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Sustainable investments and the impact of ESG factors

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Introduction

The technological progress that mankind has experienced throughout its history has undoubtedly led to many benefits. It is enough to think of branches such as medicine, economics or engineering to realize the extent of this progress. However, giving a look at the other side of the coin, it is evident how this progress, combined with the capitalist desire of companies to maximize profits, may have determined a concurring counterbalance which led to the detriment of other elements, foremost, the environment.

In the Course of this paper we will therefore discuss, from an economic point of view, precisely the topic of sustainability, and more specifically its breakdown, classification and measurement through ESG factors. However, as this is a very broad topic that could be approached from different perspectives and through different subjects of study, in the course of this thesis we have therefore decided to focus on only one aspect of the drivers, that is their impact on investment strategies.

The first chapter will be a descriptive analysis of the definitions and event that have led to the current debates on the topic of sustainable investments. This will be done by initially defining the concept of sustainability through authoritative opinions and publications, and then two additional topics will be introduced and related to this: ESG factors and Corporate Social Responsibility. Given the importance of the topic of Social Responsibility in the sustainable investment debate, a thorough description of their definition and their chronological evolution from the 1970s to the present will therefore be provided in the second part of Chapter One.

The second chapter, on the other hand, will aim to describe the different characteristics of ESG factors starting from their definition given by the Secretary General of the United Nations Kofi Annan.

In the third and fourth chapters there will then be a greater focus on the topic of investment. Within the third chapter, in fact, some of the most important rating agencies will be classified and described in depth, as well as their processes analyse and

categorize various companies and countries through the sustainability filters dictated by ESG factors.

Next, with the fourth chapter instead, the various strategies that are implemented by investors who consider ESG factors in their decision-making process and the impact these have on their financial portfolios will be listed and described.

Finally, the last chapter of this thesis will aim to make a comparison between two different indices, one "traditional" based on a profit maximization objective, while the other based on the incorporation of stocks holding a high ESG rating. For this comparison, then, it will therefore involve on the one hand MSCI World index as a "traditional" index, while on the other MSCI ESG World Leaders as an index incorporating the ideology of ESG factors. In concrete terms, the analysis will be based on a comparison of the performance of the two indices, in terms of their historical performance and risk. In addition, these comparisons will be expanded by splitting the previously named indices, initially into geographic sub-indices and later into sectoral sub-indices.

Chapter 1: Introduction to Sustainability and CSR

1.1 What is sustainability?

Consequently, the term sustainability has been increasingly used in recent years, and it was defined by the World Commission of Economic Development as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development, 1987)

From this definition we can easily extrapolate different ideas based on two important principles: the first one related to the conservation and proper use of the limited resources that the planet has to offer, and the second one based on the idea of mutual respect among different generations (World Commission on Environment and Development, 1987). It is then clear how this notion can be applied in a multitude of branches, however, for the purposes of this analysis, it is important to focus on the corporate and economic sphere, and in particular how these are influenced by the ever-present notion of sustainability.

Although it is possible to go back years, or even centuries, to look into outmoded well-documented evidence on the subject of sustainable investments, in the context of this thesis the definition initially will be dated on the XIX century in the USA. In fact, between the 80s and 90s, formally began to talk about socially responsible investments (SRI).

Therefore, during this thesis we are going to analyse the topic of sustainable investments, or more specifically the topic of ESGs, representing a thematic decomposition of sustainability into three different categories, namely Environmental, Social and Governance. For this reason, ESGs are often used as a synonym for the sustainable investments.

1.2 From sustainability to CSR

Regarding ESG, the subject of this thesis, it is also interesting, if not fundamental for a correct analysis, to start with a breakdown on corporate social responsibility

(hereafter CSR), while defining it and at the same time underlining the fundamental historical steps that have increased its importance.

Considering economic history in its entirety, it is clear that this term is quite contemporary, in fact, it is estimated that this term, or at least of the actions that can be identified as pioneers of the current branch of CSR, can be initially located in the United States and dated around 1930/1940 (Carrol, 1999). Moreover, even if dated in that decade, in reality the actions taken towards a social responsibility purpose were very few; in fact, companies were only beginning to be aware of the problem and for this reason there are only a few writings that mention CSR. However, as from the following decade 1940-1950, or even more in depth in the 70s, there are numerous writings of academics and economists who began to formulate a real definition of CSR (Carrol, 1999).

1.2.1 First Definition

There are many discrepancies and discordances found among academics and their writings regarding the definition and history of CSR; however, almost all agree in recognizing Howard Rothmann Bowen as the father and pioneer of CSR (Bowman, 1953). In fact, Bowen defined CSR in his writings as following:

“It refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society.” (Bowman, 1953)

Bowen therefore sees this tool as a series of obligations that the company and its representatives have as part of their work to create added value for the community (Bowman, 1953). It is precisely this definition that is of fundamental importance and lays the pillars that have led CSR towards its current definition, which enhanced its very first interpretation to a philanthropic act of corporations to improve the well-being of communities. The difference may seem subtle, however, the distinctions between the pre-Bowen and the Bowen definition is substantial. While CSR was initially seen as a form of voluntary action carried out by companies and their representatives, later it became a set of rules that determine the obligations of companies towards the community.

1.2.2 Development in the 60s

In the wake of Bowen's studies, Spencer (1958), argues that technological improvement has led company's managers to change, that ended up redirecting them not towards only the main objective, the maximization of profits, but also towards the creation of a social action. A further improvement on this topic was brought in the 60s, when authors such as Keith Davis, suggested a new conception of CSR according to which this tool does not represent only an obligation, but also takes on a role of opportunity and investment for companies (Davis, 1960).

More specifically, the author argues that socially responsible actions taken by managers or representatives of the company can, in the long run, create an economic return for the company and therefore CSR should be seen in a positive light from the point of view of the company as well as the community (Davis, 1960).

1.2.3 Development in the 70s and the Committee for Economic Development

An additional step was taken in 1971, when Harold Johnson asserted that a successful decision-making strategy requires a company to consider simultaneously the economic sphere, the environmental impacts of production and distribution, the social impacts on the community, and the well-being of employees. In 1971, other than the important implications mentioned above by Johnson, a more concrete step towards the regulation and implementation of CSR was taken by the Committee for Economic Development (hereafter CED). In particular, this body, considering the complex and dynamic period that the economy was going through, in order to move from general theories of many scholars to a real and complete study of the subject set a frame of reference to follow:

1. Focus primarily on the social sphere rather than the economic sphere of business operations.
2. Focus more on large public or private companies that have a large production capacity, as these are the companies that most influence the community.
3. Take into account the organizational structures that companies adopt as part of their operations, as these can contribute to influencing the weight of social responsibilities.

4. Assess and understand the nature and degree of the relationships that companies have with the government and its agencies.
5. Circumscribe the entire study to the United States alone to make the final results as accurate and actionable as possible.

(Committee for Economic Development (CED), 1971)

It is important to highlight that this led the CED to formalize its own model of responsibilities, which is based on the representation of three different concentric circles:

1. The first circle, referred to as the Inner circle, contains the basic responsibilities that the company needs to achieve productive efficiency in terms of labour, production and economic growth.
2. The second circle, defined as the Intermediate circle, refers to the phase in which the company carries out its economic activities with the awareness of responsibility towards other spheres, such as that towards the environment, towards consumers or even towards relations with its employees.
3. Finally, the third and final circle, contains all the remaining responsibilities that the company has towards the community.

(Committee for Economic Development (CED), 1971)

1.2.4 Development in the 80s and the Freeman's theories

Going further along the years, in 1984, the author Freeman in his writings debates on the "stakeholders theory", which was born as a contraposition of the then most recognized and important "shareholders theory", according to which the actions and the evolution of the company must take into account only the influence of a single interest group, namely the shareholders, and on the basis of this awareness must be defined business strategies (Freeman, 1983).

The stakeholder's theory, on the other hand, is defined by Freeman as the awareness for which there are countless figures who can be key interest to the company. In particular, he defines the category of stakeholders twice as:

- Wide Sense of Stakeholder: this includes all stakeholders that continuously influence the company and its objectives, or all stakeholders that are influenced by the company.
- Narrow Sense of Stakeholder: Includes all the stakeholders who are fundamental to the proper functioning of the company.

According to this theory, the author also lists as stakeholders the employees, the state, the consumers of the final products/services, the creditors and debtors of the company, the local communities where the company operates, and like these many other figures.

Under this view, it is also interesting to point out that all the figures who are recognized as stakeholders, whether they are part of the broad or narrow definition, are also figures who have their own objectives, strategies and ideas that may differ from or coincide with those of the company. Therefore, Freeman argues that in the course of their work, companies must also consider the objectives and interests of these figures in their strategy (Freeman, 1983).

1.2.5 Development in the 90s and Carroll's model

In 1991, Carroll's studies brought another addition to the topic of corporate social responsibility through his idea of division of responsibility (Carroll, 1991). Specifically, the author constructs a pyramid model that divides and describes the various responsibilities held by the company into 4 macro-categories: Philanthropic Responsibilities, Ethical Responsibilities, Legal Responsibilities and finally at the base of the pyramid provides the Economic Responsibilities (Figure 1).

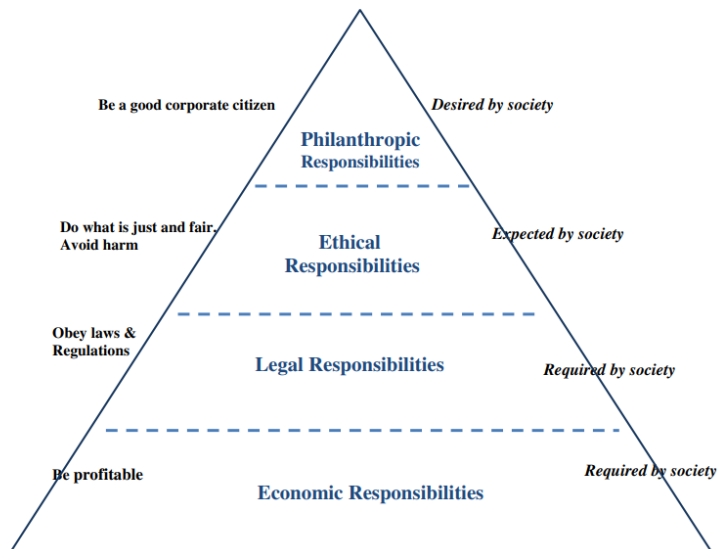


Figure 1 Carroll's pyramid of CSR, Source: (Carroll, 2016, p. 5)

In the first step of the pyramid, in figure 1, *Philanthropic Responsibilities* can be found; they are defined by the author as those responsibilities that the company feels it must take on for the improvement of the collective well-being. This category of responsibility does not contain any economic or profit-making component and is therefore defined as a philanthropic activity that comes from the voluntary action of a company. Continuing downwards, there are *Ethical Responsibilities*, that are all of these responsibilities that the company must face when, in its daily work, it asks itself whether it is right or wrong to follow a certain path to achieve its objectives, and therefore whether the actions of the company are in accordance with the objectives of the community. On the second step, starting from the bottom, are represented *Legal Responsibilities*, which contain all those responsibilities of a regulatory framework that are responsibility of the company during the course of its operations. These are essentially all the state and non-state laws, which the company must comply with in order not to incur in penalties. Finally, at the base of the Carrol Pyramid there are *Economic Responsibilities*, which are the main responsibilities of each company to continue its work, that are specifically those providing to create a positive economic result that can satisfy both the primary stakeholders and the company itself through the creation of profits (Carroll, 1991).

1.2.6 Development in the new century and focus on the European framework

In the years transitioning to the new century, the author who has contributed most to the development of responsibility towards sustainability is John Elkington, who, thanks to the theory of the *Triple Bottom Line* (often referred to as the *3Ps* or *Three*

pillars) has given greater concreteness to the theme, so to be still used by the European regulations in force (Książak & Fischbach, 2017). According to the author, in fact, the issue of environmental sustainability is no longer just a topic of discussion, but a real problem that companies can no longer ignore and must deal with, as a priority for future generations. Specifically, Elkington argues that companies must be responsible for 3 categories: profits, people and the planet.

This theory is fundamental for the conception of CSR as the author, once the 3Ps are defined and described, links these definitions and that of sustainability. Profit is seen by Elkington as a fundamental part of the company, thanks to which it survives and evolves. In addition to its creation, the author argues that the important economic part for CSR is the use that the company makes of this profit, and it is on this debate that many future authors have discussed (Elkington, 1998). The second part of his model is represented by the social component, or as defined by Elkington, the people. In this perspective, the author explains that people are the essence of a company, and, therefore, CSR would be seen as a tool that allows to build and cultivate relationships between the company and the people it works with, who can be its employees, its customers or simply external people who share the same local community. Finally, the last category highlighted is that of the planet, and the author expresses his attention to this aspect from an environmental point of view. In fact, he argues that the quality of the environment that is affected both by individuals and, above all, by companies, constitute a problem that in turn damages and influences the entire community (Elkington, 1998).

According to Elkington, therefore, in order to define a company as sustainable it must necessarily be able to guarantee a balance between the three categories above mentioned; thus, continuing to generate profit for the operation and improvement of the company, respecting the people inside and outside of it, aiming towards social progress, and at the same time promoting respect for the environment (Elkington, 1998).

As the 2000s approached, the increasing globalization and the succession of financial and environmental crises also led to a transformation of stakeholders' expectations, which, as a consequence, brought CSR to the next stage, being more and

more of central importance within the business context. After this evolution, companies need to adopt new tactics and strategies based on responsibility and sustainability, thus having to redefine the production chain of their products and services (Kuepfer & Papula, 2010).

Until now, we have focused only on studies and articles published on the American continent; however, nowadays the theme is beginning to spread widely on European soil. In 2001, in fact, the European Commission published its first green paper on the topic of CSR (Commission of the European Communities, 2001). This book represents the starting point for the European regulatory system of CSR; in fact, it contains a lot of information, such as:

- A general definition of CSR seen as a voluntary component undertaken by companies to help improving of the environment and society in which they operate.
- The pool of companies that are increasingly integrating the use of CSR into their strategies, however, coincides with almost all companies. In fact, representatives of all types of companies are beginning to use this tool (from microenterprises to large multinational chains).
- The benefits that the integration of CSR in their strategies brings to companies, ranging from those beneficial to the community and the environment, to those more economic arising from improved efficiency or a better reputation (from this part it can be seen the importance and influence that the previous authors had on this book, in fact it can be immediately perceiving for example the similarity with Carrol's pyramid mode).
- A series of tips and insights on what are and what benefits each component of CSR, are also analysed the actors involved in the strategies to be applied internally and externally to society, similar to what Elkington did previously in his studies.
- The actors who contributed to the creation of the book and those who will provide support on the interpretation and application of the theme are also mentioned (The European institutions - the Parliament, the Council of Ministers and other institutions).

In addition to the information previously made regarding the publication of the CED, a fundamental step towards the advancement of sustainability in its entirety, and especially with regard to CSR, with the introduction of the Global Reporting initiative Standards (GRI Standards). As the word itself suggests, these "Standards" represent guidelines, or formalizations, or more simply, these represent the sustainability reporting parameters that the non-profit organization named precisely Global Reporting Initiative (GRI) proposes and draws up as an aid for companies wishing to integrate CSR into their business strategies. These are concrete tools to help companies understand their real economic, social or environmental impact on the communities in which they operate or on the entire planet.

