3 ESG PPRODUCTS

3.1 BLENDED FINANCE AND SUSTAINABLE BONDS

The first step in the analysis of ESG strategies is to distinguish the two macro categories: Blended Finance and Sustainable Bonds.

Both of them have been growing a lot, and they are characterized by the peculiarity of promoting a responsible approach in order to combine sustainability and financial return, laying the foundations for the study and implementation of a more ethical and sustainable development system.

3.1.1 BLENDED FINANCE

According to the definition issued by the OECD[19], the blended finance is: "the strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries."[20]

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[19] The Organization for Economic Co-operation and Development is an intergovernmental organization with 38 member countries, founded in 1961 to stimulate economic progress and world trade. It is a forum. The members are countries describing themselves as committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices and coordinate domestic and international policies of its members.

https://en.wikipedia.org/wiki/OECD 26/07/2022

[20] https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/ 27/07/2022

The name Blended Finance implies the co-investment of public and private funds through a common investment plan, in which each party uses its experience in a complementary way. The World Economic Forum's Redesigning Development Finance Initiative was important for developing the concept and the model.

Blended Finance was designed to support progress towards the Sustainable Development Goals (SDGs) set by the United Nations, offering the potential to increase sustainable finance for developing countries. To achieve these SDGs will be necessary to invest an additional amount of 2,500 billion dollars a year and an additional investment of 13,500 billion USD to implement the COP21 Paris climate agreement. The concept of blended finance was recognized for the first time in the outcome document of the Third International Conference on Development Financing held in July 2015 as a possible solution to fill this funding gap.

This type of financing is typically highly risky, and the rates of return are lower than market rates. The objective of these investments is to absorb a sufficient amount of the overall risk associated with the project to attract a greater number of private investors, typically seeking market returns with proportionate risk management, covering their losses through incentives, guarantees, subsidies or insurance.

3.1.2 SUSTAINABLE BONDS

The sustainable bonds are financial instruments, that have experienced an extraordinary growth rate since their emission. They are bonds like all the others, but they are issued to finance or refinance, in part or in whole, exclusively projects that have a concrete positive environmental and /or social impact, such as the production of energy from clean sources, the sustainable use of land and / or water, energy efficiency projects, waste treatment, affordable construction, education, vocational training and microfinance, or activities that contribute to local economic development such as preserving and creating jobs for categories of people in difficulty or with disabilities, etc... In general, sustainable bonds can be classified in: green bonds, climate bonds, environmental bonds, social bonds, sustainability bonds and ESG bonds.

3.2 GEEN BONDS

Green bonds are the most diffused category of sustainable bonds and for this reason we are going to deeply analyze them from their origins to present days.

A green bond is a financial instrument that made its first appearance in 2007 when the European Investment Bank issued its inaugural Climate

Awareness Bond (CAB)[21]. As can be easily understood from their name, these bonds focus on the previously mentioned environmental issues emphasizing everything that safeguards the planet. Reporting a more technical definition from the Journal of Business Research: "Green bonds can be defined as an innovative fixed-income product that offers investors the opportunity to help mitigate climate change and support countries' environmental strategies. Green bonds are not significantly different from conventional bonds except that the proceeds from bond sales must be invested in projects susceptible to generating environmental benefits." [22]

There are four aspects that distinguish a green bond from a traditional one[23]:

- The issuer of a security must clearly identify the destination of the proceeds.
- It must follow some procedures in the evaluation and selection of projects, which must fall into a list of categories.

[21] European Investment Bank
https://www.eib.org/en/investor-relations/cab/index.htm 2022

[22] Green bond market and Sentiment: Is there a switching Behaviour?
JuanPiñeiro Chousaa, M. Ángeles López Cabarcosb, Aleksandar Ševićc
Journal of Business Research
Volume 141, March 2022, Pages 520-527
https://www.sciencedirect.com/science/article/pii/S0148296321008559

[23] Borsa Italiana
https://www.borsaitaliana.it/notizie/sotto-la-lente/green-bond-definizione.htm 27/07/2022

- Who issues the bond must ensure maximum transparency in communicating the management of the proceeds.
- Reports must be made available to keep investors updated on the progress of the financed projects.

These rules of international validity were imposed by the ICMA[24] (International Capital Market Association) that has published the "Green Bond Principle". Moreover, the TEG has developed these points even more precisely by providing standards in the document “EU Green Bond Standard”.

Regarding market growth, we have some interested data from Climate Bonds Initiative (CBI)[25]: green bonds worth in 2018 was 167.6 billion dollars and the total sum of emissions from 2007 to the end of 2018 reached the record of 521 billion. Although the small dimension, European market scores the best result at the regional level with a cumulative value of 190 billion dollars from 2007 to 2018.[26]

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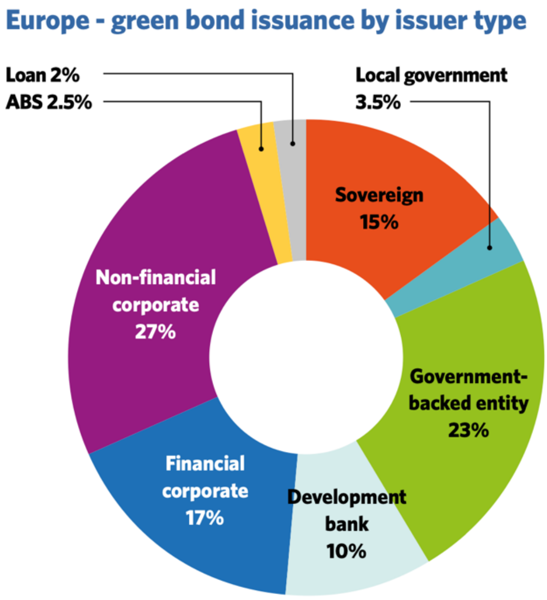
[24] The International Capital Market Association or ICMA is a self-regulatory organization and trade association for participants in the capital markets. ICMA stated aims are to promote high standards of market practice, appropriate regulation, trade support, education and communication. It produces standard documentation for transactions such as equity and debt issuance and repos.

https://en.wikipedia.org/wiki/International_Capital_Market_Association 22/04/2022
https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/ 2022

[25] Climate Bonds Initiative is an international organization working to mobilize global capital for climate action https://www.climatebonds.net

[26] Financial Centers for Sustainability Europe
https://www.climatebonds.net/files/reports/cbi-financial_centres_03d.pdf 26/07/2022



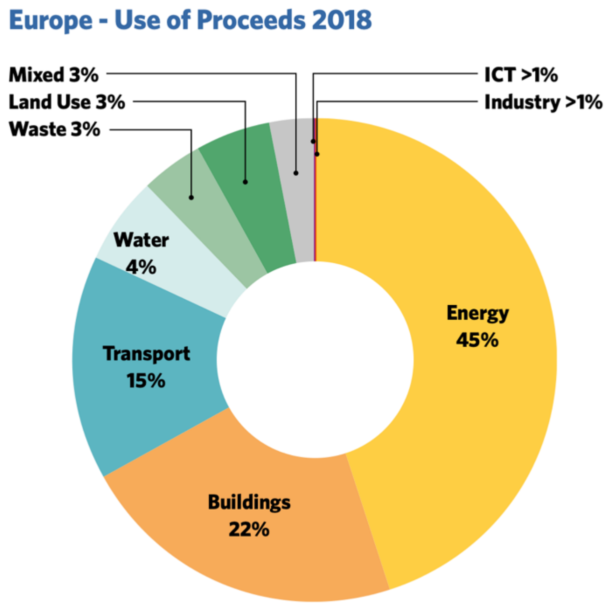


Figure 7 Green bond issuance by issuer type and Use of Proceeds 2018

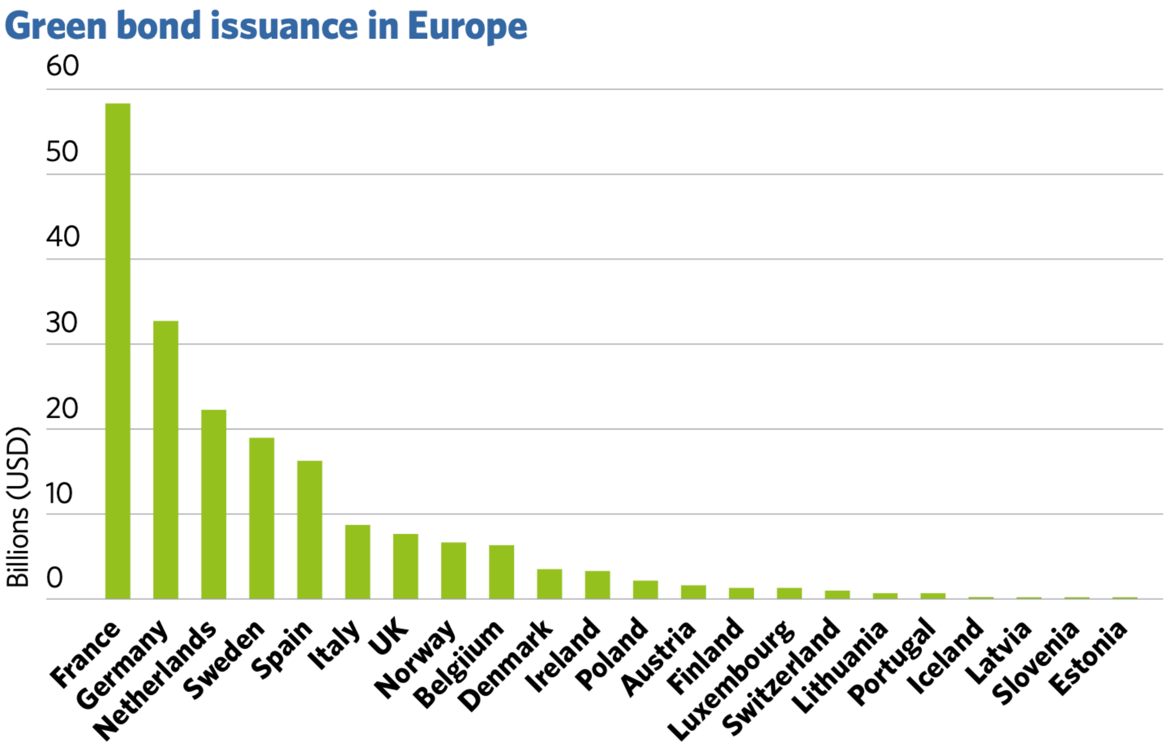


Figure 8 Green bond issuance in Europe

Even if these numbers seem huge and impressive, from the previously mentioned article[22], we see that: "Although the volume of green bond issues has practically doubled each year after 2016, and the portion of corporate green bonds is constantly growing, the green bond market remains smaller than the conventional bond market." This means that green bonds' market is growing fast but it is not a total twisting.