More recently, respectively in 2006 and 2011, the two authors Porter and Kramer recommended a different point of view for CSR that should now be seen as revolutionary and therefore able to challenge the entire literature on the subject. The basic element that configures the idea of the two authors as revolutionary is the suggestion to integrate society with the company, as they argue: "in other words, companies should operate in ways that secure long-term economic performance by avoiding short-term behaviour that is socially detrimental or environmentally wasteful" (Porter & Kramer, 2006).

In an article dated back to 2006, the two authors argue that the connection between business strategy and society and collective society is still very weak and for this reason these strategies obscure the possibility of creating added value for society. The role that CSR plays in the strategies of companies would be, according to the authors, justified by four different reasons:

1. Moral obligation: Companies have a duty to do the right thing, like a good citizen.
2. Sustainability: Companies, in meeting the current needs of the community, must not impact the ability of future generations to meet their own needs.
3. License to operate: The operations of companies must in some way comply with tacit or explicit government regulations.
4. Reputation: the use of CSR improves the image, reputation and strength of the brand and consequently increases its shareholder value.

Companies must therefore see CSR as a strategy to be applied to the core business and not as a marginal strategy, and by doing so it would no longer be just a cost, but an opportunity to create innovation, profit and also competitive advantage towards other companies (Porter & Kramer, 2006).

In this sense, the authors also propose some concrete examples of the benefits that would derive from the correct integration of the CSR within key corporate strategies:

- A company that supports education, health, and equal opportunity in its employees would create a highly productive workforce.
- Promoting efficient use of land, water and other elements would lead the company to increased production and decreased production costs.
- Creating safer products as well as safer workplaces decreases the risk of accidents and therefore the associated costs and at the same time it will make the company more attractive for the outside.
- A good regulation, a correct identification of rules and rights of companies, increase their efficiency and prospects for innovation while it will protect both companies and consumers.

Assuming, finally, that there are more companies pursuing the above strategies, they would create a healthy society, that would result in a greater satisfaction of people's needs and a consequent increase in their aspirations, which in turn would lead to an increase in business demand and greater profit for companies.

1.2.7 Focus on Porter and Kramer's ideas

As a result of their studies, then, Porter and Kramer lay the groundwork for what is now commonly agreed, namely that the success of a business strategy derives from the integration of CSR and core business (Porter & Kramer, 2006). In a 2011 article, however, Porter and Kramer return to talk about CSR arguing that this is still a limited concept, and for this reason it needs an evolution, or rather to this is necessary to add another concept, which they find in the "corporate shared value" (CSV). According to their authoritative perspective: "the CSV is the way in which 'businesses must reconnect company success with social progress'".

In addition to providing a definition of shared value, the two authors also define how this value can be created. In essence, there are 3 different ways to create CSV (Porter & Kramer, 2011):

1. Reconceiving products and markets = Aligning products and services with community needs, for example by providing them to disadvantaged or emerging markets.
2. Redefining productivity in the value chain = By using for example alternative resources and energies, or by choosing its suppliers differently based on their logistic systems, it is possible for the company to reduce the sum of costs in the production chain.
3. Building supportive industry clusters at the company's locations = Creating synchronicity with local clusters that can help improve your product or service (for example by sharing the same suppliers or using the same supply chain).

Although Porter and Kramer's work on CSV is not a true CSR model or a modification of existing ones, the addition of the concept of shared value gives the theme of social responsibility additional importance within the company's core business.

Chapter 2: ESG Definition

2.1 Definition and history

Once the main evolutionary steps of CSR have been analysed and described, which are found to be essential for a better understanding of the literary and academic background surrounding the topic of sustainability, we can now turn our attention to the core of this thesis: the Environmental Social Governance (hereafter ESG) instruments.

To the majority of people, the use of the internet is by now a habit, a term and an instrument of daily use. Precisely because of its proportions, there are countless actions and comforts that this tool offers to people. Among these tools there is one in particular that in recent years has begun to become very popular, the investments. Many might remember movies and TV series of the 90s or early 2000s in which were depicted important "brokers" of Wall Street who managed immense capitals and whose work for many was a dream; the use of the internet has brought, over the years, this fascinating work into our lives, it is enough to think about the countless brokers and financial intermediaries that can be found online.

The diffusion and evolution of CSR, along with on the one hand its characteristics and on the other hand the amplification that the internet brought, has led scholars and investors to address the issue of sustainable investments, and consequently led to the birth of concrete tools to be applied to them, namely ESG. The term ESG in particular was first coined in 2004 from the words of the Secretary General of the United Nations Kofi Annan (United Nation Global Compact, 2005).

Kofi Annan, during his time as Secretary General, gave an enormous boost to sustainable investments. In 2000 in fact, he created the United Nation Global Compact (hereafter UNGC), which aimed to bring together the world's leading companies and agencies to promote social, occupational, environmental and anti-corruption principles. In 2004, however, Annan went a step further, beyond just naming the ESG. He invited more than 50 representatives of the world's leading financial institutions to form a joint venture under the supervision of the UNGC and with the support of institutions such as the Swiss government, that would have provided the necessary funds, and the

International Finance Corporation (IFC), with the aim of finding a solution to incorporate ESG on the capital market (United Nation Global Compact, 2005).

Ultimately, the ESG represents the measurement tool through which investment companies, banks, major financial institutions or even individual private investors make their own analysis whether to implement or not an investment. As the name itself suggests, each component of the ESGs represents a different category of reference linked to a different type of problem, and therefore singular strategies of approach must be developed.

2.2 Focus on UNGC's report

In a 2005 report named "who cares win" released by the UNGC, the three ESGs categories are listed and for each one some important examples of issues relevant to investment decisions are highlighted. It is important to remember that these often differ according to the region or sector of reference (United Nation Global Compact, 2005).

Regarding the Environment category, it is worth mentioning the following examples from the same report mentioned above:

- The problem of climate change and the risks that are related to it.
- The need to drastically decrease the production of toxic and non-toxic waste.
- New regulations on the cost of pollution resulting from the production of products and services.
- The emergence of new markets deriving from products and services that are produced with environment-friendly technologies.

For the second category instead, the one related to social issues, the following topics are reported:

- A healthy and safe workplace for workers.
- The relationships established within the corporate community.
- The human rights of the company's employees and the suppliers with whom it works.

In the last category, the governance one, the UNGC report lists the following examples of key themes (United Nation Global Compact, 2005):

- The hierarchical structure of the board and corporate accountability.
- The presence of audit committees or independent auditors.
- The nature and compensation of the company's executive officers.
- The management to limit corruption and the problems arising from it.

After the classification and definition of the three categories involved, another fundamental piece of information that can be extrapolated from the UNGC report are the goals that the UNGC report envisages for the various actors involved in investments need in order to use ESG as a tool to transform them into sustainable investments.



Figure 2 Actors of ESG, Source: (United Nation Global Compact, 2005)

Looking at Figure 2, therefore, the list of actors involved in the use of ESG is also interesting. In fact, the UNGC does not foresee that only companies and important investment institutions have to face with ESGs, but it is a burden that each of the economic and non-economic actors have to fulfil in order to achieve a more sustainable future collective well-being.

Among the actors involved are therefore both the companies manufacturing products or services, but also analysts/brokers who measure their financial performance by

incorporating them into ESG measurements, investors, consultants, various governmental or autonomous agencies and the Government itself with its regulations. In addition to that, the market regulators and various pension trustee are affected by ESGs; it is also important to mention accountants and educators who hold the task of promoting and teaching the use of ESG (Figure 2).

The evolution of the definition and the implementation of the ESG, from its birth in 2004 until today, hold fundamental importance against the above-mentioned players as it has redefined the entire investment market. In fact, ESG brought the issue of sustainability from the individual "green" sectors to which it initially referred to, to the entire market and the investment decisions that are part of it.

Moreover, with their introduction it should be noted that the very idea of risk has changed. Until the appearance of ESG those concerned implemented their investment strategies mainly by analysing balance sheets, income states or cash flows of various companies involved in the action, and therefore mainly by calculating some ratios. For example, profitability ratios are calculated and analysed, such as:

- Return on Equity (ROE).
- Return on Investment (ROI).
- Return on Sales (ROS).

In addition, rates defined as capital assets are also calculate. These rates are those that analyse the ability of a company to maintain a stable balance sheet over time, as an example by analysing the level of debt in relation to its equity. Among the various analyses, the CASH flow released by the company is then analysed, through which the degree of liquidity present in the accounts of the company is analysed with respect to other parameters involved, such as sales revenues, shareholders' equity and other variables (kothari & Ball, 1994).

Since the appearance of ESG, in their analyses, the players, in addition to incorporating the above-mentioned indices which are obviously indispensable in order to give a judgement about the level of risk and the level of financial return of the same investment, need to addition the ESG factors along with their relative degrees of risk.

These are calculated bearing in mind how much each single company or conglomerates takes into account these components in its own business strategy.

In this regard, a company that operates bearing in mind the environment, by using eco-sustainable resources for example, will have a better ESG rating than another hypothetical company that, other economic indices being equal, chooses instead of pursuing this strategy.

If we extend this example to the other two categories involved, namely the Social and Governance sphere, we can view a more complete picture of the impact that the strategic choices of companies have on ESG ratings. In fact, a company that pursues strategies aimed at respecting ESG factors will have a better rating at the same time, and for this reason, in conditions of equivalence, it will certainly be preferred by investors compared to companies with lower ESG ratings.

Chapter 3: Measuring ESG through ratings

Given the vastness and complex nature of this topic, it is evident how there can be multiple methods of calculating ESG ratings attributed to companies, in fact in 2018 there were more than 800 different types of ratings based on ESGs.

Among the main methods of rating composition, the main standards adopted by the market are the Standard Ethics, the MSCI, the Morningstar/Sustainalytics, Cerved, Refinitiv and the EcoVadis's rating.

3.1 Morningstar/Sustainalytics

Morningstar is a Chicago-based investment research firm that collects and analyses data on funds, stocks, and financial markets. In 2016 it began to take an interest in and develop its own Rating System with regard to ESG factors by releasing its "Morningstar Sustainability Rating," while in 2020 its merger with Sustainalytics, which places its strength on researching and rating companies based on ESG factors, took shape.

The merged company aims to support investors in developing and implementing their responsible investment strategies by incorporating information and assessments on sustainable investments.

In practice then, the ESG rating proposed by Morningstar/Sustainalytics aims to consider sustainable issues by summing the risk derived from the various ESG issues considered, with the market risk itself of each company (Hale, 2016).

The ESG rating determination process developed by Morningstar/Sustainalytics is an innovative system, distinct for this reason from other ratings on the market, which aims to create a two-dimensional system. This two-dimensional architecture created by the agency, places on one dimension the "Exposure," that represent the degree of exposure to risks attributable to ESG factors, while in the second dimension, called "Management," there is the effectiveness of the company to cope with these risks is evaluated.

From the collaboration with the other agency, Morningstar has thus implemented Sustainalytics' knowledge of ESG factors and Morningstar's instrumental capabilities to develop its current rating model.

Sustainability ⁱ

ESG Risk Rating Assessment



ESG Risk Rating



Highest Controversy Level (1 = Low, 5 = Severe)

3 Significant

Incidents: Business Ethics, Customer, Employee, Public Policy, Social Supply Chain

Top 3 Material ESG Issues

Emissions, Effluents
& Waste
Supply Chain

Occupational Health
& Safety
Overall

Employee
Human Rights/Supply Chain

Figure 3 Morningstar's/sustainalytics ratings, Source: (Morningstar, 2021)

The final rating is thus composed mainly of three basic interpretations:

- 1) The first one, represented on the left of the above figure, is the ESG Risk Rating Assessment and it is a graphical assessment that is based on a scale of 5 globes. In this assessment the best level is represented by 5 globes and means that the company faces negligible financial risks from ESG issues, while on the other hand if the result turns out to be only one "globe," it means that the company is highly exposed to risks inherent in ESG factors
- 2) The second one instead, is the one represented by the graphic scale of colours on the right of the figure, as well as its score, and it stands for the final score the company received after Sustainalytics analyses with respect to 4 different categories weighted by their respective weights, and the result of which is the share of Unmanaged risk, that represents the share of risk the company could not cope with (Figure 4).

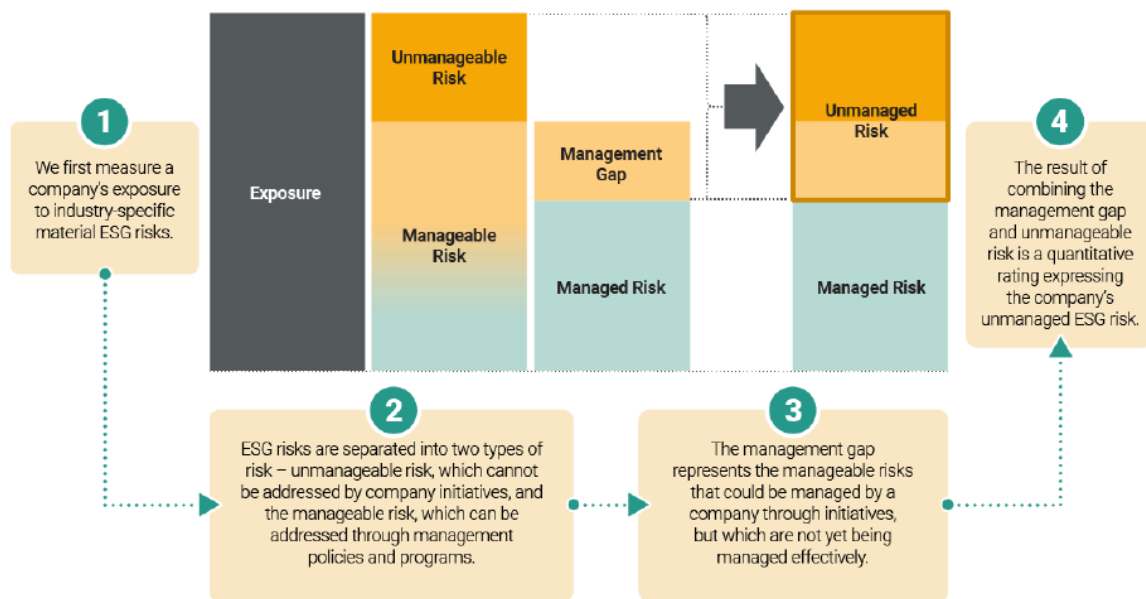


Figure 4: Components for the ESG Risk Ratings, Source: (Sustainalytics, 2020, p. 3)

- 3) The last key interpretation extrapolated from Figure 3 is the level of controversy attributed to the analysis; it aims to assess how the company's involvement in certain facts might impact the interests of stakeholders and, consequently, the company's own business.

Finally, the last important feature of the rating provided by Morningstar/Sustainalytics is the frequency of update of these. In fact, it is reported that this update is done monthly tending precisely to the dynamism of the market.

3.2 MSCI

The second rating agency that we are going to analyse is the Morgan Stanley Capital International, commonly known by the acronym MSCI.

MSCI is an American investment bank based in New York, which has been operating in the global market for over 40 years.

Its operations are primarily based on managing portfolios on an active basis with the goal of outperforming the market and achieving results for its clients.

This commitment to satisfying its clients has brought the company and its employees' enormous knowledge in much of the global market, in fact it is estimated that MSCI

covers about 85 percent of the entire market, considering both listed and private companies.

From their own work, therefore, they have developed innovative ideas and elaborate and complex financial instruments to best conduct market operations and reduce the risk associated with them.

Over the years, the company has therefore formed and distributed to its stakeholders many market indices as a reference by the majority of investors; some of the main indices elaborated and provided by MSCI are for example:

- MSCI ACWI, index of both emerging and developed countries
- MSCI World, index of all developed countries
- MSCI Emerging Markets
- MSCI EMU
- MSCI Europe

In addition to these market indices, moreover, given the growing importance of sustainability, MSCI has provided for the construction of ESG-based indices.

MSCI is a provider of decision's support tools and services for the international investment community.

Given the enormous impact that various ESG factors can have on investment portfolios, and more specifically on the level of risk in the long run, MSCI has provided for the construction of its own rating system to help investors for a better understanding risks and opportunities that ESG factors bring to their portfolios.

So, the MSCI agency rates companies on a scale of "AAA" to "CCC" based on their exposure to industry-relevant ESG risks and opportunities and their ability to manage those risks and opportunities relative to competitors (Zanin, 2022).

Specifically, the company has drawn up a process for determining the final rating that is graphically represented from pyramid shape. Thus, the first step starting from the top is representing from the first process, which is the research and break down the data inherent in programs, performance, and corporate policies that influence or are influenced by ESG factors (Figure 5).

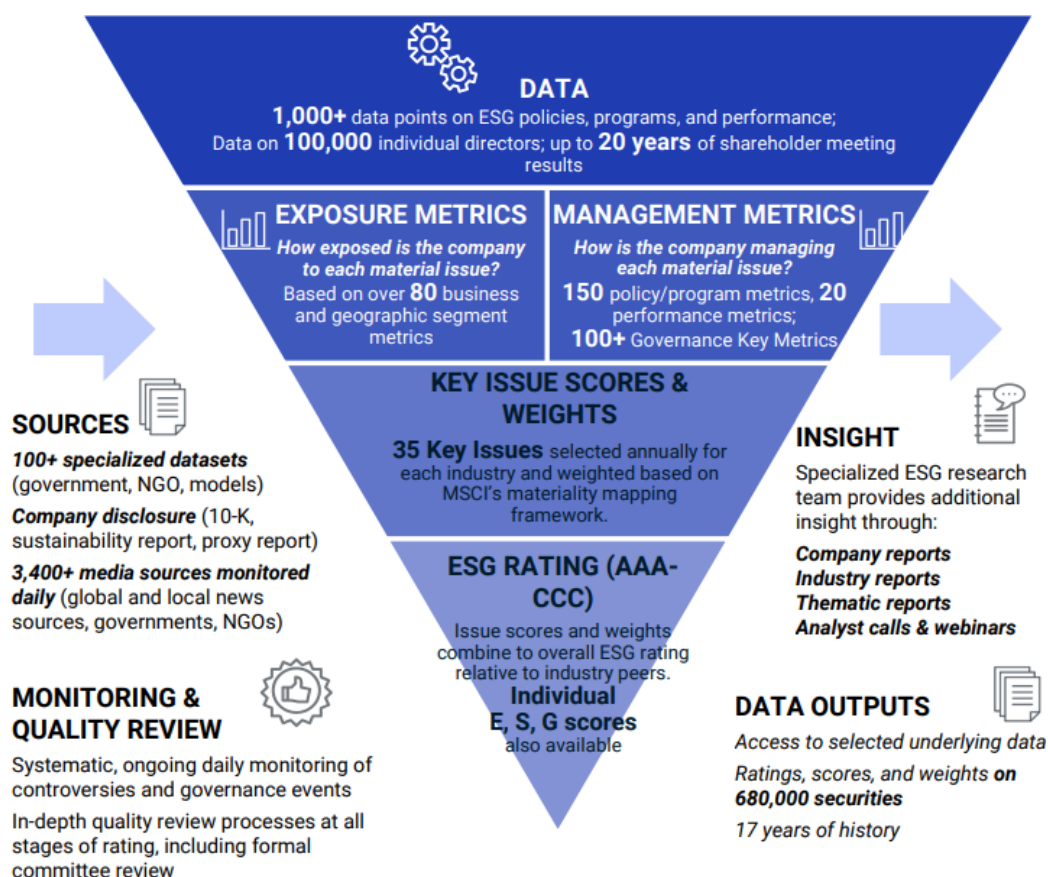


Figure 5: ESG Rating Framework and Process Overview, Source: (MSCI, 2022)

To achieve the result, MSCI provides a team of more than 200 analysts who possess the task of analysing a multitude of information from the reports, accounting records and documents derived from shareholder's meetings based on 35 topics regarding ESG factors. After the stage of collecting data, is creating a weighted average among them and comparing with the results obtained by the rest of the industry. This final comparison is aimed to cross-reference the individual company's assessment with those obtained by the entire reference industry and its competitors.

Thus, ESGs are valued as possessing a certain weight toward the relevant industry and the external environment. This characteristic is defined in economic terms as a positive externality if it provides a revenue opportunity for the company, while oppositely they create a negative externality if they cause a cost (Figure 5).

For MSCI specifically, ESG ratings are made to answer four main questions (MSCI, 2022):

1. Which are the main risks and opportunities attributable to ESGs to which the company and its industry interfaces?
2. What level of exposure does the company have to these risks/opportunities?
3. How does the company interface with these risks/opportunities?
4. How does the company fits into this context, and how is it positioned relative to other global industry components?

3 Pillars	10 Themes	35 ESG Key Issues	
Environment	Climate Change	Carbon Emissions Product Carbon Footprint	Financing Environmental Impact Climate Change Vulnerability
	Natural Capital	Water Stress Biodiversity & Land Use	Raw Material Sourcing
	Pollution & Waste	Toxic Emissions & Waste Packaging Material & Waste	Electronic Waste
	Environmental Opportunities	Opportunities in Clean Tech Opportunities in Green Building	Opportunities in Renewable Energy
Social	Human Capital	Labor Management Health & Safety	Human Capital Development Supply Chain Labor Standards
	Product Liability	Product Safety & Quality Chemical Safety Consumer Financial Protection	Privacy & Data Security Responsible Investment Health & Demographic Risk
	Stakeholder Opposition	Controversial Sourcing Community Relations	
	Social Opportunities	Access to Communications Access to Finance	Access to Health Care Opportunities in Nutrition & Health
Governance	Corporate Governance	Ownership & Control Board	Pay Accounting
	Corporate Behavior	Business Ethics Tax Transparency	

Figure 6 MSCI ESG Key Issue Hierarchy, Source: (MSCI, 2022)

The Figure 6 represents in detail what is the composition the single themes, that composing the final ESG rating, in fact as previously introduced, for each factor, called a pillar, some main themes of analysis are identified. From these themes, the 35 key ESG points are then highlighted, representing individual questions or issues faced by scholars in regard to sustainability.

To then arrive at the final rating, the weighted average of the 35 key points are calculated and then normalized relative to ESG's Rating industry peers. Having done this,

the individual sector committees are tasked with making changes and adjustments, if appropriate, in order to achieve a more objective representation and finally develop and publish the final score and its corresponding alphabetical rating.

The final score that is given is represented by an alphabetical rating from "AAA" to "CCC" where companies with the first rating turn out to be those that put more effort to ESG factors and therefore have a lower long-term risk, while those with a "CCC" rating turn out to be those with a higher long-term risk resulting from low attention to ESG issues.

MSCI, therefore, through this rating creates a classification of companies, and consequently proceeds to describe their market positioning based on the scores obtained. From the rating therefore three different categories of companies can be extrapolated, on the left are defined as the "Laggard" companies, which are the companies that are the least respectful of ESG factors and for that reason also those with higher correlated risk and lower opportunity (Figure 7).

In the middle, on the other hand, "average" companies are represented, which have a "BBB" rating and manage the mix of ESG factors at a level that stands as that of the industry average.

Finally, the companies aiming for full satisfaction of ESG factors are the "leading" companies, which, having a "AAA" rating, aim to be leading companies in reducing the risks related to ESG factors while at the same time deriving the greatest opportunities from them (Figures 7).

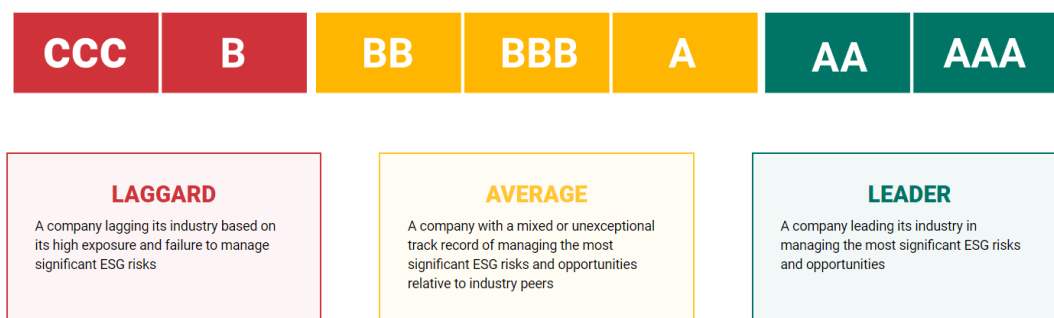


Figure 7: composition of the final MSCI's ESG grade, Source: (MSCI, 2020, p. 4)

3.3 Standard Ethics

Standard Ethics is an autonomous agency that aims to develop and diffuse ratings that take into account sustainability. The standard set by the agency Standard Ethics does not aim to give advice or counsel to investors, but only to evaluate a company based on their commitment to ESG policies. It therefore aims to inform the market about the performance of the companies or entities being evaluated, creating as much transparency and objectivity as possible.

A 'peculiarity of this agency, related precisely to the objective of impartiality and transparency, which therefore characterizes its popularity is the continuous updating and improvement of its processes in order to align them with the directives and principles drawn up from the European Union (EU), The Organization for Economic Co-operation and Development (OECD), and also from United Nations (UN). This peculiarity, therefore, ensures that Standard Ethics' ratings are as holistic, homogeneous - and ethically neutral - comparison as possible.

According to the Standard Ethics, the final output must be able to measure whether or not a company is able to cope with the main sustainability issues, namely those represented by ESG factors, while simultaneously quantifying each company's ability to seize opportunities or curb related risks.

The agency therefore proposes a 9-level scale that goes to evaluate each company's performance on the issues covered by ESG. The highest level is achieved by the EEE rating while the lowest level is represented by companies in the F level.

For the construction of the final rating, the agency works mainly in 3 stages:

1. Analysis and evaluation of sustainability indicators:

Approximately 40 different types of sustainability indicators are applied in this phase, which aim to find whether or not corporate and managerial policies related to Governance and sustainability factors are aligned with the general policies defined and published by EU, UN and OECD bodies. These indicators thus go to solicit issues regarding ESG factors, the entity's performance in the marketplace, such as fair competition, market distortions, but also its weight in the marketplace and its management of human rights.

Once these indicators are applied to the data, the so-called "Baseline Rating" is thus constituted, that is a first temporary rating, which then with the addition of the indicators and analyses from phase two, will go on to form the final rating.

An easy key to understanding how this baseline is constituted is the matrix in Figure 8, which places on the X-axis the transition from a CSR and ethics view to that of general sustainability, thus signifying a concrete application of CSR and ethics theory to arrive at an entity that can be called sustainable.

On the Y-axis, on the other hand, weight is given to the effort and commitment that the institution employs in applying it. The higher therefore these two criteria are, the higher is the rating (Figure 8).

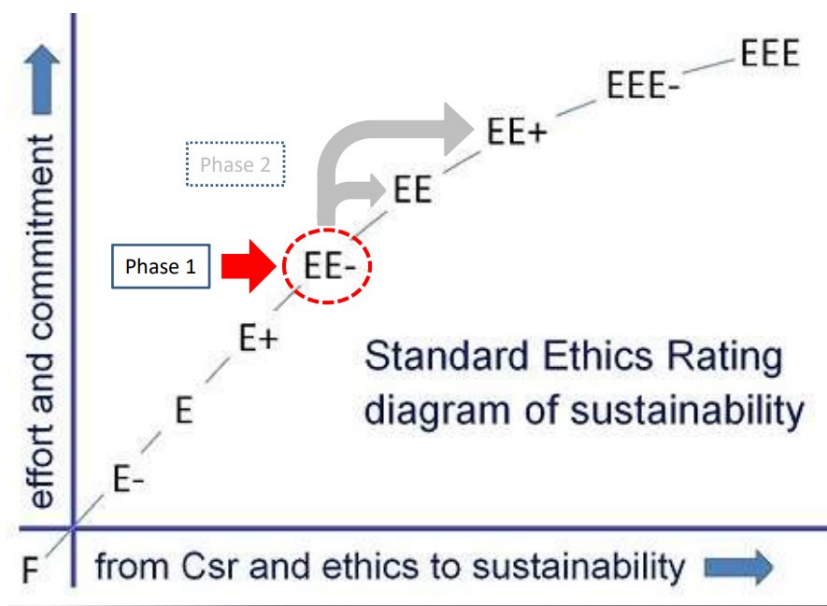


Figure 8: Phase 1 of Standard Ethics' process of rating, Source: (Standard Ethics Ltd, 2022)

2. Analysis and evaluation of the strategies and business plans that the evaluated entity sets for the future:

At this stage, the agency makes adjustments to the previously created Baseline through the application of certain indicators placed to assess whether or not the strategies and business plans that the agency plans to implement meet the Sustainability Policies determined by the 'EU, the 'UN, and the OECD.

In addition to that, Standard Ethics also provides guidelines of the changes that can be made to the Baseline: if with the strategic plans it is planned to improve a key part of sustainability, in a "really substantial" way, the Baseline will go to increase by two points, if this change is only "substantial" then it will increase the Baseline by one point, while if there are no changes in accordance with the principles of Sustainability, then the final rating will go to be the Baseline (Figure 9).

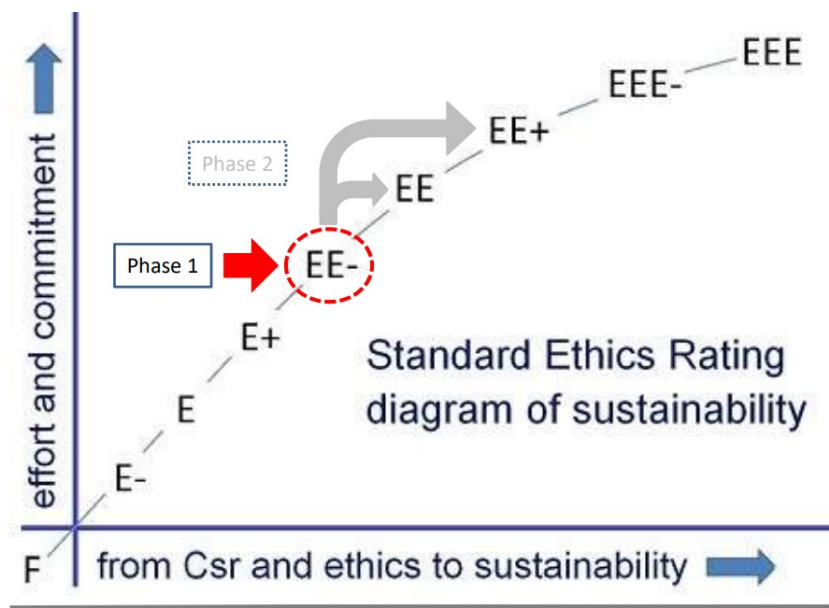


Figure 9: Phase 2 of Standard Ethics' process of rating, Source: (Standard Ethics Ltd, 2022)

3.Implementation of the Standard ethics algorithm and issuance of the final output:

$$\left[\frac{(F_{c_{EU}} + S_a + I_{d_{EU-OECD}} + M_w \cdot f(S_a) \cdot f(I_{d_{EU-OECD}}) + C_{g_{UN-OECD-EU}} \cdot f(F_c) \cdot f(I_{d_{EU-OECD}}))}{10} + k \right] + g(C_{g_{UN-OECD-EU}})$$

Phase 1 Phase 2

Formula 1: Algorithm of Standard Ethics, Source: (Standard Ethics, 2022)

Once Steps 1 and 2 have been defined, Standard Ethics proceeds to input the data processed from the previous assessments into its algorithm, created specifically for this assumption.