In order to "justify" this "low market share" we have reported other article entitled "Corporate green bonds" presented in the Journal of Financial Economics that writes: "Intuitively, it might seem puzzling that companies choose to issue green bonds in lieu of conventional bonds, as the proceeds from green bonds are committed to green projects, which restricts companies' investment policies. Moreover, to qualify as a "certified" green bond, companies have to undergo third-party verification to establish that the proceeds are funding projects that generate environmental benefits, which gives rise to administrative and compliance costs. Given the constraining nature of green bonds, a seemingly superior strategy would be to issue conventional bonds and then invest the proceeds in green projects if they are deemed to be financially more viable than other projects." [27]

[27] Corporate green bonds
Caroline Flammer
Journal of Financial Economics
Volume 142, Issue 2, November 2021, Pages 499-516
https://www.sciencedirect.com/science/article/abs/pii/S0304405X21000337

Anyway, the author in the subsequent paragraphs writes three reasons for issuing corporate green bonds:

1. To obtain cheaper financing costs, in other words cheaper cost of debt.
2. To build a positive self-image and improve visibility to attract investors
3. To demonstrate that the firm is active in sustainable development and is also projected into the future in a long term prospective.

These reasons will be recall and better explained in the next paragraph, analyzing the shareholders' point of view.

3.2.1 SHAREHOLDERS BENEFITS FROM GREEN BONDS

Another interesting aspect to be analyzed on green bonds is the shareholders' point of view. For this analysis we are going to report some extracts from an article (written in 2020 in the Journal of Corporate Finance) entitled: "Do shareholders benefit from green bonds?"[28]. This article is principally based on CBI and Bloomberg data, and it says: "We find

[28] Do shareholders benefit from green bonds?
Dragon Yongjun, TangYupuZhang
Journal of Corporate Finance
Volume 61, April 2020, 101427
https://www.sciencedirect.com/science/article/abs/pii/S0929119918301664

from this dataset that the stock prices of issuers react positively to green bond issuance announcements. Specifically, there is a 1.4% cumulative abnormal return for the [−10, +10], 21-day event window around green bond issuance announcements. Moreover, the announcement returns are larger for first-time issuers than for repeat issuers. This announcement effect is both statistically significant and economically meaningful. Our results are consistent with prior literature on the relationship between corporate environmental performance and firm value, especially research examining the information content of corporate news on environmental issues using event studies.[5] Thus, issuing green bonds can improve firm value in the short run."

In simpler words, this article confirms one more time the original idea that investing in green economy gives higher firm' s value.

To demonstrate this affirmation, we recall and explain a bit better the three reasons for issuing green bonds expressed in the previous paragraph. In order to clearly explain the data, some extract from the same article: "Do shareholders benefit from green bonds?" are reported:

1. Financing cost: "We examine green bond yield, institutional ownership, and stock market liquidity to understand the channels and mechanisms underlying positive announcement effects. In a broad sample, we find a green premium, that is, green bonds are

issued at a yield spread that is 6.94 basis points lower than corporate bonds issued by similar firms. However, if we compare yield spread within the same issuing firm in the same year, we do not find any significant pricing difference. Overall, we do not have strong evidence supporting the "financing cost" channel. In other words, the positive stock market reaction is beyond the direct benefits of the lower cost of debt, if any, to the issuers." [29]

2. Investor attention: "When investigating the institutional ownership after green bond issuance compared with firms that issue conventional corporate bonds, we find a 7.9% increase in the institutional ownership (mostly driven by investment advisers and pension funds) of the green bond issuers. Interestingly, we find that hedge funds reduce their holdings in those firms after green bond issuance. Furthermore, the increase in institutional ownership comes mainly from domestic institutions. Such evidence is supportive of the "investor attention" channel of green bond effects." "We find that stock turnover increases significantly in relation to green bond issuance. Google search volume also spikes around event days. Such evidence suggests that the market does indeed pay attention to a

[29] Do shareholders benefit from green bonds?
Dragon Yongjun, TangYupuZhang
Journal of Corporate Finance
Volume 61, April 2020, 101427
https://www.sciencedirect.com/science/article/abs/pii/S0929119918301664

firm's green bond development. Moreover, we find a significant improvement in stock liquidity in terms of bid-ask spreads and the Amihud measure after green bond issuance compared with matching firms issuing conventional corporate bonds. This result suggests that more media attention attract more investors and generate more trades in the stock market. It supports "investor attention" channel rather than the "firm fundamental" channel because if investors believe the long-term high valuation of the green bond issuers, they will hold the stock rather than realize the gain such that stock liquidity will decline."

3. Firm fundamental: "green bonds demonstrate the firm's dedication to sustainable development, and investing in such projects can be valuable to firms in the long run, including by helping them survive adverse situations."[30]

[30] Do shareholders benefit from green bonds?
Dragon Yongjun, TangYupuZhang
Journal of Corporate Finance
Volume 61, April 2020, 101427
https://www.sciencedirect.com/science/article/abs/pii/S0929119918301664

3.2.2 GREEN BONDS EXAMPLE WITH INTESA SANPAOLO

As we did for sustainability indexes, we report the case of Intesa Sanpaolo because it was the first Italian bank to issue a green bond. Indeed, in June 2017 it sold € 500 million green bond, collecting orders for € 2 billion euros. The suitability of the obligation to the Green Bond Principles, published by the International Capital Market Association (ICMA, seen in the previous paragraphs), was verified by an external ESG research and analysis company. In addition, the bond obtained the highest score (GB1 Excellent) in Moody's Green Assessment. The purpose of these emissions was to raise money to finance or refinance projects dedicated to renewable energy and energy efficiency. In particular, the green bond financed 75 projects in less than 2 years between June 28 2017 and May 31 2019. The 61.3% of the amount were refinancing (approximately € 307 million), while 38.7% were new loans (approximately € 193 million); 64% was destinated to photovoltaics, 12.6% to wind power, 9.3% to hydroelectric, 12.5% to bioenergy and 1.6% to % to energy efficiency.

In terms of environmental impacts, these projects generated an annual production of energy from renewable sources of 978,265 MWh and allowed energy savings of 27,697 MWh and lower CO_2 emissions of 353,911 tons. [31]

All these data could be found in the Green Bond Register that contains all the specifications of the funded projects, including the category, amount,

[31] L'Unione Europea e la finanza sostenibile Impatti e prospettive per il mercato italiano https://finanzasostenibile.it/wp-content/uploads/2019/11/Manuale-Europa-IT-Web.pdf 10/2019

description of the project and the expected environmental benefits; and in the Green Bond Report that contains projects' update and illustrates the environmental benefits. The latter is certified by a third party and published on the institutional website.

Finally, regarding the emission costs, the bond was in line with a normal Intesa Sanpaolo Senior public issue of the same duration, but it has performed better on the secondary market than other securities with the same maturity.

3.2.3 GREEN WASHING

The word greenwashing is composed of green (ecological) and whitewash (to cover up, hide something), it can be considered as "facade ecology" and nowadays is the main issue related to green bonds.

To trace the origin of this term, we must go back to 1986 when the US environmentalist Jay Westerveld[32] "condemned" the hotel chains that

[32] Jay Westerveld: is a researcher of habitats associated with endangered species including the Clam shrimp, Bog turtle, and the Northern Cricket frog. Westerveld coined the term "greenwashing" and has mounted ecological preservation efforts in the state of New York.
https://en.wikipedia.org/wiki/Jay_Westerveld 16/06/2022

used environmental impact to invite users to reduce the consumption of towels, when in reality this invitation moved mainly for economic reasons. Nowadays greenwashing is one of the most current and easily associated problems with green bonds. This is a deceptive practice, used as a marketing strategy by some companies to demonstrate a false commitment to the environment with the aim of capturing the attention of consumers who are attentive to sustainability, consumers that today represent an interesting market share. It is carried out through campaigns and advertisements or in some cases even social responsibility initiatives.

Observing how greenwashing is implemented, it could be confused as a "new marketing strategy"; it is therefore the deception to mark the boundary between green marketing and greenwashing. In the first case, companies are able to demonstrate the effective low environmental impact of the product life cycle in all its aspects: from raw materials to the production chain, to packaging, to waste management, etc. companies that adopt green marketing promote truthful and transparent communication strategies, which reflect through real data the effective impact that products have on the environment.

On the contrary, in the second case, it is intended to deceive the consumer by using advertising and corporate communication with references to ecology and sustainability to hide the real negative environmental impact of the proposed product. Companies that adopt this strategy use non-transparent advertising campaigns, aimed solely at building an environmental image of the company that does not correspond to reality; their only goal remains to deceive the consumer's perception.

To better understand how greenwashing works, we need to analyze in detail what techniques are used by companies to deceive consumers. These techniques have been investigated by the American company TerraChoice Environmental Marketing Inc[33].

- Sin of the hidden trade-off: it is a communication strategy that envisages that a green product is considered by basing communication only on a single characteristic and ignoring the aspects of impact from an environmental point of view. It is not a question of spreading a false message, but they try to make products that are not actually ecological. The results showed that this is the most used practice (in the USA in 73% of the cases analyzed, in England up to 98%).
- Sin of no proof: it consists in declaring characteristics that are not accompanied by sufficient information or by certificates issued by third parties.

[33] The “Six Sins of GreenwashingTM”
A Study of Environmental Claims in North American Consumer Markets
A ‘Green Paper’ by TerraChoice Environmental Marketing Inc. (November 2007)
https://sustainability.usask.ca/documents/Six_Sins_of_Greenwashing_nov2007.pdf

- Sin of vagueness: it consists in the use of inaccurate, unclear statements, which can easily guarantee misunderstandings and misunderstandings with the consumer.
- Sin of worshipping false labels: when the words or images of a certain product give the impression that there is a third-party certificate, while in reality it does not exist
- Sin of irrelevance: green features are emphasized which in reality are useless and not relevant for the purpose of an informed choice
- Sin of lesser of two evils: it is not a question of providing false information but rather boasting a product feature that does not solve the environmental impact (for example organic tobacco)
- Sin of fibbing: this is the use of a false statement; the most common example is when a product is labeled "energy star" but is not actually certified.

Let's now move on to the analysis of the laws against greenwashing of the various world states. As can be easily understood from the few documents available on the subject, the states have never implemented real protections for consumers, leaving a lot of space for companies to deceive the latter. To give a quantitative idea, a Google survey[34] on 1,491 executives in different industries around the world, has highlighted that CEOs and other executives recognize sustainability as a priority. But 58% of

[34] 68% of US leaders admit to "greenwashing"
April 25, 2022 • Broc Romanek
https://www.esgprofessionalsnetwork.com/68-of-us-leaders-admit-to-greenwashing/

them confessed that they have practiced greenwashing in their company. Furthermore, this percentage in USA rise to 68% in particular among leaders. These high percentages confirm that legislation is weak and useless, in particular in the past greenwashing punishment was assigned to Antitrust that considered this behavior as “misleading advertising”.

Focusing now in Euro zone, only on March 30th 2022 there was a clear stance against greenwashing. On this date, the European Commission proposes regulations banning greenwashing and deceptive practices, to protect consumers. More in detail the European Commission banned[35]:

- Make generic or vague environmental statements where the excellence of the environmental performance of the product or of the professional is not demonstrable.
- Make an environmental declaration concerning the product, when in reality it concerns only a certain aspect.
- Display a voluntary sustainability label that is not based on a third-party verification system or established by public authorities.

However, the New York magazine Fortune comments on this European step with an article entitled: "The EU wants to be a global leader in the fight against greenwashing, but it has a long way to go"[36].

[35] European Commision
Brussels, 30.3.2022 COM(2022) 143 final
2022/0092 (COD)
https://ec.europa.eu/info/sites/default/files/1_1_186774_prop_em_co_en.pdf

[36] The EU wants to be a global leader in the fight against greenwashing, but it has a long way to go

Already from this title we can therefore understand how in reality the law is still far from being able to guarantee consumer protection.

According to the above reconstructions, we are facing a vast and complicated problem that apparently does not leave hope for finding a solution. On the contrary, we have Lyxor Asset Management[37] that considers green bonds as a concrete solution against greenwashing. In particular, we consider Lyxor ETF where a green bond must be approved by Climate Bonds Initiative (CBI) to be included in the ETF. In the last report[38], CBI focused on 'post issuance reporting' where they have investigated if the issuer had respected their sustainability targets. Precisely, the report aims at two aspects of post issuance reporting: 'use of proceeds', meaning how the bond's proceeds were used, and 'impact', meaning the concrete effects achieved. The conclusions are basically three:

- Post-issuance reporting is widespread in green bonds: use-of-proceeds reporting were provided by 77% of issuers, that corresponds to 88% of the amount issued by market value.

MARIANNA CERINI
March 21, 2022
https://fortune.com/2022/03/21/the-eu-wants-to-be-a-global-leader-in-the-fight-against-greenwashing-but-it-has-a-long-way-to-go/

[37] Lyxor Asset Management
https://it.wikipedia.org/wiki/Lyxor_Asset_Management 26/01/2022

[38] Almeida, M., Lonikar, P.
Post-Issuance Reporting in the Green Bond Market 2021, Climate Bonds Initiative, May 2021.
https://esginvesting.lyxoretf.com/it/it/instit/pdfDocuments/cbipostissuance202102bpdfc3f52f03825c70ce70cdbdab4d686bdd.pdf

- Greenwashing is very rare: almost every issuer has reported at least the use of proceeds so there is no evidence of greenwashing among the green bond issuers.
- Impact reporting is becoming more common.

In conclusion, according with the report, we can affirm that green bonds are the safest tools to avoid greenwashing.

4.0 ESG FUNDS

First of all, it is important to understand the dimension of these funds; for this reason, are reported some highlights from "ESG Investing in the UCITS Market – A powerful and inexorable trend"[39], published by Efama on March 2021.

The first interested value is related to the number of ESG funds. Indeed, from 2016 it is more than double compared to non-ESG funds; with a significant acceleration from 2017. In particular, in ESG funds equity is increased by 197% and bonds are grown by 181%.

This growth is reflected in assets managed and in ESG fund raising: "ESG funds saw their assets increasing by 37.1% in 2020 to reach EUR 1.2 trillion at end-December. Net sales of ESG funds grew from EUR 19.5 billion in 2016 to EUR 235 billion in 2020.".

Going into the details of the types of ESG instruments that are most used by investors, nowadays passive funds represent 20% of the total assets, while 80% of the assets are held in active funds (even in non-ESG fund, 17% is passively managed and 83% is actively managed).

[39] ESG investing in the UCITS market: a powerful and inexorable trend
11 March 2021
https://www.efama.org/newsroom/news/esg-investing-ucits-market-powerful-and-inexorable-trend

Considering ETFs accounts, the proportion is once again almost the same, with 8% of the total universe of ESG funds, compared to 9.2% for non-ESG funds.
Moreover, for asset classes, equity funds weight for 56% in ESG funds, while only 39% in non-ESG funds.

Between E, S and G, on which of the three sustainability criteria are investments most targeted?: “Environmental funds dominate the impact fund category, with funds focusing on low carbon emissions being the most dominant category (55%) and renewable energy funds exhibiting the highest growth (604%) since 2016. During the same period, social funds experienced substantial growth in demand (340%), highlighting the growing popularity of social topics in sustainable investing.”

Turning to returns, the report notes that ESG and non-ESG funds’ performances has been similar from 2016 to 2020 when, due to covid pandemic, ESG equity and bond funds reached a higher performance. One more time, this confirms that investing in a more sustainable economy is not done at the expense of lower log-term return.

Finally, the last paragraph is dedicated to costs: “ESG funds, on average, tend to be slightly cheaper than non-ESG funds. This is explained by the fact that many ESG funds have recently been launched, in the context of stiff competition among fund managers, who also have a strong incentive to limit current expenses to attract investors. The report also highlights a downward trend in the cost of ESG and non-ESG funds.”

4.1 HOW AN INVESTOR CHOOSES A FUND

Up to now we have dealt with the issue from the "supplier" side, now let's try to turn the focus on the customer's point of view. To comply with this goal, we will try to answer the implicit question expressed in the title of the paragraph.

The first distinction concerns the type of investor, there are some subjects who choose ESG investment for "ethical" reasons, others for the actual widespread belief that a green investment automatically brings greater profits.

After this distinction, the investor needs to choose the strategy of the investment. As we reported in the introduction, there are several strategies: negative selection/exclusion, positive selection/best in class, regulations, thematic investments, impact/community investments, ESG integration, corporate engagement.

But what are the strategies most used by investors? Currently, negative selection / exclusion strategies are the most common. It is no coincidence that both for private investors and for institutional investors it is the most widespread type of fund in the world. The second type that is most frequently encountered is that of “multi-strategy” funds, which as easily understood from the title, combine within them a series of strategies listed by the GSIA. Finally, the “ESG integration” strategy in particular is experiencing growing interest, also together with “factor investing” approaches, in which ESG factors are identified as determinants of returns.

Once the strategy or set of strategies has been defined, the investor will have to analyze the various funds in depth. Usually we focus on four points:

1) How are ESG factors applied? Does the manager focus on ESG factors exclusively, or are they integrated with a more traditional factor analysis based on momentum, volatility, size, value, and other factors?

2) What is the impact of ESG factors on the fund's historical returns, also adjusted for risk?

3) Who are the fund managers? Do they have adequate skills and experience?

4) What is the fund manager's compensation structure? Is the remuneration structure consistent with the fund's ESG objectives?

4.2 HOW FUNDS ARE CERTIFIED: MSCI EXAMPLE

In previous chapters we have talked extensively about how ESG indices and products are identified. Specifically, we have seen the strategies, standards, and processes to obtain an ESG label.

Even funds are analyzed and certified using the same criteria; so, in this paragraph we do not recall all the topics above, we just introduce the new concept of ESG rating. For this purpose, as example to make the text more understandable we use the MSCI (previously mentioned in chapter 2 with the example of Intesa Sanpaolo) that is world largest rating company.

First of all, we have to present some general information about “rating”, starting from the reasons that may lead to the rating request. There are mainly two reasons:

- to receive a certification of the health status of your company.
- to obtain an opinion on the creditworthiness of the counterparty.

Another difference can be found in answering the question “who looks for the rating?”. The company can request the rating by itself (solicited rating), or the rating can be requested by a third party, and it is defined as unsolicited. The main difference between these two possibilities is the availability of information for evaluation. In fact, in the case of solicited ratings, it is in the client's own interest to provide all the data and information necessary for an in-depth examination, while unsolicited ratings are based exclusively on available public information (financial statements, corporate structure, country risk, etc…).

Going back to MSCI, it is interest to notice that the company has not engaged ESG rating since its early development, but, as many others rating agency, has invested a lot in ESG research acquiring KLD and Innovest in 2010 (that belonged to RiskMetrics Group[40]).

The purpose of MSCI rating is to measure a company’s resilience to long-term, and to analyze the financial ESG risks. The brain behind the MSCI results, is a team made up of 200 research analysts, who evaluate thousands of data that are based on 35 key ESG issues. They try to answer four key questions (to make the reading more linear, we report again the questions):

i. What are the most relevant risks and opportunities that companies must face in relation to ESG factors?
ii. How exposed is each company to these risks and opportunities?

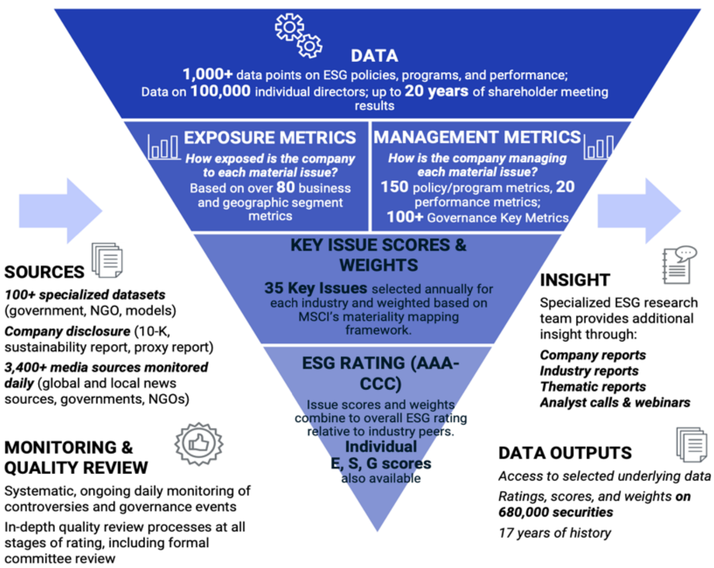
[40] MSCI Inc. to Acquire RiskMetrics Group, Inc.
Mar 01, 2010
https://ir.msci.com/news-releases/news-release-details/msci-inc-acquire-riskmetrics-group-inc

iii. How are these risks and opportunities managed by each company?

iv. What is the overall image of the organization and how does it position itself in relation to its own industry peer?

They basically focus on the intersection between a company's core business and industry issues that can create significant risks and opportunities for the company. Always as we previously see in chapter two, the MSCI[41] evaluates standards and performance of competing companies, and then rates the company on a scale from AAA to CCC.

Exhibit 1: ESG Rating Framework and Process Overview



[41] MSCI ESG Ratings Methodology
Executive Summary
MSCI ESG Research LLC June 2022

https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf 06/2022

Figure 9 ESG Rating Framework and Process Overview

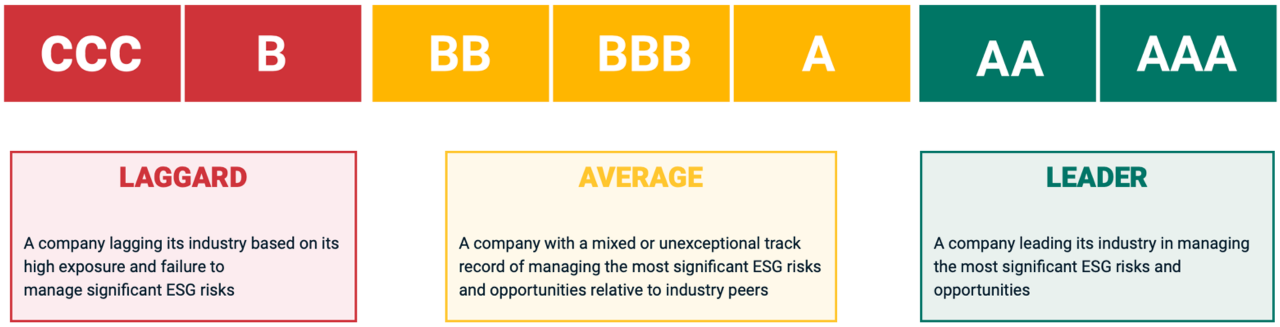


Figure 10 MSCI Rating Scale

Moving now to understand MSCI methodology, we need to focus of the risks and opportunities. For the first topic, we talk about material risk of the industry, so the risk that every company face in a given industry. On the contrary, a material opportunity is when companies in a given industry benefit from it, for example opportunities in clean technology for the renewable energy industry. From these considerations, arises the need to identify different key issues for each company and sector.