In the Formula, the variable Fc is related to the competitiveness of the entity under consideration; The variables Sa and Mw, on the other hand, are variables that go to analyse the importance of sensitive aspects for minor shareholders or new

shareholders, for example, clauses or agreements included in the corporate bylaws concerning voting rights or other rights and duties held by them.

On the other hand, the fourth variable inherent in phase one, is Id and represents the risk management and management control system, while the last variable covered by the algorithm is Cg and represents the main point of our study, that is, the one inherent in ESG factors, and is precisely aimed at assessing whether these are in line with the various European or International agreements, for example, the Paris Agreement.

Finally, it is noted that the second part is the part where, as reported earlier, upward or downward adjustments are carried out (Formula 1).

Once this sophisticated algorithm has been processed, the final output will therefore be an alphabetical rating that has the letter "F" as its minimum grade and "EEE" as its maximum grade (Figure 10).

EEE	EEE-	EE+	EE	EE-	E+	E	E-	F
Full	Excellent	Very strong	Strong	Adequate	Non-compliant	Low	Very Low	Lowest level
Investment Grade					Lower Investment Grade		Non-investment Grade	

Figure 10 : Classification of ratings, Source: (Standard Ethics Ltd, 2022)

Finally, Figure 10 also shows the usefulness and criterion by which any interested party can read this rating. Having precisely in the first-place companies with an EEE rating, the of which is possessed by those companies or entities that are completely sustainable and on which it will be advisable to invest, while at the opposite end they will be ranked que an entity with a very low level of sustainability and therefore not advisable to invest in.

3.4 EcoVadis

It is a rating agency that has been in charge of creating a Sustainability Scorecard since 2007, with the aim of rating different companies on 4 different topics, namely on the environment, labour rights, human rights and sustainable procurement, and in addition an additional scorecard dedicated to CO2 emissions (EcoVadis, 2007).

The objective of the Ecovadis Corporate Social Responsibility (CSR) rating methodology is to assess the quality and performance of the CSR management system of each company under consideration.

To achieve this goal, 7 different principles are set out:

- The burden of proof rests on the company being assessed.
- Management CSR is evaluated taking into account the geographical location of the company, its size and the problems of the sector to which it belongs.
- The assessment is based on both sources provided directly by the company and external sources provided to it by, for example, external agencies or other authorities.
- Evaluation must be supported by technology tools.
- The CSR Assessment is made by international experts competent in the field.
- The evaluation process is fully traceable, safe and transparent, so that the company or other interested parties can consult the process and the results at any time.
- There is a continuous improvement of the process through training of the staff and feedback of the companies involved.

Ecovadis, like the other agencies analysed in this chapter, to carry out its own investigation and evaluation of CSR management, focuses on 4 different themes: Environment, Social, Ethics and Sustainable Procurement.

In turn, the agency subdivides these four categories into 21 key themes related to the four categories mentioned above, such as water or pollution for the environmental category, working conditions for the social category, corruption and anti-competitive practices for the ethical category, or the sustainability policies of corporate suppliers for the last category.

For Ecovadis, a CSR management system consists of Policies, Actions and Results, and for this reason it focuses its assessment on 7 different categories of indicators that are part of it:

- 1) For the policy category, it sets Policies/Governance (POLI) and Specialisations (ENDO) as indicators.
- 2) For the category of Actions it sets as indicators the Measures (MESU), the certifications (CERT) and the coverage and the implementations of the actions (COVE).
- 3) For the Results category, it is made up of Reporting Indicators (REPO) and 360° monitored news (360).

Finally, the agency assembles a large number of data extracted from internal and external reports to the evaluated companies, evaluates each indicator individually giving a score and finally calculates the weighted average for each element of CSR management (Figure 11).

	ENVIRONMENT	SOCIAL	ETHICS	SUPPLY CHAIN	WEIGHT Same Weight + adjustments to Size/Country	
Polices	50	50	50	25	25%	Polices
Endorsement CSR Initiatives	0	0	0	0		
Measures/Actions	50	75	25	25	40%	Actions
Certifications/Labels/Audits	100	50	50	50		
Implementation Coverage	50	25	50	25		
Reporting/KPIs	50	25	0	25	35%	Results
360: Controversies/Awards	75	75	75	75		
WEIGHT Depends on company activity and size	28%	36%	18%	18%		
	60/100	50/100	40/100	40/100	49/100	

Figure 11: Categories and respective weight, Source: (EcoVadis, 2016, p. 11)

The result of this analysis must then be seen as the score obtained for each theme of belonging, and so a weighted average will be applied for each of them obtaining a perfectly balanced result, which will be a score from 0 to 100.

The final score thus obtained will therefore be an effective indicator of the quality of the work of CSR management and given the transparency and objectivity with which it is expressed, you can see it as a benchmark towards other companies belonging to the sector.

For a more correct reading of this score, Eco Vadis has therefore drawn up its own table of Reading, which assigns for each level of score a different key of reading (Figure 12).

	CSR PERFORMANCE	LIKELY OUTCOME
	85-100 OUTSTANDING	High Opportunity → <ul style="list-style-type: none"> Structured and proactive CSR approach Engagements/policies and tangible actions on major issues with detailed implementation information Comprehensive CSR Reporting on actions & performance indicators Innovative practices and external recognition
	65-84 ADVANCED	Medium Opportunity → <ul style="list-style-type: none"> Structured and proactive CSR approach Engagements/policies and tangible actions on major issues with detailed implementation information Significant CSR Reporting on actions & performance indicators
	45-64 CONFIRMED	Engaged → <ul style="list-style-type: none"> Structured and proactive CSR approach Engagements/policies and tangible actions on major issues Basic reporting on actions or performance indicators
	25-44 PARTIAL	Medium Risk → <ul style="list-style-type: none"> Minimum structured CSR approach Few engagements or tangible actions on selected issues (reactive) Partial certification or occasional products labeled
	0-24 NONE	High Risk → <ul style="list-style-type: none"> No engagements or tangible actions regarding CSR Evidence in certain cases of misconduct (e.g. pollution, corruption)

Figure 12: Scoring Scale of Eco Vadis rating, Source: (EcoVadis, 2016, p. 12)

3.5 Cerved Rating Agency

Like the other agencies described above, also the Cerved Rating Agency (CRA) has developed a series of algorithms that can allow the Stakeholders of the market to have a wide information framework about ESG factors, or more specifically how companies approach these and how they manage the risks and opportunities associated with them.

The aims of the agency in the elaboration of its method are those of Transparency, Completeness, Impartiality, but above all of comparability of results.

The scoring process consists initially of the subdivision of the three ESG themes on the basis of several performance indicators, defined as "key indicators" and aim to separate the overall assessment into individual assessments to facilitate the process.

The large data collected from documents provided by the company or by external reporting agencies are then managed and categorized by the SQL system and then analysed through the Python application. From this analysis you will then have individual scores for each key indicator, which will be weighted for each individual theme of

belonging, taking into account that the total sum of weights w% must be equal to 100 (Figure 13).

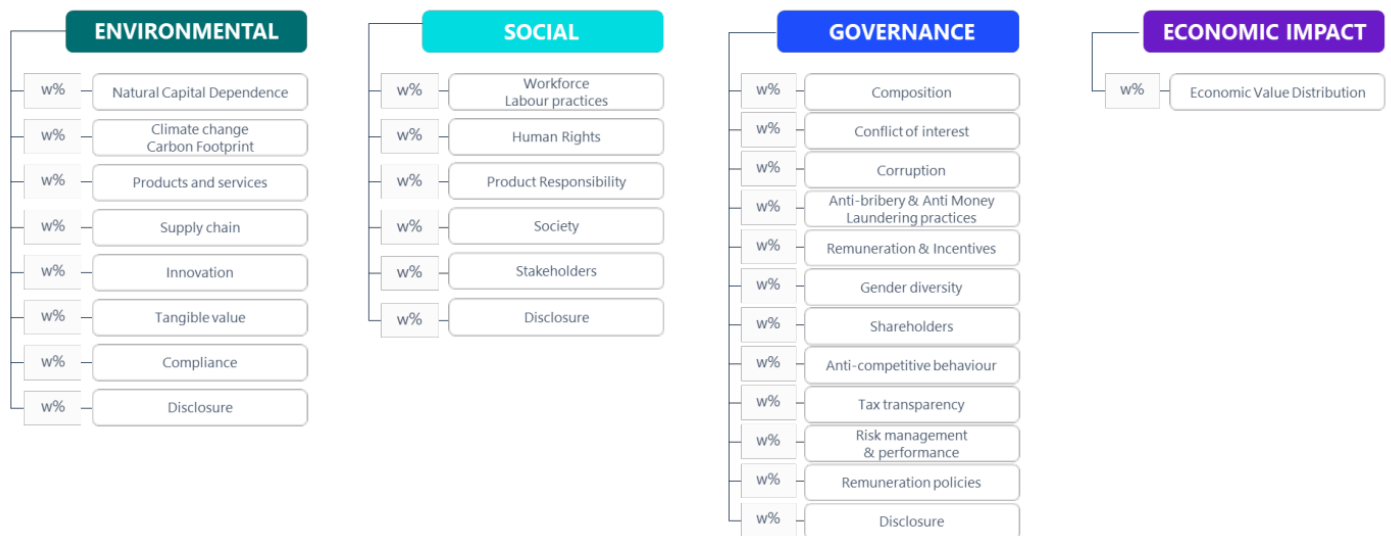


Figure 13: Subdivision of weight into categories, Source: (Cerved rating Agency, 2019, p. 8)

The final score drawn up by the agency will therefore be the result of the previous subdivision and the application of the following algorithm:

$$ESGe = EW \times \sum_{E=1}^8 (w_E \times KI_E) + SW \times \sum_{S=1}^6 (w_S \times KI_S) + GW \times \sum_{G=1}^{12} (w_G \times KI_G) + ecW \times (w_{ec} \times KI_{ec})$$

Formula 2: Cerved's algorithm, Source: (Cerved rating Agency, 2019, p. 9)

The variables represented in the Formula 2 are:

- EW: Weight of the topic Environment
- SW: Weight of the Social Issue
- GW: Weight of the Governance issue
- ecW : Weight of the Economic Theme
- KI: are the key indicators applied and w are the weight of these.

The final value of the rating will therefore be a score with a scale from 0 to 100, which are categorized into classes of letters, from the D, representing a score 0-29,29, to the AAA which has a score of 85-100.

3.6 Refinitiv

Refinitiv is an American-British global provider of financial market data and infrastructure. It was originally owned by Blackstone Group LP (with a 55% stake) and Thomson Reuters (with a 45% stake).

As of 1st February 2021, its selling process was finalized and Refinitiv was definitively sold to London Stock Exchange Group (LSEG).

A considerable part of data is dedicated to sustainability. As the importance of sustainable finance increased in the last decades Refinitiv aims to become a point of reference for financial investors looking for trustable sustainability metrics to include in their portfolio analysis and to use for their investment strategy.

Refinitiv database covers 80% of market capitalization collecting data back to 2002. The overall number of companies present is around 12,000 public and private companies globally.

The process of creating the ESG rating becomes form the collection of data. Refinitiv relies on 700 analysts from all over the world that collect and process publicly available data to create 630 ESG measures. The data are gained from annual reports, company websites, CSR reports and news sources. This massive database is updated every week.

Once created the data is continuously subject to checks on its quality, reliability and accuracy using various techniques that combine both automatic checks during the input process and manual sampling for review by auditors and managers (Refinitiv, 2022).

Data is used to create two ESG scores:

1. ESG score: measures the company's Environmental, Social and Governance performance.
2. ESGC score: this score adds to the previous one information on ESG controversies.

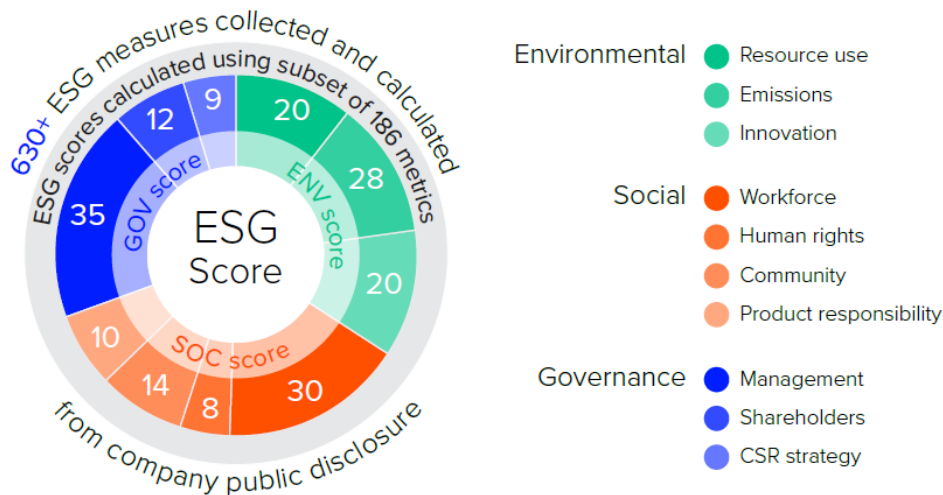


Figure 14: Refinitiv's ESG rating, Source: (Refinitiv, 2022, p. 6)

The ESG score provides a summary measure of the company's sustainability performance.

This score is built starting from 630 company level ESG measures. These data points create the 10 categories. The 3 pillar scores (Environmental, Social and Governance) are a weighted average of the 10 categories. Ultimately the overall ESG score is a weighted average of the 3 pillars.

The ESG score are presented in both percentages and letter grades with twelve grades that go from A + (the highest) to D – (the lowest).