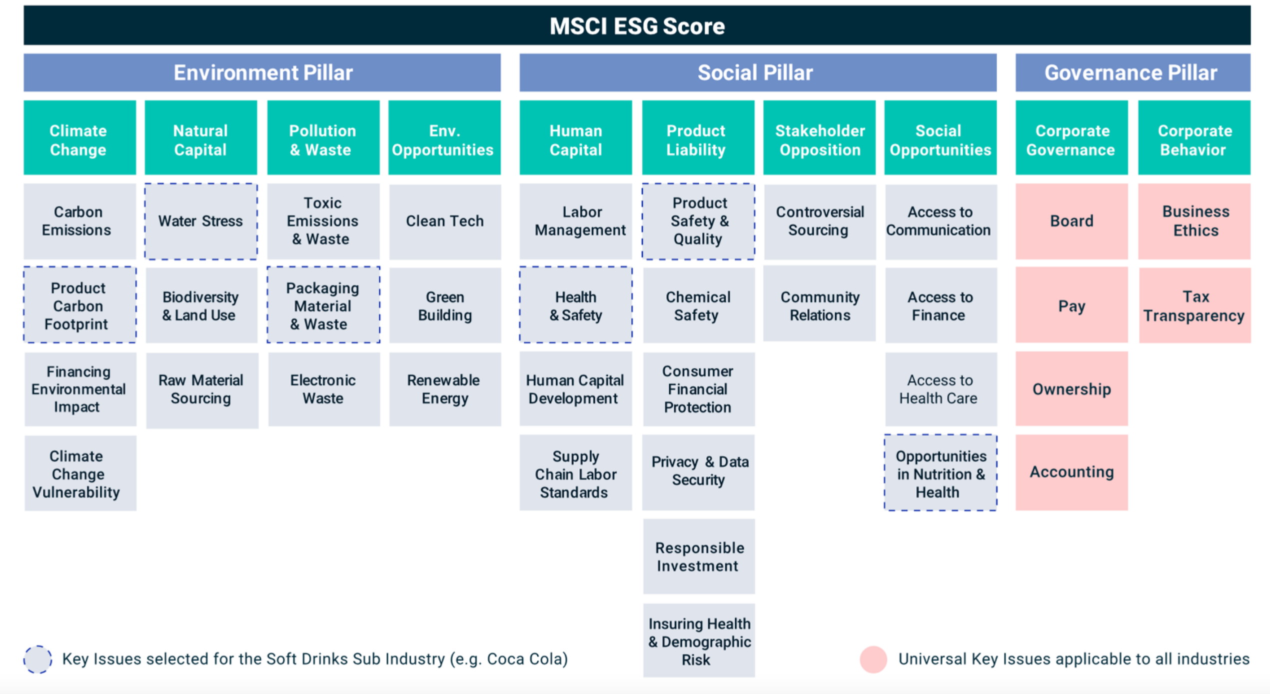


Figure 11 35 key ESG Issues

After Key Issues selection, we set the weights that every single issue gives to the overall rating. In particular, there are two macro categories: Key Issue in the Environmental and Social Pillars; and Governance Pillar. Each Key Issue typically influence by 5% to 30% of the total ESG Rating.

Finally, the last key concept is related to the time when the risks or opportunities will arise.

		Expected Time frame for Risk/Opportunity to Materialize	
		Short-Term (<2 years)	Long-Term (5+ years)
Level of Contribution to Environmental or Social Impact	Industry is **major** contributor to impact	Highest Weight	
	Industry is **minor** contributor to impact		Lowest Weight

Figure 12 Framework for Setting Key Issue Weights

Analyzing more in detail the risks, we have to consider two aspects: risk exposure and risk management. Both of them, take into consideration the core product or business segments, the locations of operations, outsourced production and reliance on government contracts. The risks' exposure is ranked from 0 (no exposure) to 10 (high exposure); even risk management from 0 (no management effort) to 10 (very strong management). There is a correlation between exposure and management: "a company with high exposure must also have very strong management, whereas a company with limited exposure can have a more modest approach. Conversely, a highly exposed company with poor management will score worse than a company with the same management practices but lower exposure to the risk." [42]

[42]MSCI ESG Ratings Methodology
Executive Summary
MSCI ESG Research LLC June 2022
https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf

Regarding opportunities, we always need to consider exposure and management. In particular, exposure indicates the possibility of the firm on its current business and geographic segments. On the other hand, management indicates the company's capacity to take advantage over competitors. Even in this case the scale range is from 0 to 10, with 0 no opportunities and no exploitation skills, and 10 big opportunities and great ability to exploit them.

Last but not least, the MSCI evaluates controversies: "A controversy case is defined as an instance or ongoing situation in which company operations and/or products allegedly have a negative environmental, social, and/or governance impact."[43] Each case of dispute is analyzed and evaluated as: very severe, severe, moderate or minor.

[43] MSCI ESG Ratings Methodology
Executive Summary
MSCI ESG Research LLC June 2022
https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf

5.0 COVID-19 EFFECT ON ESG INVESTMENT

In this chapter we will address a topical issue, with the aim of demonstrating once again how sustainable investment is not sustainable at the expense of returns. Indeed, in the next few lines we will report a analysis to show how the pandemic, which unfortunately negatively affects our lives in every aspect for more than two years now, has strengthened sustainable investments. Indeed, ESG indices outperformed their benchmarks during the COVID-19 crisis.

Finally, in the end, we will analyze how the investment approach is changed regarding sustainable products; precisely we focus on the acceleration in the integration of ESG parameters.

5.1 ESG PERFORMACE DURING COVID CRISIS

This paragraph is centered on analysis of data made on the study entitled: "Mutual Fund Trading and ESG Stock Resilience During the COVID-19 Stock Market Crash"[44]. This research, based on Morningstar Globe ratings,

[44] Mutual Fund Trading and ESG Stock Resilience during the COVID-19 Stock Market Crash
European Corporate Governance Institute – Finance Working Paper No. 782/2021
Rui A. Albuquerque, Yrjo Koskinen, Raffaele Santioni

analyze the February-March 2020 market crash. Specifically, they have tried to understand if the ESG investments have "protect" some sectors from the collapse.

Reading the paper, we clearly notice that the key of "success" for more sustainable products, was the capital flows that arrived in ESG funds. Although traditional funds suffered a terrible "money withdrawal" (around 30%) during the first pandemic wave, ESG funds did not have the same destiny.

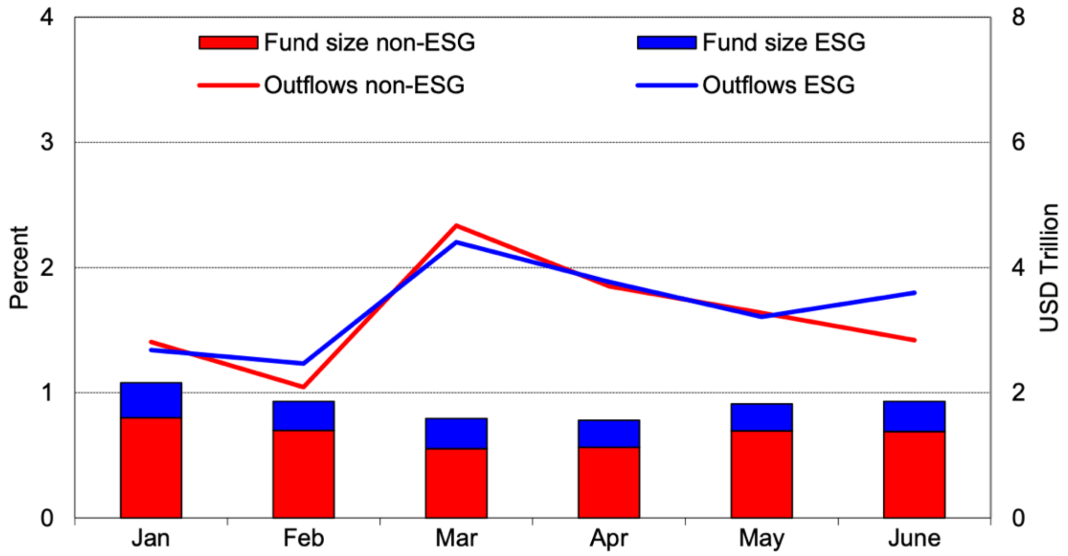


Figure 13 Inflows

February 14, 2022https://deliverypdf.ssrn.com/delivery.php?ID=944003031017122099067011089094098099000056068039003000127075101072070125091006095118102007096001105013006088072126127031091093013019005026020125078007095016110064026088019054017103114006026019118006024073027094120081031096100108005114090109074089110098&EXT=pdf&INDEX=TRUE

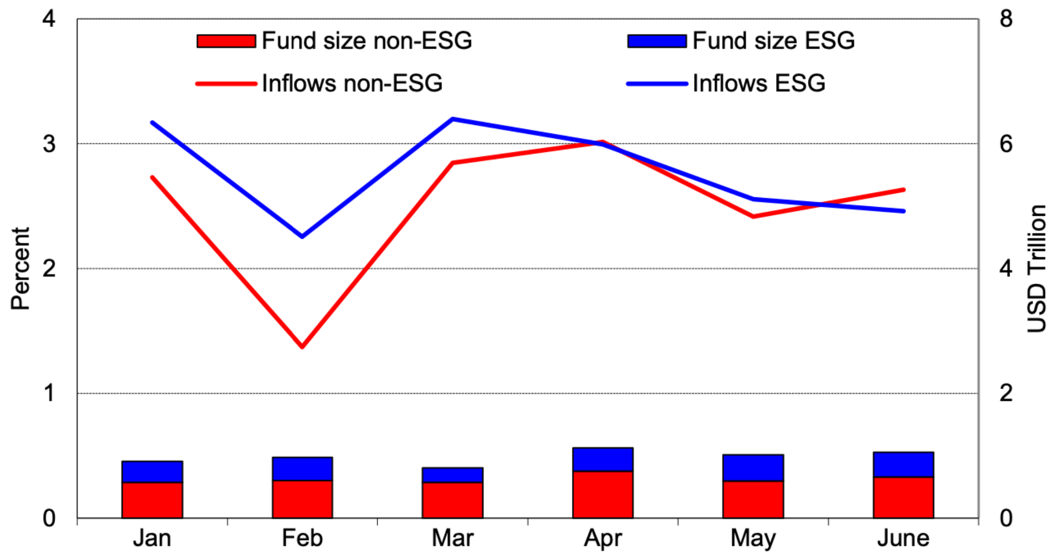


Figure 14 Outflows

The reasons behind this fact are basically two: the first one is related to private investors decision with a consequent adjustment of institutional investors, the second one is only based on institutional investors. In the first case, we read in the study: "Overall, our results are consistent with the joint hypothesis that there is an investor ESG-clientele and that fund managers changed their trading patterns during the crisis in response to that clientele." In other words, we understand that private investors were motivated to keep money in ESG products.

In the second case, moving to institutional investors, the study demonstrates that: "Our main findings are that ESG funds, and to a lesser extent non-ESG funds, contributed to the documented resilience of ES stocks by buying them aggressively, conditional on the same level of inflows. Surprisingly, we find that both ESG and non-ESG funds sold their non-ES stocks more aggressively during the crash, for the same level of outflows, thus also contributing to the relatively better performance of ES stocks during the crash”. To sum up simply this extract, we can conclude that even the funds (both among sustainable and conventional strategies), that faced the need to close some positions in order to liquidate the outgoing underwriters, preferred to sell securities with low environmental and social scores.

From this conclusion, it is easy to understand how ESG funds have had a greater resilience compared to traditional ones during the pandemic.

5.1.1 EURO STOXX 50 Vs EURO STOXX 50 ESG

To give a practical example, we present a graph of comparison between the two most significant European indices.

Using TradingView[45], we have plotted the 2 indices from February 3rd 2020, to June 1st 2022. As it can be easily seen, the “blue line” representing the ESG index has suffered less during the first wave of pandemic. Indeed, from the beginning to March 2nd 2020 (when the minimum was registered), it has lost “only” 14,2%, that compared to the 16,4% lost by the traditional

[45] https://it.tradingview.com 2022

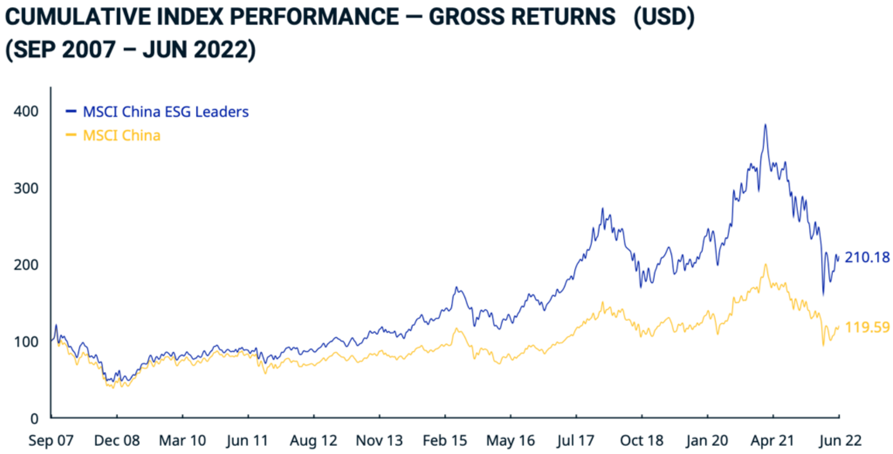
index is 15% better. Moreover, it is evident how the ESG index has performed better during the entire period considered; precisely, in 2 years ESG index has scored 4% better on average. Even today in June 2022, it is over more than 5%.

In conclusion, it is clear how in Europe there is an outperformance of the ESG index both in the short and long term. This demonstration is very important to support our thesis on ESG investments, and it provides an additional incentive for investors to buy sustainable products because independently from the "morality", green investments are more profitable.

Figure 15 Euro Stoxx 50 Vs Euro Stoxx 50 ESG

5.1.2 MSCI CHINA ESG LEADERS Vs MSCI CHINA

After the European case, we now present the data from MSCI[46] about the largest economy in Asia. We focus on China because is the fastest growing leader economy and it is also the biggest pollution producer in the world.



ANNUAL PERFORMANCE (%)

Year	MSCI China ESG Leaders	MSCI China
2021	-22.59	-21.64
2020	34.95	29.67
2019	31.85	23.66
2018	-26.33	-18.75
2017	65.28	54.33
2016	7.65	1.11
2015	3.54	-7.62
2014	13.20	8.26
2013	15.25	3.96
2012	27.07	23.10
2011	-8.77	-18.24
2010	3.79	4.83
2009	47.24	62.63
2008	-45.64	-50.83

Figure 16 MSCI China ESG Leaders Vs MSCI China

Even in this case, watching the chart it can be easily intuitable how ESG index has performed better compared to the traditional one. The graph reports long-period trend, and from the table we can notice that in the last 10 years, ESG indexes had lower performance only in 2018 and 2021, but in the overall is heavily more profitable.

[46] MSCI ESG Research Inc
30/06/2022
https://www.msci.com/documents/10199/78514cc5-a16d-493a-9774-af1012aa0420

5.2 ESG TREND AFTER PANDEMIC

During the entire thesis, we have reported data and fact belonging to past. In this last paragraph, it is necessary to explain how people' s mind has changed due to covid; with the aim to give a possible view of the future in the financial markets. For this purpose, we have extrapolated some data from Schroders research[47].

The first evidence in Schroders report is linked to the different investment trends around the world. Asia, that is the continent where covid is from, has been most affected in mentality change. Nowadays Asia is the most populated continent in the globe, with the fastest economic growth, so it is reasonably certain that it will become the market leader in every sector including the financial one. For this reason, if more people in Asia are investing in ESG products, ESG products will rise world wild.

[47] Schroders 30 September 2021
https://www.schroders.com/en/insights/economics/how-covid-moved-views-on-sustainability/

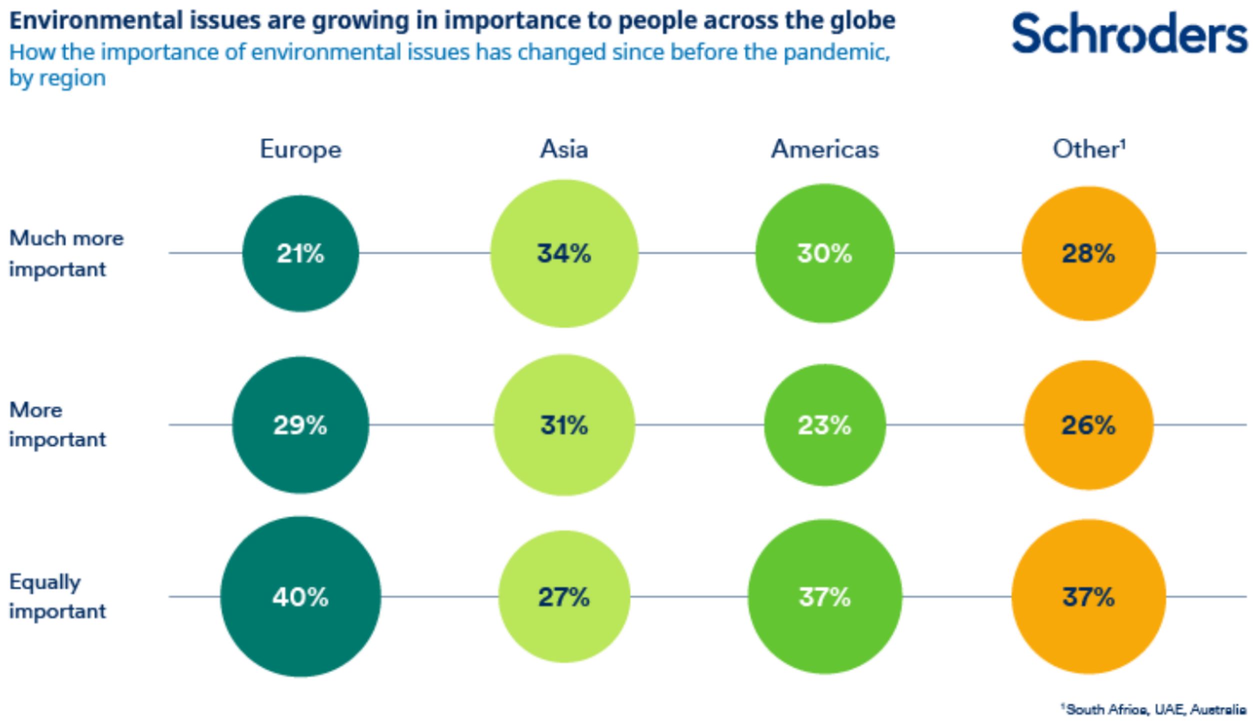


Figure 17 Different investments trend around the world

Another element considered in the report, that in our opinion is crucial to understand how investments are/will evolve in present/future days, is the age of "new sustainable investors". According to the graph, over 50% of people interviewed from 0 to more than 71 years old, consider much more/more important to invest in sustainability. This fact gives a further confirmation of the positive trend and in anyway shows how younger people are more enthusiastic in green investments.

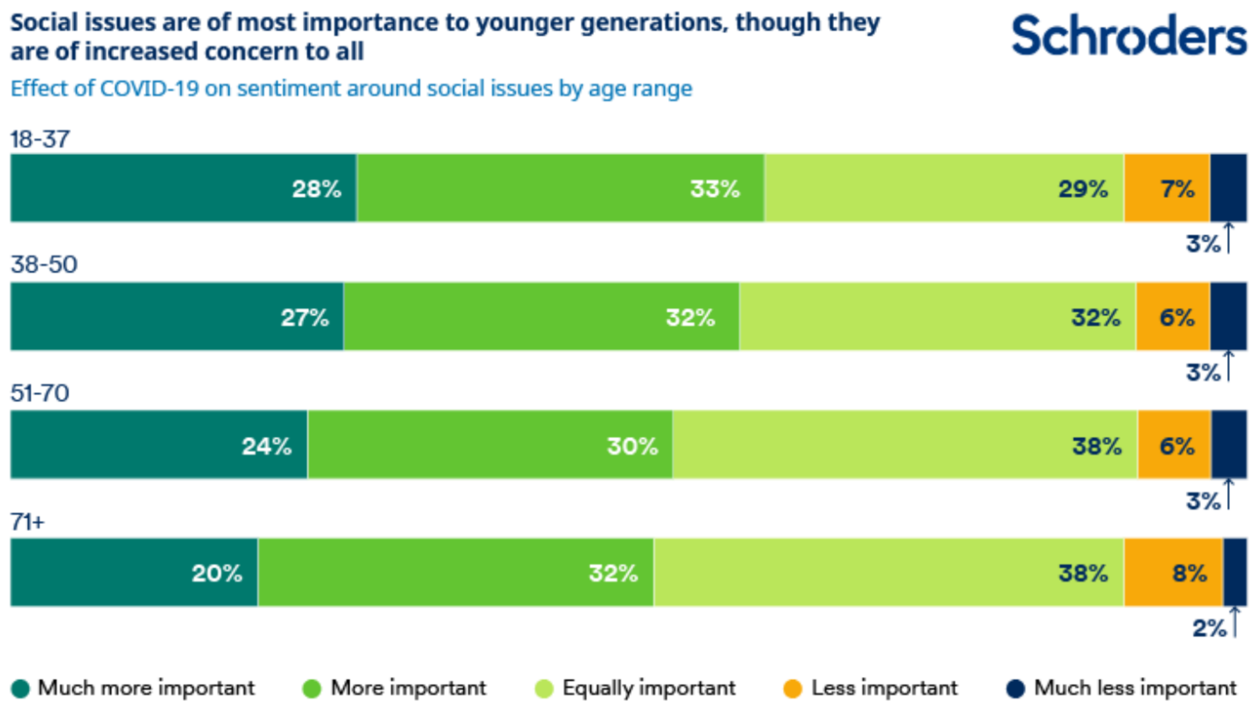


Figure 18 Sustainable investors' age

Finally, to conclude this paragraph with some possible troubles, it is important to report the cases that could lead people to withdraw from the green investments.