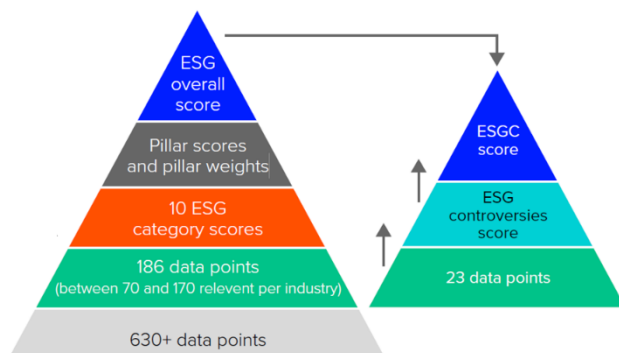


Figure 15: Scores calculation methodology, Source: (Refinitiv, 2022, p. 8)

$$\text{score} = \frac{\text{no. of companies with a worse value} + \frac{\text{no. of companies with the same value included in the current one}}{2}}{\text{no. of companies with a value}}$$

Formula 3: Fine score's formula, Source: (Refinitiv, 2022, p. 9)

Therefore, going to analyse in detail the composition and calculation that is used to reach the final rating, there are several steps:

1. Initially, 3 macro categories of study are defined, called by the authors the "pillars", which are Environment, Social and Governance.
2. In turn, each of these pillars is therefore made up of different categories for a total of 10 categories.
3. Since the objective is to evaluate these categories, the Refinitiv ones have therefore included indicators for each of these, in order to create an accurate and objective assessment as much as possible. Indicators are questions related to the theme of each category to which a Boolean answer (0,1, and -1) is assigned if there are questions whose answer can be a "YES" or a "NO", while if it is a quantitative question, the indicator will be numerical.
4. For each indicator, the absolute value is then changed to the percentile value by applying the formula (2). Then the formula 2 is applied again to detect the percentile value of each category.
5. Finally, the final ESG score is obtained as a weighted average of the 10 categories for their relative weight.

The ESGC score can be considered an extension of the previously illustrated ESG score. The ESGC score integrates the ESG score with 23 controversial topics captured from global media sources. "The main objective of this score is to discount the ESG performance score based on negative media stories." (Refinitiv, 2022, p. 7).

Chapter 4: ESG investment strategies

4.1 Introduction to Investment strategies

Having broadly defined the history and definition of what is meant by ESG in today's society, and having classified and described the most important actors involved in the rating procedure, It is now important to understand how companies or individual investors decide to integrate these elements into their portfolio or how they use ESG data, thus defining the strategies behind their intentions. In the world of investors, it is a common idea that in order to operate at best in the market, minimizing the risk of failure, an optimized portfolio must necessarily be built by multiple equity components, that is, it must be diversified. The main basis of this diversification is the division of risk, in fact it is also called diversification of risk. To calculate the risk of a portfolio is calculated the probability of default of its components, then multiplied by the weight that the component has in the portfolio. In the wake of this need for diversification, therefore, the inclusion of shares, bonds, or derivatives with a good ESG rating becomes more important. Because of its nature, a good ESG rating presupposes that the share has a lower risk as well as other characteristics, and therefore its inclusion in the portfolio means that the entire risk of the portfolio is reduced or mitigated. From this idea some actors have therefore developed some particular strategies of investment for a correct optimization of the portfolios and a consequent reduction of its risk.

In addition to that, there are also other reasons that have pushed investor to take more into account ESG factors in their investment strategies. In fact, as Eccles, et al. (2018) underline the most recent changes in directive, both in US and Europe, require an increasing number of companies to provide ESG disclosures. ESG disclosure can be used to maximise profit, as many academics have found a positive relationship between ESG factors and corporate financial performance correcting the common belief that ESG investing sacrifices returns (Griffin & Mahon, 1997).

These, combined with the growing availability of ESG standards and measures brings to the development of what it's called sustainable investment strategies. The sustainable approach in investing comprises a set of choices that each public or

private investor should apply in the selection of their financial components (Van Duuren, et al., 2016).

Among the many in the vast literature, it is interesting to analyse 6 different strategies, considering that positive screening and best-in-class investment can be considered either as a single strategy or as two separate strategies (EUROSIF, 2018):

1. negative screening
2. positive screening, and best-in class investment
3. Engagement/active ownership
4. Thematic Investment
5. ESG integration
6. Norm-Based screening

Furthermore, in order to build a general picture of the decisions behind the choices made by investors or investment funds in considering ESG factors, it is also interesting to divide the investment process into two different phases: the pre-investment phase, where all the analytical and decision-making processes pre-investment take place; and the post-investment phase, where there are all those strategies implemented after ESG portfolio introduction (Busch, et al., 2022).

4.2 Pre-Investment Phase

4.2.1 Negative screening

The strategy called negative screening is the first strategy mentioned in the literature; in fact, it is also the first to be debated, with its introduction with the Pioneer Fund in 1928.

Negative screening is a strategy that aims to exclude a certain investment from one's stock portfolio. After a period of analysis, in fact, the investor chooses to exclude investments that do not meet certain sustainability criteria, precisely represented by the previously analysed ESG ratings.

Typically, this exclusion falls on investments in markets that may be considered "unethical," or not morally in line with the community mindset. Thus, stocks or groups of stocks linked (kumar, et al., 2016):

- to companies that do not aim to reduce air pollution,
- that do not take care of their employees,
- on indices of underdeveloped or developing countries where there is a lot of corruption or environmental standards are not met can be excluded from equity portfolios.

An example of such a strategy may be to exclude investments:

- In companies related to the production or sale of weapons or explosive materials;
- In companies Related to the production or marketing of pornographic materials; and
- In companies Related to the production or marketing of alcohol/tobacco
- In companies that conduct animal testing.
- In companies connected to the world of gambling;

As can be seen from the examples, not only companies directly responsible for these ethically unsound activities are excluded; however, all those companies or groups that perhaps belong to the same supply chain are also included (EUROSIF, 2021).

4.2.2 Positive screening

The positive screening strategy represents the opposite of the previous negative screening, in fact this one aims at the inclusion in one's portfolio of stocks or its derivatives that have certain sustainability characteristics (Figure 16).

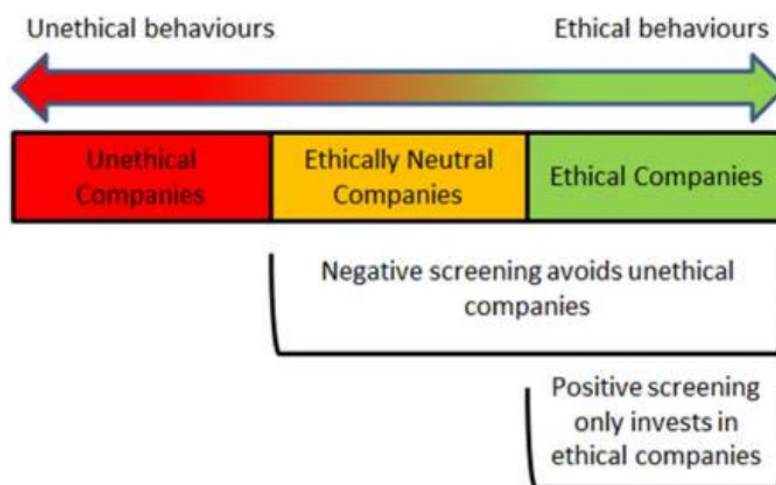


Figure 16: positive and negative Screening, Source: (Rayer, 2019)

According to this strategy, then, investors aim to incorporate companies, groups of companies, or indices that are considered ethical (Figure 16) in that they support policies of Environmental, Social, or governance improvement, and for this reason are characterized by a good ESG rating.

The Best-in-class strategy, on the other hand, is a particular strategy that can be categorized as a subcategory of positive screening, in because it aims to include certain stocks in its portfolio, however, the diversity resides in the type of these stocks. In fact, investors, from the perspective of best-in-class, choose a sustainability theme on which to direct their attention, which therefore can be Environment, Social or Governance, and based on the chosen theme they go to the various rating agencies (described in the previous chapter) to research the rating classification.

Once the investor knows the ratings of the companies that focus on the theme he or she is interested in, the investor will then choose to incorporate into his or her portfolio only the stock or stocks that have obtained the best rating compared to the other peers in the sector to which he or she belongs.

4.2.3 Norms-Based Screening

Under this strategy, investor choices are the result of a screening process aimed at assessing the compatibility of screened companies with the minimum standards issued by different international bodies.

The reference standards on which the investor's choice is focused, therefore, are those referring to respect for issues on environmental, social and governance criteria, thus adhering to global norms on environmental protection, human rights, labour standards and anti-corruption.

The main standards or norms used for this strategy will be, for example, the OECD guidelines, the Un treaties, the Security Council sanctions, the UNGC's standards, Universal Declaration of Human Rights, and any other treaties, laws or norms imposed nationally or internationally by the most important legislative bodies (EUROSIF, 2021).

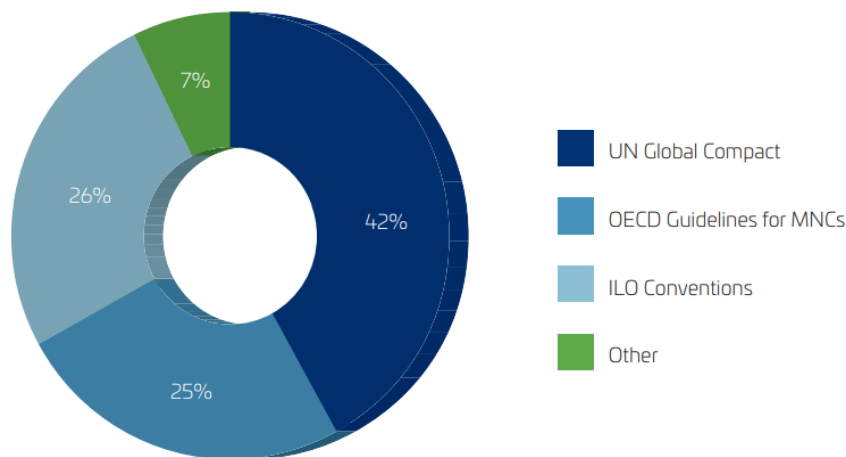


Figure 17: Application of Norms as part of Norms-Based Screening, Source: (EUROSIF, 2018, p. 21)

As can be seen from Figure 17, in the pre-investing phase of the norms-based strategy, investors mainly prefer an analysis of the application of norms issued by the UNGC (42% of investors).

Norms-based screening strategy can both be considered as a stand-alone strategy and at the same time can be combined with other strategies. In fact, as a result of its own analysis, the investor will consider whether or not to undertake the investment based on the consistency found with current norms. In case these are not met, the investor will choose whether to undertake an engagement strategy or an exclusion strategy, thus excluding this investment from the portfolio (Sahut & Pasquini-Descomps, 2015).

4.2.4 ESG integration

ESG integration was first defined by the European Sustainable Investment Forum (EUROSIF) in 2014 as “the explicit inclusion by asset managers of ESG risks and opportunities into traditional financial analysis and investment decisions based on a systematic process and appropriate research sources.” (EUROSIF, 2014, p. 17) The outcome of this research should then be used by investors to build a diversified portfolio.

The EUROSIF made a step further in 2014 and classified ESG integration into three categories based on the degree of actions performed by the portfolio managers using this strategy:

1. Non-systematic ESG integration consists of basic ESG research made available to the users.

2. Systematic inclusion of ESG research: analysts and financial managers actively use ESG information in forming their strategy.
3. Mandatory investment constraints: when, due to a combination of factors, investors are required to include this information (EUROSIF, 2014).

The use of this strategy has systematically grown in the last years (EUROSIF, 2018).

Like thematic investing and screening, ESG integration consists of 4 main steps: first there is a qualitative analysis to gather relevant information and then a quantitative analysis to assess the influence of the new ESG investment in the existing portfolio. The third step is to take the proper investment decision to buy, hold or sell. Eventually the last step is to update the investment analysis for future investment choices (Sloggett, et al., 2016).

Among all possible strategies ESG integration has been labeled as the less stringent “since it does not constrain portfolio managers to systematically incorporate ethical and social criteria in their investment decision” (Revelli, 2016, p. 3).

The main problem associated with ESG integration lies in its definition that is very general. There is in fact a “significant lack of clarity in the parameters governing the integration of ESG factors, [and] it remained very difficult to assess the extent to which strategies that fall under the same denomination can in fact be comparable.” (EUROSIF, 2021, p. 74). Also, Sloggett et al. (2016) deal with this issue and identify the “lack of standards in both ESG data and how it is used” (Sloggett, et al., 2016, p. 130) as one of the main real barriers to ESG integration. Lastly Van Duuren, et al. (2016) pointed out how integration may result in additional costs and in a time-consuming activities.

On the other hand, looking at possible advantages connected with ESG integration many studies have shown the existence of a positive relationship between ESG and profit (Griffin & Mahon, 1997). In addition to that, BlackRock in one of its recent research report on sustainability states that there is “one-size-fits-all approach” to achieve integration and that the approach style should be flexible (Blackrock Investment Institute, 2019, p. 14).

4.2.5 Thematic Investment

Moving on with the analysis of investment strategies that integrate ESG factors into equity portfolios, we find the strategy called Thematic Investment.

An investment of this kind aims to build a specific portfolio of stocks, indices or other financial derivatives that can capture and predict positive market trends. For this very reason, investments made with this strategy have a medium- to long-term time period.

The themes that are therefore taken into consideration for this type of investment are also commonly called macro-trends and are based precisely on the investor's ideas or values, and therefore for this reason it is a somewhat subjective and customizable strategy. The themes most considered by users of this strategy, for example, are (Busch, et al., 2022):

- Alleviating poverty
- Gender and diversity
- Alternative/clean energy

Moreover, in addition to the previous themes, this investment strategy has recently been expanded by the study of many authors, who also propose an extension of the previously introduced categories. In fact, additional macro-themes are introduced, called Sustainable Mega-Trends, which unlike the previous ones are of a larger size (Busch, et al., 2022).

The topic of Macro-trends, however, is not entirely new in the investment world; in fact, just consider that they first appeared with the 1982 writings of John Naisbitt (Lubin & Esty, 2010), however they are constantly being revisited. Some of the most important Megatrends considered are for example:

- Climate change
- Demographic trends
- Technological Change

The identification of megatrends in which to invest is crucial to the achievement of the so-called "double return," i.e., the financial return and the sustainable return that leads to a positive contribution to society as a whole and the surrounding environment.

Therefore, the fund manager will have to ensure not only the appropriateness of the chosen theme in terms of sustainability but also the possibility that it provides an attractive future financial return prospect. To this end, drivers-trends can bring growth over time in terms of return and sustainability of the stocks or equity derivatives in which capital is invested (Busch, et al., 2022).

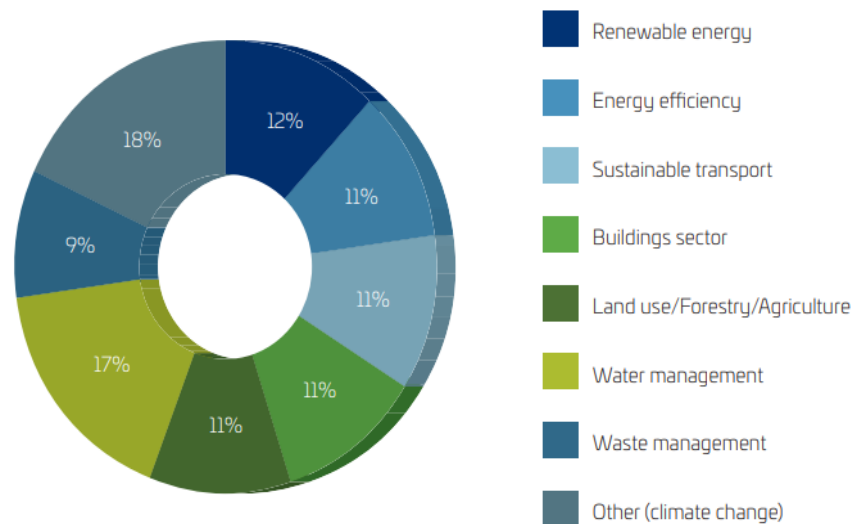


Figure 18: Sustainability Themed Investments, Source: (EUROSIF, 2018)

Once the meanings and motivations behind each category are understood, it is also interesting to note which categories are most under investors' attention. For this reason, the EUROSIF report analyses and groups data for the year 2017 to graphically represent investors' preferences with respect to each category globally (Figure 18).