It is impressive how the 61% of investors considers more serious a data privacy breach as compared to emissions scandal.

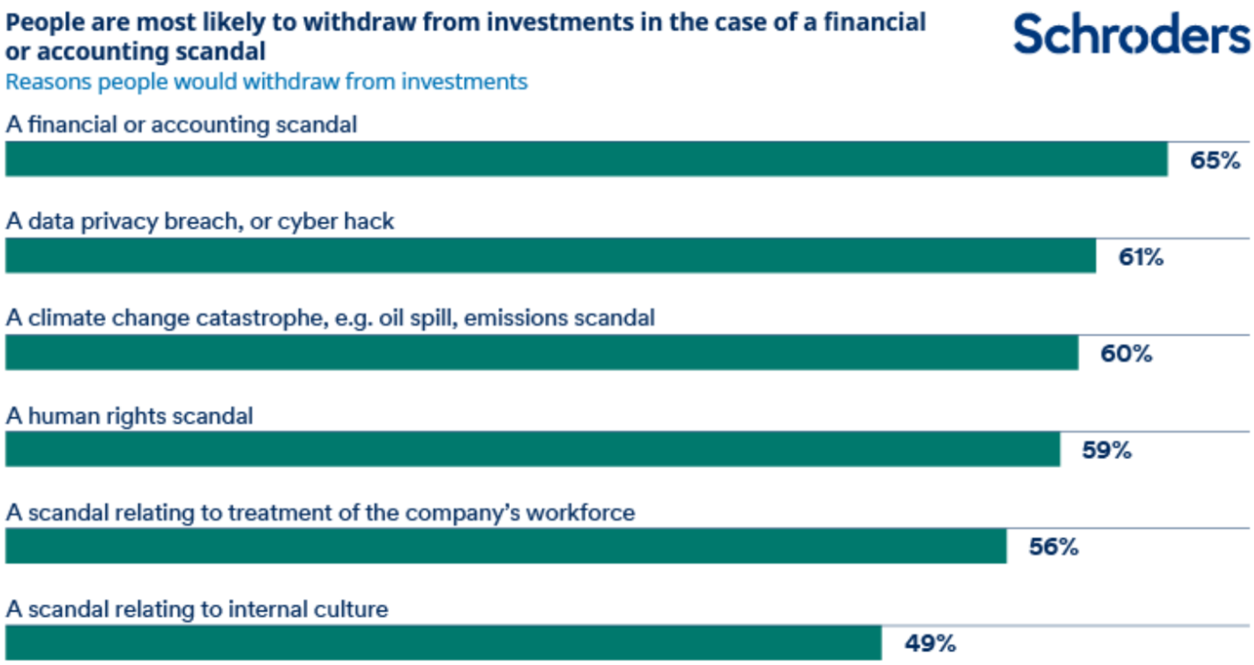


Figure 19 Possible withdraw causes

6.0 ESG RISK ANALYSIS

Before we can definitively affirm that ESGs have performed in most cases better than traditional investments, we need to face the issue of risk.

6.1 Sharpe Ratio

In this chapter, we are going to consider the volatility and the Sharpe index, one of the most used tools to evaluate performance. Indeed, the index allows us to compare investments or portfolio performance, managed with different risks and returns. In other words, it allows us to "price risk". The formula used to calculate it is given by the difference between the return on the investment and the free risk rate; this sum is then divided by the volatility of the investment which is measured by the standard deviation. Higher is the Sharpe ratio, greater is the efficiency of the investment.

Returning to our specific ESG issue, it is very interesting to report the article entitled: "ESG factors and risk-adjusted performance: a new quantitative model"[48]. In this study are considered 966 listed

[48] ESG factors and risk-adjusted performance: a new quantitative model
N. C. Ashwin Kumara, Camille Smitha, Leïla Badisa, Nan Wanga, Paz Ambrosya and Rodrigo Tavaresb
JOURNAL OF SUSTAINABLE FINANCE & INVESTMENT, 2016 VOL. 6, NO. 4, 292–300
http://dx.doi.org/10.1080/20430795.2016.1234909

companies, 157 belonging to Dow Jones Sustainability Index and 809 “traditional” companies; the companies are then classified into 12 different sectors: materials, energy, automobiles, durables, food & beverage, banks, insurance, healthcare, capital goods, transportation, technology, utilities. The aim of this article is to present: “a new quantitative model to show evidence of the link between ESG factors and investment risk-adjusted performance”.
The first characteristic highlighted is linked to the volatility. As we read in the text: "In all 12 industries studied, the group of ESG listed companies show lower stock return volatility in comparison to the reference companies - on average by 28.67% less" … “Equity investments in non-ESG companies in these industries could bear as much as 28% or more risk on an annual basis than investments in ESG companies of the same industry on average.” At the end, this means that a company more in line with ESG principles, has a lower risk compared to the other companies in the sector.

Moving forward in the article we understand that: “the Sharpe ratio for ESG stocks in every industry, with the exceptions of the materials, energy and banking industries, is greater than those of the reference stocks in the respective industries – on average by 7.67%.” … “These higher Sharpe ratios are indicative of similar results that could be achieved by specifically investing in stocks with good ESG performance.” Investors who have invested in sustainable companies have gained more in relation to the risk taken. For this reason, the expression "lower risk lower return" is not still valid, as the lower risk has brought to higher return.

#	Industry	ESG Expected Returns	ESG Volatility	ESG Sharpe	ESG Treynor	Reference Expected Returns	Reference Volatility	Reference Sharpe	Reference Treynor
1	Materials	-12.85%	30.30%	-31.91%	127.84%	-16.53%	76.73%	-20.35%	27.78%
2	Energy	-18.66%	34.77%	-44.38%	-11.11%	-48.58%	85.52%	-72.80%	-63.20%
3	Automobiles	3.05%	27.56%	9.42%	-0.52%	16.66%	47.68%	39.40%	82.28%
4	Durables	4.87%	25.55%	24.97%	8.90%	14.03%	50.09%	23.45%	45.51%
5	Food & Beverage	30.14%	39.50%	27.82%	71.14%	-1.70%	45.60%	22.62%	21.58%
6	Banks	-7.25%	29.80%	-15.96%	-2.92%	0.55%	67.63%	3.48%	24.03%
7	Insurance	3.96%	23.78%	26.34%	-1.81%	12.65%	38.67%	24.11%	-4.98%
8	Healthcare	9.67%	21.12%	57.13%	24.90%	-8.89%	60.03%	1.67%	8.62%
9	Capital goods	4.45%	25.99%	19.94%	5.80%	0.36%	48.53%	-0.34%	-10.84%
10	Transportation	3.48%	26.33%	25.38%	9.07%	0.93%	44.56%	9.24%	1.98%
11	Technology	1.02%	31.66%	4.89%	1.24%	-7.97%	64.35%	-2.13%	-30.75%
12	Utilities	6.15%	26.32%	43.23%	31.37%	-6.88%	57.31%	26.45%	20.21%

Figure 20 Sharpe ratio comparisons

In conclusion, to sum up the output of the model, we can affirm that ESG factors improve the stocks' performances. In particular, reduce the volatility (this means lower risk), with a consequent higher risk-adjusted returns.

6.2 Alpha and Beta

Before concluding this chapter on risk, we need to consider two other very important parameters: alpha and beta. These two elements must be mentioned together as they are extremely connected. Alpha is not a risk indicator, but rather represents an "excess return"; it is a measure of the performance of an investment against a market index or benchmark. The reason why it has been included in the risk chapter is related to its use strictly linked to the beta parameter (better known as systematic market risk).

To face the alpha topic, we present the article "ESTABLISHING ESG AS RISK PREMIA"[49]. This paper examines two portfolios, composed by 30 randomly chosen MSCI's stocks, measured from 2007 to 2017. These portfolios have been built with three separate iterations, the first one is a benchmark portfolio and the second one is an ESG integrated portfolio.

Year End	ESG Portfolio 1 Cumulative Alpha (%)	ESG Portfolio 2 Cumulative Alpha (%)	ESG Portfolio 3 Cumulative Alpha (%)
12/31/2007	3.15	−1.09	3.77
12/31/2008	8.35	6.46	11.54
12/31/2009	6.96	7.96	6.76
12/31/2010	5.89	9.41	4.33
12/31/2011	−1.14	5.41	0.38
12/31/2012	−0.77	5.81	2.82
12/31/2013	1.86	6.30	15.53
12/31/2014	10.58	12.87	16.55
12/31/2015	7.06	12.45	10.63
12/31/2016	3.74	17.14	8.98
Turnover (Quarterly, %)	20	20	20
Net Increase in ESG Rating	3.97	3.97	3.97
Sharpe Ratio	0.95	1.29	1.43

Figure 21 Results of ESG portfolio

[49] ESTABLISHING ESG AS RISK PREMIA
Julia L. Pollard a , Matthew W. Sherwood a and Ryan Grad Klobusb
Journal Of Investment Management, Vol. 16, No. 1, (2018), pp. 1–12
https://www.researchgate.net/profile/Julia-Pollard-2/publication/327548430_Establishing_ESG_as_Risk_Premia/links/5ceda190299bf109da771d06/Establishing-ESG-as-Risk-Premia.pdf

From the results of the analysis reported in figure 21, it is easy to conclude that ESG integration provides alpha. To go straight to the conclusions of this study, we can affirm that the ESG portfolio still outperforms the non ESG benchmark.

Moreover, to integrate this conclusion with the previous paragraph, we notice the Sharpe ratios. The results for each of these portfolios demonstrate that integrating ESG factors provides higher returns and risk mitigation.

Last but not least, as introduced is the previous paragraph we have to present the beta parameter. First of all, we have to remember the two important functions of beta in the CAPM[50] model: measuring systematic risk exposure (lower beta means less systematic risk); convert the equity risk premium to the required rate of return. This means that investors require lower rate of return due to lower systematic risk (lower value of beta). In turn this results in lower cost of capital for a business.

Regarding the importance of beta in ESG, is interesting to quote the article: “Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance”[51] that using the MSCI ESG Ratings

[50] The Capital Asset Pricing Model (CAPM) describes the relationship between systematic risk, or the general perils of investing, and expected return for assets, particularly stocks CAPM evolved as a way to measure this systematic risk.
https://www.investopedia.com/terms/c/capm.asp 2022

[51] Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance

data, aims to understand how ESG characteristics affect corporations' valuations and risk profiles.

Precisely, as we can see in figure 22, companies that comply with ESG factors, have had lower beta on average and therefore a lower cost of capital.

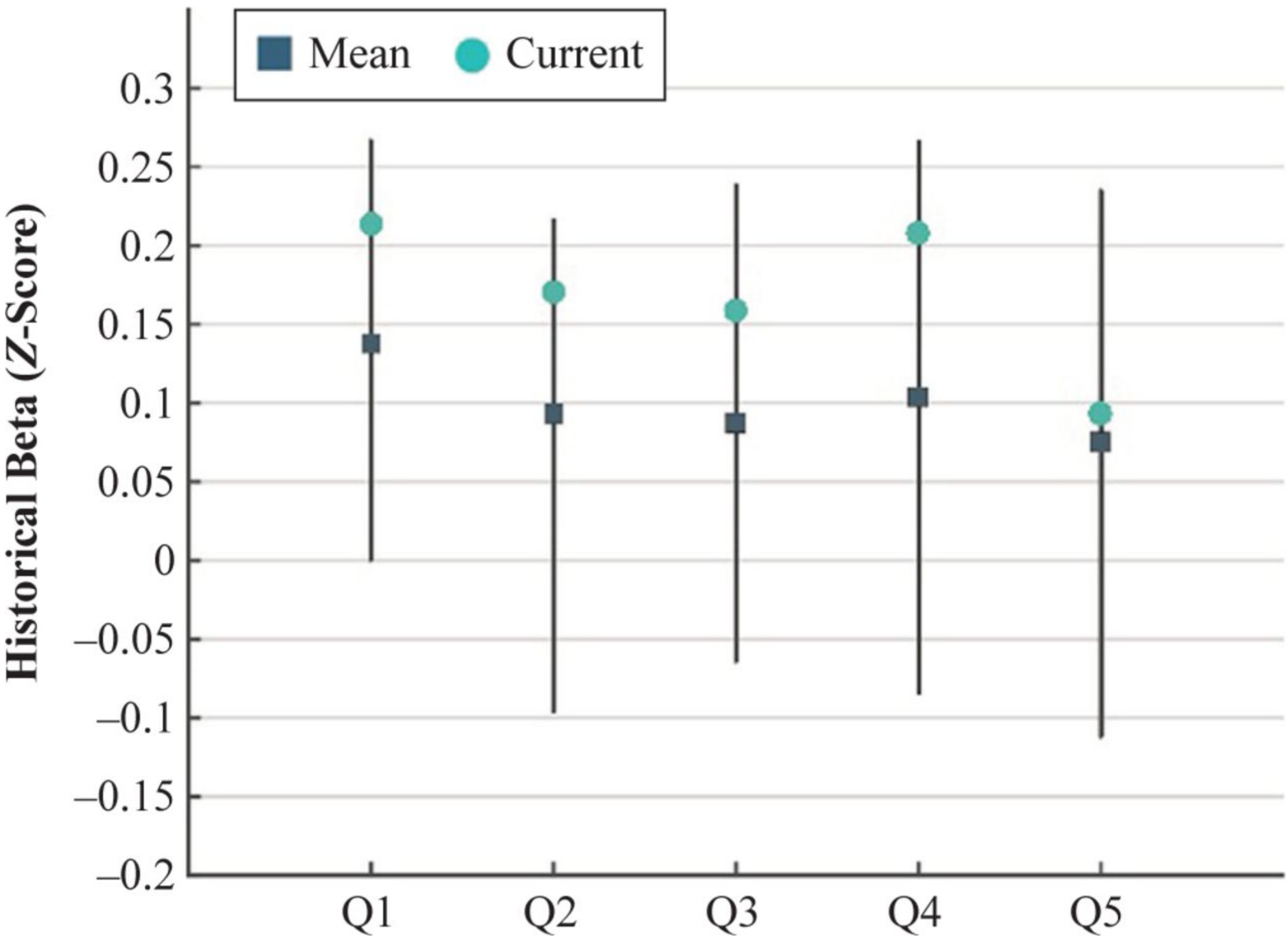


Figure 22 Historical Beta of ESG Quintilies

Guido Giese, Linda-Eling Lee, Dimitris Melas, Zoltán Nagy and Laura Nishikawa
The Journal of Portfolio Management July 2019
https://jpm.pm-research.com/content/iijpormgmt/45/5/69.full.pdf

Furthermore, the figure 23 illustrates how high ESG ratings are associated with higher book to price and earnings to price ratios.

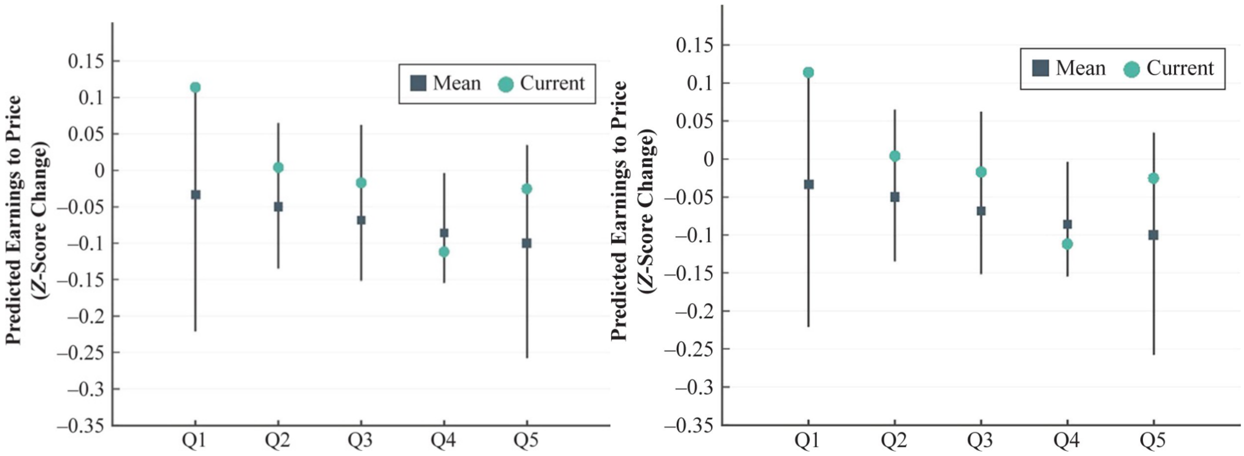


Figure 23 Book-to-Price Ratio of ESG Quintiles and Predicted Earnings-to-Price Ratios of ESG Quintiles

In the end, to briefly conclude our beta's considerations, we have:

a lower cost of capital that is positive for the companies' performance;

higher book to price and earnings to price that correspond to higher companies' evaluation.

7.0 CONCLUSIONS

In recent years we have increasingly come into contact with a new idea of finance; a finance that is not strictly linked to profit, but which also takes environmental, social and governance factors into consideration. After a precise description of the "ESG world", the aim of this thesis is to destroy the idea that green investment is sustainable at the expense of returns and, to demonstrate on the contrary how sustainable investments have been more successful; in particular we have demonstrated how this success has been increased by the recent pandemic.

Every chapter in this paper has shown a fraction of the entire topic; we have first retraced the history that led us to this new way of investing, focusing on the salient moments that made the difference on a global level. Subsequently, we dealt with the topic of ESG indices, bringing to light some concrete examples with the aim of classifying them and explaining how they are developed.

In the third chapter we instead moved to ESG products, focusing in particular on green bonds. Always starting from real examples, we have highlighted the benefits and how these can be a solution to the problem of greenwashing.

Moving on to the fourth chapter, ESG funds were presented. In this part we have tried to explain how the latter are certified and how they are chosen by the investor.

Finally, we tackled one of the most popular themes of the last two years: the pandemic. Precisely, we have shown how sustainable investment has been less affected by the pandemic, which has accelerated the transition to the world of green investments.

Last but not least, under the chapter risk analysis, we have confirmed one more time the idea that green investment brings higher returns. Precisely, we have demonstrated how the integration of ESG factors reduces risk with the same return or improve the return at the same risk.

REFERENCES

[1] International Institute for Sustainable Development (IISD)
https://www.iisd.org/mission-and-goals/sustainable-development

[2] Firms and social responsibility: A review of ESG and CSR research in corporate finance
Stuart L.Gillana Andrew KochbLaura T.Starksc
Journal of Corporate Finance
Volume 66, February 2021, 101889
https://www.sciencedirect.com/science/article/abs/pii/S0929119921000092

[3] The Sustainable Development Goals (SDGs) or Global Goals are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all".
https://en.wikipedia.org/wiki/Sustainable_Development_Goals 21/07/2022

[4] 2022 United Nations Framework Convention on Climate Change
The Conference of Parties, known as COP, is the decision-making body responsible for monitoring and reviewing the implementation of the United Nations Framework Convention on Climate Change. It brings together the 197 nations and territories – called Parties – that have signed on to the Framework Convention. The COP has met annually since 1995.
https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop

[5] United Nations Framework Convention on Climate Change from which the acronym UNFCCC or FCCC), also known as the Rio Agreements, is an international environmental treaty produced by the United Nations Conference on Environment and Development (UNCED, United Nations Conference on Environment and Development), informally known as the Earth Summit. The treaty aims to reduce greenhouse gas emissions, which are at the root of global warming. The treaty, as originally stipulated, did not set mandatory limits for greenhouse gas emissions to individual nations; it was therefore, from this point of view, legally non-binding.
https://en.wikipedia.org/wiki/United_Nations_Framework_Convention_on_Climate_Change 24/07/2022

[6] The HLEG comprised 20 senior experts from civil society, the finance sector, academia and observers from European and international institutions. The group was mandated to provide advice to the Commission on how to

- steer the flow of public and private capital towards sustainable investments
- identify the steps that financial institutions and supervisors should take to protect the stability of the financial system from risks related to the environment
- deploy these policies on a pan-European scale

Financial Stability, Financial Services and Capital Markets Union 03/07/2020 https://ec.europa.eu/info/publications/sustainable-finance-high-level-expert-group_en

[7] Measuring the sustainability of investment funds: A critical review of methods and frameworks in sustainable finance