It can be seen from Figure 18 that the two most frequently used categories of themes for investment strategies are climate change and water management, while the other categories have an almost similar weighting.

The implementation of this strategy thus consists of two phases: in the first phase, the investor will choose a trend or Macro-trend to focus on, and in the second phase they will then carry out their own qualitative, comparative and quantitative analyses about which companies they can target for the investments.

4.3 post-investment strategy

4.3.1 Engagement/active ownership

While the previous paragraphs indicated real investment strategies, the so-called engagement strategy, on the other hand, attention is placed also on the second phase of the investment process, namely the post-investment phase.

This phase implies an active behaviour by investors who are attentive and informed about the issue of ESG.

As mentioned earlier in the opening chapter, there is an increasing need for a change of mindset and, above all, a behavioural change of those charged with governance inside companies in order to increase sustainability globally, as required, for example, by the goals set by the UN in its "2030 Agenda." (Diaz-Sarachaga, et al., 2018).

Precisely for this reason, the engagement/active ownership strategy is considered under a moral perspective rather than a purely economic/financial one. In this context active participation has two different meanings; the first meaning implies power, i.e. that guaranteed as a shareholder while the second characteristic is the willingness to apply that power for a specific purpose.

A shareholder is in fact a public or private entity that has the ownership; among the powers held by a shareholder there is the voting right. This specific right is the most important under the active ownership strategy because in this way shareholders have the power to decide on matters of ordinary or extraordinary company administration.

Active ownership is thus defined as a means by which investors can directly influence companies, markets and their related economies, and indirectly influence society as a whole. On the other hand the voting right presents some limits because influence shareholders' can exercise depends on the number of shares they have.

Investor pursuing this type of strategy will first carry out a monitoring activity, in which documents and reports made available by companies are analysed in order to understand their performance. After that, follows engagement phase where the investor, on the basis of the information acquired in the previous screening and using the voting power, will engage in implementing real strategies of corporate change in order to improve company's ESG performance. Such changes can be made on an

individual level if the investor owns enough shares to guarantee victory in a vote. If this is not the case, the shareholder may opt for a collective change, whereby through coordination with other shareholders, approval of the proposed change is achieved; in this case it is referred to as “collaborative engagement” (Wagemans, et al., 2018).

4.4 Regional development and growth of sustainable investment strategies

After providing an overview of the investment strategies most frequently implemented by investors taking into account ESG factors, it may be interesting to see the different adoption them depending on the geographical area. To make this distinction, it is taken as a reference the analysis carried out by the Global Sustainable Investment Alliance. In the report made available by this agency, statistical data on sustainable investment strategies implemented around the world are provided for the year 2020.

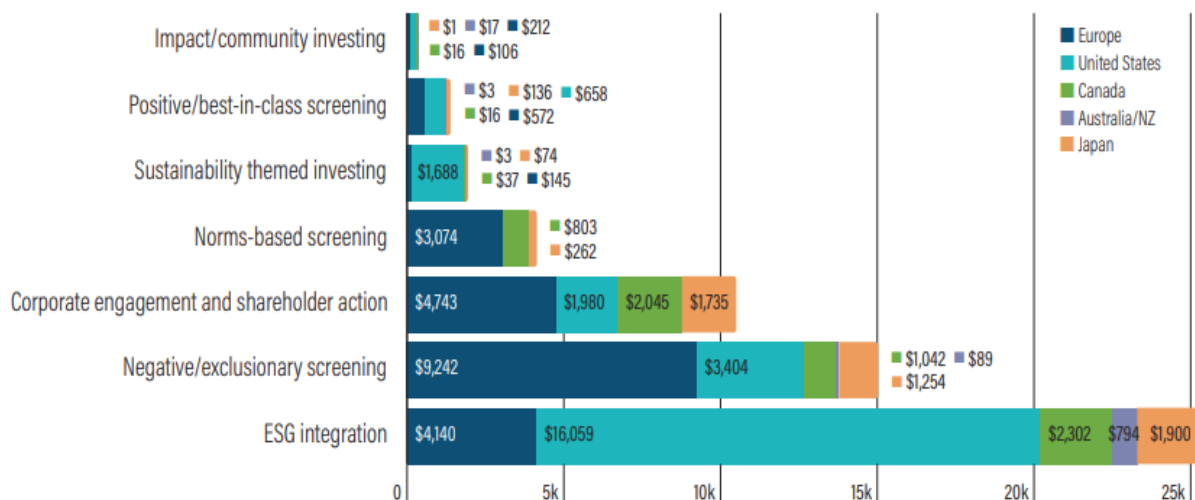


Figure 19: Sustainable investing assets by strategy & region 2020, Source: (Global sustainable investment alliance, 2021, p. 11)

From Figure 19 it can be seen that the strategy most frequently used in 2020 was ESG integration with a combined USD 25.2 trillion in assets. The country that made most use of this strategy was the United States, with sustainable investing assets around USD 16 trillion (about 64% of total). In second place of the most used strategies there was negative screening, also called exclusionary screening (USD 15.9 trillion), which was most widely used in the European region (about 58% of the total). In the third place there was corporate engagement and shareholder action (USD 10.5 trillion), again mostly used in Europe (around 45% of the total).

It should also be noted that the impact/community investment strategy is present in Figure 19 but has not been explored in depth in the previous paragraphs due to its very limited use by investors worldwide as it is clear from the figure above it the least used strategy globally (USD 0.3 trillion). To conclude, therefore, it should be emphasized that the United States, Canada, Australia and Japan favor the use of the ESG integration strategy, while Europe, on the other hand, prefers the Negative Screening strategy (Figure 19)

After illustrating investor preferences by geographic distribution, the figure below shows how investor preferences have changed over the years between 2016 and 2020.

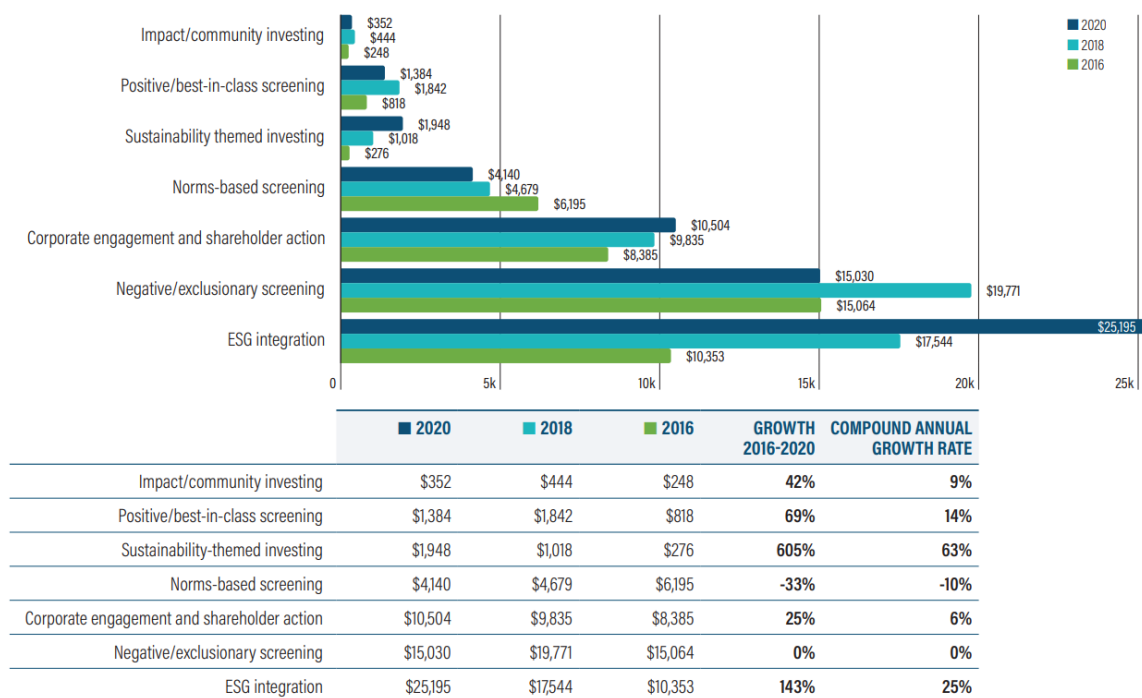


Figure 20: Global growth of sustainable investing strategies 2016-2020, Source: (Global sustainable investment alliance, 2021)

Before focusing on the starting the description on this growth, it should be emphasized that the values expressed represent the asset values and they are expressed in billions of US dollars.

Looking at Figure 20, it is immediately visible that the most significant growth in absolute terms occurred in 2020 for the ESG Integration strategy; in fact, there is an increase from 17,544 billion in 2018 to 25,195 billion in 2020. Considering the entire time span from 2016 to 2020, this strategy saw an increase in its application of 143%.

On the other hand, there was a sharp decline in the adoption of the Negative Screening strategy; in fact, in two years, from 2018 to 2020, this strategy saw a decrease of almost 5000 billion dollars, which meant that this strategy wiped out the progress made from 2016 to 2018 (2016-2020 growth rate is 0%).

However, the strategy that has seen the most growth compared to the other strategies is Sustainability-themed investing. This in fact recorded a growth rate of 605% over the 4 years considered.

The only strategy of the 7 strategies in Figure 20 that experienced a negative growth rate is Norms-Based screening. This in fact had a -33% growth rate in the years between 2016 and 2020.

Chapter 5: Sustainable investment and financial performance

5.1 Literature review

In this work so far, we introduced the notion of sustainability, how it is measured using all the rating developed by well-known data provider and how investors can take advantage of them for the development of different investment strategies.

Having reached this point, the next step is to investigate whether investors can achieve better financial performance by integrating sustainability elements into the investment strategy. The main goal of firms operating in a complex global environment is to create value for stakeholders and investors and that's why several researchers focused their attention on the link between sustainability and competitive advantage (Lopez, et al., 2007).

Beginning with a broad literature review on the topic a good starting point can be the study conducted by Statman in 2000. In this study the performance of the Domini Social Index (DSI) is compared with that of S&P 500 for the period that goes from 1990 to 1998. The DSI is a capitalization-weighted index built on the S&P 500 using the strategies of exclusionary and qualitative screening. In practice, the DSI consists of 400 stocks where 250 of them, are taken from the S&P500 index; 100 of them are non-S&P 500 stocks and 50 are non-S&P 500 companies' stocks with distinguished social characteristics. The findings were that DSI beat the performance of S&P 500 index both when performance was measured by raw returns or by risk-adjusted returns, but the difference was not statistically significant. Moreover, the DSI showed to be slightly riskier than S&P 500 (Statman, 2000).

As a support for Statman findings also Derwall et al (2005) in their study concluded against the widespread idea that SRI led to lower portfolio performance. The researchers adopted a different approach from the one commonly used. Usually, studies focused on conventional fund performance but, according to Derwall et al (2005), in this way results may be biased by quantitative factors. In their study in fact, they built two mutually exclusive diversified stock portfolios of U.S. companies, a normal portfolio and an "eco-friendly" one. The Eco-friendly one, was constructed from the idea "the ratio of

the value a company adds [...] and the wastes the firm generates resulting from the creation of that value” (Derwall, et al., 2005, p. 7). Eco-friendly companies were chosen between that companies with the highest Innovest Strategic Value Advisor ratings, using the best-in-class strategy. Portfolio’s returns were observed for the period between 1995 and 2003. In this study eco-friendly portfolio outperformed the other one with low-ranked companies. In their conclusions authors suggest also that investors should overcome their skeptical attitude toward SRI (Derwall, et al., 2005).

Besides the group of studies that found a positive relationship between SRI and performance, there is a second larger group of studies, that conclude for a neutral relationship between the two.

Starting from Schroder in 2007, the researcher concluded that “SRI stock indices do not exhibit a different level of risk-adjusted return than conventional benchmarks” (Schröder, 2007, p. 331). In this study authors choose the using of indices instead investment funds because, as Derwall already stated, portfolio managers ability can mitigate or bias the effect of SRI screening criteria. To reach his conclusion the author observed the performances of 29 SRI equity indices published by 11 agencies, giving a world-wide coverage of indices build with different screening procedures. Those performances were compared with conventional benchmark indices (Schröder, 2007).

The conclusions of Schroder (2007) were supported also by Jain, et al. (2019). Their paper comparatively analyses the returns of Thomson Reuters/S-Network global indices¹ and their reciprocal alternatives² of usual markets for the years 2013-2017. Performance was measured using daily closing prices during the 5 years. The authors conclude that “there is no significant difference in the performance between sustainable indices and the traditional conventional” (Jain, et al., 2019, p. 15) but it seems that “there is a flow of information between the two sets of indices and hence, these markets are integrated with each other”. Investors can use this finding in the perspective of diversifying their portoflio (Jain, et al., 2019).

In this respect also Ur Rehman, et al., (2016) conclude that there are no significant differences in the returns between ESG indices and non-ESG indices. Their

¹ Index used: Developed Markets ESG index, Emerging Markets ESG index, US ESG index and Europe ESG index.

² Index used: MSCI World index, MSCI All Country World Equity index, MSCI USA index, MSCI Europe index, MSCI emerging markets index and MSCI Asutralia Far East Index.

focus was on eight³ Asian countries, rather than Europe or US, covering the time period from 2002 to 2014. The indices used are the Dow Jones Sustainability Index (DJSI) and the MSCI Environmental Social and Governance Indices compared with the conventional ones. Financial performance is measured using average returns of each index. The mean-variance analysis shows no statistical difference between the average return of the DJSI or MSCI ESG index compared to the “conventional” MSCI index. With respect to risk, socially responsible indices have a significantly higher level of total risk represented by the variance of returns. The authors assume that the higher volatility of asiatic markets “may reflect a higher degree of information asymmetry resulting from the more sporadic arrival and the incomplete nature of SR information typical of emerging market” (Ur Rehman, et al., 2016, p. 454). In their conclusion authors also add that investors’ preferences and risk perceptions of SR stocks may vary from country to country within the Asian markets due to behavioural or cultural factors not considered in their work (Ur Rehman, et al., 2016).

A similar study that concludes on a possible contry effect is the one of Cunha, et al. (2020). Authors analyse performance of 1 global index, 3 regional indices and 1 country-level index from the DJSI group and for each of them also the respective benchmark was considered. Performances were measured again using classic return and risk indicators for the period 2013-2018. Looking at classic return and risk indicators, the authors find that in the total period the sustainable indices underperformed, showing lower returns and higher risk. During the observation period the region where the worst results were registered was Asia-Pacific, signaling that sustainability is not yet a significant focus of investor attention. On the contrary, the best performances were registered in Europe where the sustainability index outperformed its benchmark in terms of return with a similar risk. Lastly, also in US risk and return were similar between the two.

Another interesting finding was that in the first years of observation, from 2013 to 2015, sustainability indices presented lower return while in the last ones, 2016-2018, it was the other way around. Authors postulate that this could signal that “in periods of crisis,

³ Japan, Korea, China, Taiwan, India, Hong Kong, Thailand, and Malaysia.

sustainable investments present inferior return-risk profiles” (Cunha, et al., 2020, p. 689).

After this first investigation, authors conduct also an analysis based on performance measures such as Jensen or Sharpe. Jensen’s alpha suggest that there is a chance to earn excess risk-adjusted returns in Europe, emerging markets and US while this is not the case for Asia-Pacific. Overall, authors conclusion is that “sustainable investment performance is still heterogeneous worldwide, but there is a promising opportunity for investors to obtain superior risk-adjusted returns in certain regions” (Cunha, et al., 2020, p. 694).

Looking now the studies where a negative relationship is shown between socially responsible investments and performance, a relevant one is that of Geczy, et al. (2005). Here researchers first created a broad list of 900 mutual funds including only funds that invest in equity. After doing so, twenty screening criteria were considered. In case one or more of these screening criteria was actively used by fund managers, and finally the fund was classified as socially responsible. The timeframe of this study is one of the longest publications that could be found, and records a period 1963 to 2001.

Conclusions suggest that SRI constrains result in diversification costs and overall higher costs for investors applying the three-factor model of Fama and French that is composed by:

1. the size of firms
2. book-to-market values
3. excess return on the market

The higher cost is thus paid by those who allocate most of their portfolio in socially responsible fund or investors who rely heavily on individual funds’ track records to predict future performance.

The last study that we consider in this literature review is the one conducted by Lopez, et al. (2007) using the Dow Jones Sustainability Index. DJSI captures the multidimensional nature of sustainability. It takes the best 10% firms from the DJGI using a best-in-class strategy criteria. The research focuses on two different groups of 55 European firms: firms in the first group belong to the DJSI while firms in the second one do not fulfill the criteria to be part of this index. The period of study goes from 1998 to 2004 while the choice to focus only in European firms was driven by the fact that in

Europe there is a similar degree sustainability practices among countries. Firm's performance was measured using profit before tax variation that is the dependent variable while the independent variables are a dummy for CSR and revenue growth variation. The results show that in the short term, years from 1999 to 2001, there is no difference in the performance of sustainable firms compared with the others while in the long term, years 2002 to 2004, there is a negative relation between CSR and performance. Authors suggest this is due to the reallocation costs of resources to sustainability disclosure, training, pollution prevention, recycling, etc. They also add that this negative impact on performance is self-correcting, since the difference decreases over time (Lopez, et al., 2007).

To facilitate the reader's understanding of this literature review, a summary table (Table 1) has been constructed, in which the articles analysed in this section are listed (first column). Respectively the three columns contain the reference years of the studies carried out, the indices used by the authors for their study, and finally, in the last column there is the final result.

The result is expressed on three ratings:

- Positive = the study shows that sustainable investments have a higher return than "standard" investments
- Neutral = the analysis shows that the performance of traditional investments and sustainable investments are similar.
- Negative = The performance of sustainable investments is lower than that of traditional investments

AUTHORS	PERIOD OF ANALYSIS	INDEX	CONCLUSION
Statman (2000)	1990-1998	Domino Social Index VS S&P500	Positive
Derwall et al., 2005	1995-2003	Eco-friendly portfolio of US firms VS Low eco-friendly ranked portfolio of US firms	Positive
Michael Schroder (2007)		29 international SRI equity indices (including DJSI, FTSE4Good, KLD, ETC) and their comparables	Neutral – “SRI stock indices do not exhibit a different level of risk-adjusted return than conventional benchmarks.”
Mansi et al (2019)	2013-2017	Developed markets (no US) ESG index, Emerging markets ESG index, US large-cap ESG index, Europe ESG index, VS The MSCI world index, the MSCI All Country World Equity index, the MSCI USA index, the MSCI Europe Australasia Far East index, the MSCI Emerging Markets index, the MSCI Europe index	Neutral – no significant difference in the expected returns
Ur Rehman et al. (2016)	2002-2014	DJSI and MSCI for 8 Asian countries VS Conventional MSCI	Neutral
Geczy et al. (2005)	1963-2001	Portfolio of socially responsible mutual funds VS Portfolio of profit oriented mutual funds	Negative
Lopez et al. (2007)	1998-2004	55 European firms included in the DJSI VS 55 European firms included in the DJGI	Negative
Cunha et al. (2020)	2013-2018	DJSI Global, Asia Pacific, Emerging Markets, Europe, and US VS DJ Global, Asia/Pacific, Emerging Markets, Europe and US	Performance is heterogeneous worldwide

Table 1: Summary of the literature review

5.2 MSCI

5.2.1 Introduction to MSCI

Continuing in the objective of detecting whether there are substantial differences between sustainable investments based on ESG criteria and "traditional" investments, it was chosen, also considering the studies of Derwall et al. (2005) previously described, to carry out a comparison between ESG indices and "traditional" indices.

As indices to be compared, therefore, those developed by the MSCI agency, which is among the most engaged in the creation of ESG indices, and whose criteria for the formation of ESG ratings have been extensively described in Chapter 3, were chosen.

5.2.2 Global index comparison

Specifically, we chose to begin by comparing two global indices, namely the MSCI ESG World Leaders index with regard to the ESG category, and the MSCI World index as its “parent” index.

Therefore, a comparison of the performance of the two indices will be initially proposed below.

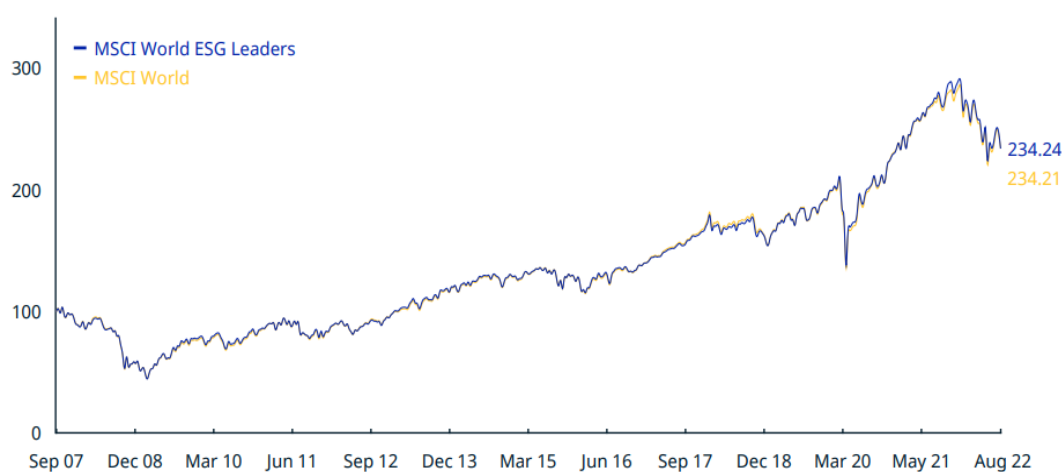


Figure 21: indices performance (USD), Source: (MSCI b, 2022, p. 1)

The Figure 21 shows the cumulative performance trends, which the two global indices MSCI World ESG Leaders (starting from 2007 data reworked with a base of 100 to allow comparison with the “parent” index) and MSCI World, have undergone over the period from 2010 to 2022.

It can thus be easily observed how over these 10 years the performance of the two stocks is almost the same; to get a broader picture, however, a more in-depth performance analysis will be needed.

For this reason, Figure 22 gives for example, with regard on gross returns, a clear picture made up of the performance observed over different time periods.

Thus, from these data, it can be seen that since August 2010, the calculated 1-month, 3-month, and 1-year returns with regard to both securities are found to be negative returns, while the annualized returns calculated from 3 years onward are found to be positive.

The return calculated by annualizing the return for the period from September 28, 2007 to August 31, 2022, turns out to be 5.87 % for the MSCI World ESG Leaders index and 5.86 percent for the MSCI World index, thus a nearly equal result.

INDEX PERFORMANCE – GROSS RETURNS (%) (AUG 31, 2022)									
	1 Mo	3 Mo	1 Yr	YTD	ANNUALIZED			Since Sep 28, 2007	
					3 Yr	5 Yr	10 Yr		
MSCI World ESG Leaders	-5.07	-6.16	-15.59	-19.30	9.16	8.59	10.11	5.87	
MSCI World	-4.14	-5.43	-14.67	-17.50	9.30	8.41	10.05	5.86	

INDEX RISK AND RETURN CHARACTERISTICS (SEP 28, 2007 – AUG 31, 2022)										
	Beta	Tracking Error (%)	Turnover (%) ¹	ANNUALIZED STD DEV (%) ²			SHARPE RATIO ^{2,3}			Since Sep 28, 2007
				3 Yr	5 Yr	10 Yr	3 Yr	5 Yr	10 Yr	
MSCI World ESG Leaders	0.99	1.29	8.14	18.85	16.65	13.61	0.53	0.51	0.72	0.38
MSCI World	1.00	0.00	2.53	19.08	16.93	13.81	0.53	0.49	0.71	0.38

¹ Last 12 months ² Based on monthly gross returns data ³ Based on NY FED Overnight SOFR from Sep 1 2021 & on ICE LIBOR 1M prior that date

Figure 22: Data performed by MSCI World ESG Leaders index and MSCI World from 28-09-2007 to 31-08-2022, Source: (MSCI b, 2022, p. 2)

Also, from the risk point of view, the two indices can easily be seen, by going to observe for example the annualized standard deviation, calculated on gross returns monthly, that the two values are very similar. The annualized standard deviation of the MSCI World ESG Leaders index, should be emphasized that it turns out to be lower for all of the three periods considered: at 1 year, at 3 years and at 10 years, which implies a lower volatility of the stock than its “parent” index. Finally, looking at the Sharpe Ratio of the two indices (the risk-free rate in all calculations is the ICE LIBOR 1M USD) this confirms that are moving in the same direction; in fact, for almost all the periods taken into disregard they are almost the same, while if taken for the entire time frame, the two indices coincide (0.38%), which indicates an over-performance of the two indices compared to a “risk free” portfolio, equal in percentage terms.

Having thus found that these two indices constructed by MSCI have during the period of interest an almost equal return, similar volatility, and an identically Sharpe ratio, it can be seen that these results go against the conclusions of the studies of Statman (2000) and Derwall et al. (2005) by going instead to corroborate the studies of Schroder (2007), Mansi et al (2019), and Ur Rehman et al (2016).

A final important figure to observe from Figure 22 is the tracking error (%), which is a measure of how well a fund, or in this case an index, is tracking the benchmark during

the investment period itself. From the data collected, the tracking error for MSCI ESG Leaders index, turns out to be 1,29%;

this result is further evidence that the index based on ESG factors, has similar behaviour to its “parent” index.

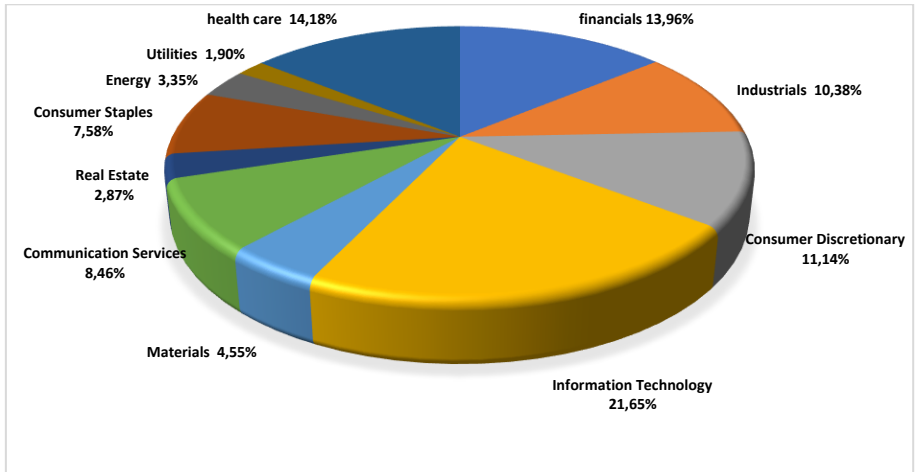


Figure 23: Sector weights of MSCI World ESG Leaders Index, Source (MSCI b, 2022)

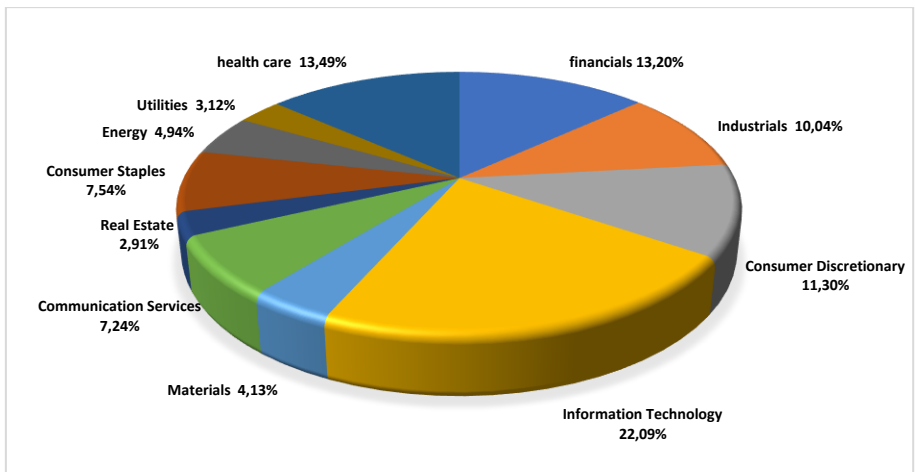


Figure 24: Sector weights of MSCI World Index, Source (MSCI a, 2022)

Moving thus deeper, it is interesting to understand the composition of these two indices. MSCI classifies the companies included in its indexes into 11 different sectors they belong to. These sectors are:

1. Financials
2. Industrials
3. Consumer Discretionary
4. Information Technology

5. Materials
6. Communication Services
7. Real Estate
8. Consumer Staples
9. Energy
10. Utilities
11. Health care

With the data thus collected from MSCI's reports for the two indices examined, the two graphs, contained in Figures 22 and 23, were therefore constructed. These represent the percentage weight that the various sectors have on the two indices.

From these representations it can be easily understood, that MSCI, in the construction of its MSCI World ESG Leaders Index, based on 713 companies, has maintained a weight per sector that is found to be roughly equivalent. Indeed, from a first look it is evident that the 11 slices corresponding to the various sectors, have a similar size.

The Information Technology sector is the sector that has the greatest weight for both indexes; in fact, it has a weight of 22,65 percent for MSCI World ESG Leaders Index, while for its counterpart MSCI World Index the weight is slightly lower, that is 22,09%.

Only the Communication Services, Energy and Utilities sectors have a weight differential greater than 1%. In the case of Communication services, in fact, it appears that for the index based on ESG factors, this sector has a 1.22% greater weight than its counterpart. In the case of the other two sectors, however, they have greater representativeness in the MSCI World index, respectively 1.59% and 1.22% higher than the index based on ESG factors (Figures 22 and Figure 23).