Ioana Stefania Popescuab Claudia Hitaja Enrico Benettoa

Journal of Cleaner Production

Volume 314, 10 September 2021, 128016

https://www.sciencedirect.com/science/article/pii/S0959652621022344

[8] The Global Sustainable Investment Alliance is an organization promoting sustainable investments through a series regional affiliate. GSIA members include the US SIF, European Sustainable Investment Forum (Eurosif), Responsible Investment Association Australasia (RIAA), the UK Sustainable Investment and Finance Association (UKSIF), the Responsible Investment Association of Canada (RIA), and the Dutch Association of Investors for Sustainable Development (VBDO). GSIA publishes a biannual global Sustainable Investment Review with regional data around the world. According to the 2020 report, the global sustainable investment market reached $35.3 trillion at the beginning of 2020, a 15% increase in two years. In total this amount equates the 36% of all professionally managed assets across regions covered in this report.

http://www.gsi-alliance.org 2022

[9] The Organization for Economic Co-operation and Development (OECD; French: *Organisation de Coopération et de Développement Économiques*, *OCDE*) is an intergovernmental economic organization with 38 member countries, founded in 1961 to stimulate economic progress and world trade. It is a forum of countries describing themselves as committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices and coordinate domestic and international

policies of its members. Most of OECD members are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries. As of 2017, the OECD member countries collectively comprised 62.2% of global nominal GDP (US$49.6 trillion) and 42.8% of global GDP (Int$54.2 trillion) at purchasing power parity. The OECD is an official United Nations observer.

https://en.wikipedia.org/wiki/OECD 22/07/2022

[10] https://www.morningstar.it/it/news/218754/sfdr-e-il-fondo-si-vestì-di-sostenibilità.aspx 09/02/2022

[11] Regulation (EU) 2019/2088, called "Sustainable Finance Disclosure Regulation" (SFDR), published in the Official Journal on 9 December 2019 and in force from 10 March 2021. The EU aims to harmonize the provisions for financial market participants and financial consultants, on the transparency of communication of the integration of sustainability risks and the consideration of negative effects for society and the environment, in governance processes and in the communication of information related to sustainability, relating to financial products.

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS EMPTY

Strategy for Financing the Transition to a Sustainable Economy

Strasbourg, 6.7.2021

COM(2021) 390 final

https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021DC0390&from=BG

[12] In compliant with Article 8 portfolios should promote environmental or social characteristics, or a combination of these characteristics, proving that the companies in which the investments are made comply with good governance practices. In compliant with Article 9 portfolios should have "sustainable investments as an objective".

Pictet Asset Management 2022

https://am.pictet/en/uk/global-articles/2021/pictet-asset-management/sfdr

[13] The TEG (Technical Expert Group on sustainable finance) is a group of thirty-five experts in the field of sustainable finance.

Financial Stability, Financial Services and Capital Markets Union 15/07/2020

https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en

[14] TEG published the: "final report on climate benchmarks and benchmark's ESG disclosure" (discussed in the first chapter)

https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/190930-sustainable-finance-teg-final-report-climate-benchmarks-and-disclosures_en.pdf 09/2019

[15] Market Index

By JULIE YOUNG Updated April 28, 2022

Reviewed by GORDON SCOTT

Fact checked by MELODY KAZEL

https://www.investopedia.com/terms/m/marketindex.asp

[16] All data was collected from the bank's official website, available at the following link:

https://group.intesasanpaolo.com/it/sostenibilita/indici-di-sostenibilita 27/05/2022

[17] MSCI Inc. as of March 2020

https://www.msci.com/our-solutions/indexes/esg-indexes

[18] Standard Ethics is a self-regulated sustainability rating company that provides a comparable and standardized solicited rating system suited to a modern rating agency in terms of methodology, long-term evaluations and fairness: the Standard Ethics Rating (SER).

https://www.standardethics.eu 2022

[19] The Organization for Economic Co-operation and Development is an intergovernmental organization with 38 member countries, founded in 1961 to stimulate economic progress and world trade. It is a forum. The members are countries describing themselves as committed to democracy and the market economy, providing a platform to compare policy experiences, seek answers to common problems, identify good practices and coordinate domestic and international policies of its members.

https://en.wikipedia.org/wiki/OECD 26/07/2022

[20] https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/ 27/07/2022

[21] European Investment Bank
https://www.eib.org/en/investor-relations/cab/index.htm 2022

[22] Green bond market and Sentiment: Is there a switching Behaviour?
JuanPiñeiro Chousaa, M. Ángeles López Cabarcosb, Aleksandar Ševićc
Journal of Business Research
Volume 141, March 2022, Pages 520-527
https://www.sciencedirect.com/science/article/pii/S0148296321008559

[23] Borsa Italiana
https://www.borsaitaliana.it/notizie/sotto-la-lente/green-bond-definizione.htm 27/07/2022

[24] The International Capital Market Association or ICMA is a self-regulatory organization and trade association for participants in the capital markets. ICMA stated aims are to promote high standards of market practice, appropriate regulation, trade support, education and communication. It produces standard documentation for transactions such as equity and debt issuance and repos.

https://en.wikipedia.org/wiki/International_Capital_Market_Association 22/04/2022
https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/ 2022

[25] Climate Bonds Initiative is an international organization working to mobilize global capital for climate action

https://www.climatebonds.net

[26] Financial Centers for Sustainability Europe

https://www.climatebonds.net/files/reports/cbi-financial_centres_03d.pdf 26/07/2022

[27] Corporate green bonds

Caroline Flammer

Journal of Financial Economics

Volume 142, Issue 2, November 2021, Pages 499-516

https://www.sciencedirect.com/science/article/abs/pii/S0304405X21000337

[28] Do shareholders benefit from green bonds?

Dragon Yongjun, TangYupuZhang

Journal of Corporate Finance

Volume 61, April 2020, 101427

https://www.sciencedirect.com/science/article/abs/pii/S0929119918301664

[29] Do shareholders benefit from green bonds?

Dragon Yongjun, TangYupuZhang

Journal of Corporate Finance

Volume 61, April 2020, 101427

https://www.sciencedirect.com/science/article/abs/pii/S0929119918301664

[30] Do shareholders benefit from green bonds?

Dragon Yongjun, TangYupuZhang

Journal of Corporate Finance

Volume 61, April 2020, 101427

https://www.sciencedirect.com/science/article/abs/pii/S0929119918301664

[31] L'Unione Europea e la finanza sostenibile Impatti e prospettive per il mercato italiano https://finanzasostenibile.it/wp-content/uploads/2019/11/Manuale-Europa-IT-Web.pdf 10/2019

[32] Jay Westerveld: is a researcher of habitats associated with endangered species including the Clam shrimp, Bog turtle, and the Northern Cricket frog. Westerveld coined the term "greenwashing" and has mounted ecological preservation efforts in the state of New York.
https://en.wikipedia.org/wiki/Jay_Westerveld 16/06/2022

[33] The "Six Sins of GreenwashingTM"
A Study of Environmental Claims in North American Consumer Markets
A 'Green Paper' by TerraChoice Environmental Marketing Inc. (November 2007)
https://sustainability.usask.ca/documents/Six_Sins_of_Greenwashing_nov2007.pdf

[34] 68% of US leaders admit to "greenwashing"
April 25, 2022 • Broc Romanek
https://www.esgprofessionalsnetwork.com/68-of-us-leaders-admit-to-greenwashing/

[35] European Commision
Brussels, 30.3.2022 COM(2022) 143 final
2022/0092 (COD)
https://ec.europa.eu/info/sites/default/files/1_1_186774_prop_em_co_en.pdf

[36] The EU wants to be a global leader in the fight against greenwashing, but it has a long way to go
MARIANNA CERINI
March 21, 2022
https://fortune.com/2022/03/21/the-eu-wants-to-be-a-global-leader-in-the-fight-against-greenwashing-but-it-has-a-long-way-to-go/

[37] Lyxor Asset Management

https://it.wikipedia.org/wiki/Lyxor_Asset_Management 26/01/2022

[38] Almeida, M., Lonikar, P.

Post-Issuance Reporting in the Green Bond Market 2021, Climate Bonds Initiative, May 2021.

https://esginvesting.lyxoretf.com/it/it/instit/pdfDocuments/cbipostissuance202102bpdfc3f52f038 25c70ce70cdbdab4d686bdd.pdf

[39] ESG investing in the UCITS market: a powerful and inexorable trend

11 March 2021

https://www.efama.org/newsroom/news/esg-investing-ucits-market-powerful-and-inexorable-trend

[40] MSCI Inc. to Acquire RiskMetrics Group, Inc.

Mar 01, 2010

https://ir.msci.com/news-releases/news-release-details/msci-inc-acquire-riskmetrics-group-inc

[41] MSCI ESG Ratings Methodology
Executive Summary
MSCI ESG Research LLC June 2022
https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf June 2022

[42] MSCI ESG Ratings Methodology

Executive Summary

MSCI ESG Research LLC June 2022

https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf

[43] MSCI ESG Ratings Methodology

Executive Summary

MSCI ESG Research LLC June 2022

https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf

[44] Mutual Fund Trading and ESG Stock Resilience during the COVID-19 Stock Market Crash
European Corporate Governance Institute – Finance Working Paper No. 782/2021
Rui A. Albuquerque, Yrjo Koskinen, Raffaele Santioni
February 14, 2022https://deliverypdf.ssrn.com/delivery.php?ID=944003031017122099067011089094098099000056068039003000127075101072070125091006095118102007096001105013006088072126127031091093013019005026020125078007095016110064026088019054017103114006026019118006024073027094120081031096100108005114090109074089110098&EXT=pdf&INDEX=TRUE

[45] https://it.tradingview.com 2022

[46] MSCI ESG Research Inc
30/06/2022
https://www.msci.com/documents/10199/78514cc5-a16d-493a-9774-af1012aa0420

[47] Schroders 30 September 2021
https://www.schroders.com/en/insights/economics/how-covid-moved-views-on-sustainability/

[48] ESG factors and risk-adjusted performance: a new quantitative model
N. C. Ashwin Kumara, Camille Smitha, Leïla Badisa, Nan Wanga, Paz Ambrosya and Rodrigo Tavaresb
JOURNAL OF SUSTAINABLE FINANCE & INVESTMENT, 2016 VOL. 6, NO. 4, 292–300
http://dx.doi.org/10.1080/20430795.2016.1234909

[49] ESTABLISHING ESG AS RISK PREMIA
Julia L. Pollard a , Matthew W. Sherwood a and Ryan Grad Klobusb
Journal Of Investment Management, Vol. 16, No. 1, (2018), pp. 1–12
https://www.researchgate.net/profile/Julia-Pollard-2/publication/327548430_Establishing_ESG_as_Risk_Premia/links/5ceda190299bf109da771d06/Establishing-ESG-as-Risk-Premia.pdf

[50] The Capital Asset Pricing Model (CAPM) describes the relationship between systematic risk, or the general perils of investing, and expected return for assets, particularly stocks CAPM evolved as a way to measure this systematic risk.
https://www.investopedia.com/terms/c/capm.asp 2022

[51] Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk, and Performance
Guido Giese, Linda-Eling Lee, Dimitris Melas, Zoltán Nagy and Laura Nishikawa
The Journal of Portfolio Management July 2019
https://jpm.pm-research.com/content/iijpormgmt/45/5/69.full.pdf