It is interesting now to look at the performance behaviour of the individual sectors of the companies included in the two indexes. To conduct this analysis, therefore, the performance data for each sector sub-index of the MSCI World index were put together

and then compared with the data for the sector sub-indices of the MSCI ESG World Leaders index, resulting in Tables 2 and 3.

index name	INDEX PERFORMANCE — GROSS RETURNS (%)								
	1 Mo	3 Mo	1 Yr	YTD	3 Yr	5 Yr	10 Yr	GROSS RETURNS from begin	
MSCI World Utilities ESG Screened 20-35 Select	-2.96	-5.21	-7.49	-10.33	2.94	2.98	3.80	4.37	Since May 31, 2012
MSCI World Utilities	-1.82	-4.37	-2.03	-4.65	3.05	3.50	4.54	4.78	Since May 31, 2012
MSCI World Information Technology ESG Leaders 20% Capped	-8.07	-8.66	-24.32	-28.78	12.07	15.67	na	16.51	Since Nov 30, 2015
MSCI World Information Technology	-5.94	-4.11	-20.17	-25.23	17.36	17.04	na	17.77	Since Nov 30, 2015
MSCI World Industrials ESG Screened 20-35 Select	-7.98	-6.42	10.80	-7.98	14.67	10.35	na	11.02	Since May 31, 2012
MSCI World Industrials	-6.77	-5.66	11.78	-6.77	12.30	10.07	na	11.24	Since May 31, 2012
MSCI World Financials ESG Screened 20-35 Select	0.75	-1.62	30.55	0.75	13.62	9.72	na	11.69	Since May31, 2012
MSCI World Financials	0.59	-1.84	30.65	0.59	13.22	9.36	na	11.64	Since May31, 2012
MSCI World Energy ESG Screened 20-35 Sel	1.40	-9.23	49.93	32.16	12.09	5.88	2.12	3.20	Since May31, 2012
MSCI World Energy	1.73	-7.60	54.02	34.79	12.44	7.12	2.65	3.78	Since May31, 2012
MSCI World Consumer Staples ESG Screened 20-35 Select	-2.99	-1.39	-4.27	-9.88	3.69	5.88	7.66	8.36	Since May31, 2012
MSCI World Consumer Staples	-2.78	-2.44	-4.11	-8.85	4.66	5.13	7.46	8.15	Since May31, 2012
MSCI World Materials ESG Screened 20-35 Select	-5.60	-1.42	11.25	-5.60	14.47	9.89	na	8.07	Since May31, 2012
MSCI World Materials	-4.51	0.25	12.54	-4.51	15.00	10.51	na	8.04	Since May31, 2012
MSCI World Consumer Discretionary ESG Screened 20-35 Select	0.75	-1.62	30.55	0.75	13.62	9.72	na	11.69	Since May31, 2012
MSCI World Cons Discr	0.59	-1.84	30.65	0.59	13.22	9.36	na	11.64	Since May31, 2012
MSCI World Communication Services ESG Screened 20-35 Sel	-4.30	-9.20	-34.72	-29.34	1.54	1.43	2.44	3.40	Since May31, 2012
MSCI World Communication Services	-4.39	-9.03	-34.65	-29.26	1.61	1.54	2.51	3.46	Since May31, 2012
MSCI World Health Care ESG Screened 20-35 Select	-7.52	-4.19	9.81	-7.52	14.11	13.42	na	13.92	Since May31, 2012
MSCI World Health Care	-7.39	-4.12	9.78	-7.39	13.86	13.28	na	13.82	Since May31, 2012

Table 2: Indices performance, gross returns (%) (Aug 31, 2022), Source: revised data provided by MSCI

index name	INDEX RISK AND RETURN CHARACTERISTICS										
	Beta	Tracking Error (%)	Turnover (%)	ANNUALIZED STD DEV (%)			SHARPE RATIO				
				3 Yr	5 Yr	10 Yr	3 Yr	5 Yr	10 Yr	SHARP RATIO from begin	
MSCI World Utilities ESG Screened 20-35 Select	1.01	2.79	9.36	17.21	14.35	13.14	0.22	0.20	0.29	0.34	Since Sep 28, 2007
MSCI World Utilities	1.00	0.00	1.89	16.40	13.95	12.74	0.23	0.23	0.35	0.37	Since Sep 28, 2007
MSCI World Information Technology ESG Leaders 20% Capped	0.94	4.37	8.66	22.65	20.51	na	0.59	0.76	na	0.86	Since Nov 30, 2015
MSCI World Information Technology	1.00	0.00	2.22	23.20	21.13	na	0.78	0.80	na	0.89	Since Nov 30, 2015
MSCI World Industrials ESG Screened 20-35 Select	0.98	1.95	4.74	19.64	17.52	na	0.75	0.58	na	0.73	Since May 31, 2012
MSCI World Industrials	1.00	0.00	3.57	20.43	18.16	na	0.63	0.55	na	0.74	Since May 31, 2012
MSCI World Financials ESG Screened 20-35 Select	1.00	0.90	3.94	23.41	20.03	na	0.63	0.51	na	0.69	Since May31, 2012
MSCI World Financials	1.00	0.00	2.32	23.47	20.08	na	0.61	0.49	na	0.69	Since May31, 2012
MSCI World Energy ESG Screened 20-35 Sel	0.99	2.36	56.45	35.64	30.60	24.24	0.48	0.30	0.18	0.22	Since May31, 2012
MSCI World Energy	1.00	0.00	5.44	36.13	30.76	24.48	0.49	0.34	0.20	0.24	Since May31, 2012
MSCI World Consumer Staples ESG Screened 20-35 Select	0.98	1.74	8.99	13.49	12.23	11.12	0.29	0.43	0.65	0.72	Since May31, 2012
MSCI World Consumer Staples	1.00	0.00	1.81	13.33	12.25	11.20	0.36	0.37	0.63	0.69	Since May31, 2012
MSCI World Materials ESG Screened 20-35 Select	0.96	1.93	2.61	19.91	17.35	na	0.73	0.56	na	0.51	Since May31, 2012
MSCI World Materials	1.00	0.00	1.78	20.77	17.96	na	0.73	0.58	na	0.50	Since May31, 2012
MSCI World Consumer Discretionary ESG Screened 20-35 Select	1.00	0.90	3.94	23.41	20.03	na	0.63	0.51	na	0.69	Since May31, 2012
MSCI World Cons Discr	1.00	0.00	2.32	23.47	20.08	na	0.61	0.49	na	0.69	Since May31, 2012
MSCI World Communication Services ESG Screened 20-35 Sel	1.00	0.28	6.15	19.70	17.32	14.72	0.14	0.10	0.19	0.25	Since May31, 2012
MSCI World Communication Services	1.00	0.00	3.20	19.81	17.38	14.73	0.15	0.11	0.19	0.25	Since May31, 2012
MSCI World Health Care ESG Screened 20-35 Select	1.01	0.65	2.46	14.97	14.00	na	0.90	0.89	na	1.01	Since May31, 2012
MSCI World Health Care	1.00	0.00	1.86	14.98	13.98	na	0.88	0.88	na	1.02	Since May31, 2012

Table 3: Index performance, index risk and return characteristics (Sep 28, 2007 – Aug 31, 2022), Source: revised data provided by MSCI

In the tables above, for ease of reading, the most relevant boxes where the ESG index performed better than the non-ESG index have been highlighted with the green

colour; the boxes where the ESG index performed less well have been highlighted in red; finally, the boxes where the two indices have equivalent results have been represented in orange.

Considering that the Information Technology sector, is as previously mentioned, the sector with the highest weighting in the two indices, it is interesting to initially look at the data related to this sector.

In terms of performance, MSCI World Information Technology ESG Leaders 20% Capped index, which represents the sub-index for the Information Technology sector, this brought in a gross return (%) of 16.51% during the period from 3/11/2015 to 22/08/2022, compared to 17.77% for the corresponding MSCI World Information Technology index.

In terms of risk on the other hand, the index based on ESG factors performs better, in fact the annualized std dev (%) calculated at 5 years, turns out to be lower in this index than in the “parent” index.

Moreover, the Sharpe ratio, which is recalled being the measure of risk-adjusted return of a financial portfolio or index, and which in Table 2 is calculated using ICE LIBOR 1M as the risk-free rate, also turns out to be higher in the MSCI World Information Technology index.

In general, therefore, for the Information Technology sector, the ESG index has a lower performance than its “parent” index (Table 2 and Table 3).

On the other hand, with regard to the performance of other factors that have an important weight in the two indices, it can be see that:

- The MSCI World Industrials ESG Screened 20-35 Select, has a gross return over the reporting period of 11.02% versus 11.24% for the corresponding index, leading to a 5-year annualized std dev (%) of 17.52%, lower than the 18.16% compared to the non-ESG index. Looking instead at Sharpe Ratios, this turns out to be higher in the ESG index (0.58) than its counterpart (0.55), indicating a better performance of MSCI World Industrials ESG Screened 20-35 Select than MSCI World Information Technology.

- For the Health care, Financials, Consumer Discretionary, and Consumer Staples sectors, better gross return (%) performance is reported in indexes based on ESG criteria.
- For the Financials, Consumer Discretionary and Consumer Staples sectors there is also lower volatility, in terms of annualized std dev (%), which therefore together with higher returns, consequently, implies higher Sharp ratios than their benchmark indices.
- In the Industrials, Energy, Utilities, and Communication services sectors, better performance is recorded by indices that do not consider ESG factors.

Overall, therefore, a slightly higher performance by the sectoral sub-indices of the ESG indices than their counterparts has been noted; however, it should be noted that these differences are not large and moreover often offset by greater volatility.

For this reason, it is therefore interesting to proceed, also considering the study of Cunha et al (2019), to a more focused analysis, also going to represent the performance trends of the individual geographic indices whose union constitutes the main indices: the MSCI World ESG Leaders index and the MSCI World index.

5.2.3 Geographical Performance comparison

INDEX	GROSS RETURNS (%)							GROSS RETURNS from begin	
	1 Mo	3 Mo	1 Yr	YTD	3 Yr	5 Yr	10 Yr		
MSCI Pacific ESG Leaders	-2.89	-6.47	-17.89	-17.23	2.27	2.14	5.77	2.61	Since Sep 28, 2007
MSCI Pacific	2.25	-5.59	-16.46	-14.77	2.85	2.55	5.84	2.31	Since Sep 28, 2007
MSCI Europe and Middle East ESG Leaders	-6.93	-10.78	-22.67	-23.29	3.84	2.53	5.90	7.00	Since May 26, 2010
MSCI Europe and Middle East	-6.08	-11.18	-20.94	-21.55	2.84	1.86	5.28	6.15	Since May 26, 2010
MSCI USA ESG Leaders Index	-4.93	-4.69	-13.22	-18.58	12.10	12.10	12.90	13.31	Since Aug 31, 2010
MSCI USA	-3.92	-3.65	-13.08	-17.13	12.36	11.79	13.03	13.90	Since Aug 31, 2010
MSCI Canada ESG Leaders	-4.52	-9.65	-15.96	-18.21	6.82	5.54	5.86	4.31	Since Sep 28, 2007
MSCI Canada	-3.99	-9.65	-6.76	-10.89	8.89	6.89	5.09	3.13	Since Sep 28, 2007

Table 4: indices performance- gross returns (%) (Aug 31, 2022): revised data provided by MSCI

INDEX				ANNUALIZED STD DEV (%)			SHARPE RATIO			
	Beta	Tracking Error (%)	Turnover (%)	3 Yr	5 Yr	10 Yr	3 Yr	5 Yr	10 Yr	SHARP RATIO from begin
MSCI Pacific ESG Leaders	1.01	2.09	17.34	17.03	14.88	13.67	0.18	0.14	0.42	0.19 Since Sep 28, 2007
MSCI Pacific	1.00	0.00	3.43	16.36	14.50	13.34	0.22	0.17	0.44	0.17 Since Sep 28, 2007
MSCI Europe and Middle East ESG Leaders	0.97	1.79	9.65	19.73	17.32	15.12	0.26	0.16	0.40	0.43 Since May 26, 2010
MSCI Europe and Middle East	1.00	0.00	2.20	20.17	17.68	15.38	0.21	0.13	0.36	0.38 Since May 26, 2010
MSCI USA ESG Leaders	0.97	1.90	6.09	19.55	17.38	14.00	0.65	0.68	0.89	0.91 Since Aug 31, 2010
MSCI USA	1.00	0.00	2.60	19.83	17.78	14.24	0.66	0.65	0.88	0.94 Since Aug 31, 2010
MSCI Canada ESG Leaders	1.00	3.04	20.65	22.73	20.13	17.14	0.38	0.31	0.37	0.27 Since Sep 28, 2007
MSCI Canada	1.00	0.00	2.99	22.18	19.72	16.68	0.47	0.38	0.34	0.21 Since Sep 28, 2007

Table 5: indices risk and return characteristics (Aug 31, 2022), Source: revised data provided by MSCI

As mentioned earlier, the two indices previously analysed, are in turn composed of the aggregation of 4 different indices, referring to as many geographical areas. To further explore the performance highlighted by the ESG indices compared to that of the "parent" indices, we therefore examine the performance results of the indices shown in Table 1 and Table 2.

Thus, Table 1 lists the indices: MSCI Pacific ESG Leaders, MSCI Europe and Middle East ESG Leaders, MSCI USA ESG Leaders Index, and MSCI Canada ESG Leaders. For each of these, just as done for the MSCI World ESG leaders index, an analysis of the performance in terms of gross returns (%) is proposed. From these data, it is interesting to note that for returns calculated over a period of less than 3 years, these turn out to be for all the indices under analysis, lower than those of their respective "parent" indices.

However, if the analysis is extended to a period of 3 years or more, the returns of indices based on ESG factors begin to increase, standing for some indices at a higher level than the corresponding non-ESG indices. Considering the gross returns (%) calculated over 3 years, the MSCI Europe and Middle East ESG Leaders (3.84%) appears to have a higher return than the corresponding MSCI Europe and Middle East (2.84%). Note that this result was also found in the study by Cunha et al. (2020), where the Dow Jones Sustainable index (DJSI) outperforms its comparable in terms of return while maintaining similar volatility. According to the authors, this could be because the

policies and regulations in this regard are already widespread on the continent and that pension funds are obliged to provide specific ESG disclosures.

Considering instead the gross returns (%) calculated over 5 years, the MSCI USA ESG Leaders Index (12.10%) also turns out to have better performance than its corresponding index (11.79%).

Finally, going to consider the entire time period of analysis, it is interesting to note that for 3 out of 4 indices, the performance is higher for indices that consider ESG factors than for their counterparts that do not. Only the MSCI USA ESG Leaders index, in fact, does not turn out to perform better. According to the report by Giese, et al. (2019) the explanation for this result may be due to the exclusion of important companies from the index, which would have brought high levels of performance to the index, these expected performances are depicted in the figure below and refer to the period between August 2010 and December 2017 (Figure 22).

Asset Name	Periods in Portfolio	Average Active Weight	Annualized Stock-Specific Performance Contribution
Apple Inc.	0	-3.28%	-0.35%
Amazon.com Inc.	0	-0.95%	-0.25%
IBM	87	1.32%	-0.15%
Facebook Inc.	0	-0.69%	-0.11%
Home Depot Inc.	0	-0.71%	-0.10%
Walt Disney Co.	30	-0.16%	-0.09%
Hewlett-Packard Co.	87	0.37%	-0.08%

Figure 25: Seven Largest Contributors to Negative Stock-Specific Performance, Source: (Giese, et al., 2019, p. 11)

As done previously on the two global indices, from Table 2 it can be observed the data related to volatility and its other components. From this, could be initially observed the Tracking error values (%), which are found to be higher compared to that of the MSCI ESG World Leaders index with respect to all 4 indices considered. This result thus shows that the four geographic indices based on ESG factors have a higher volatility, in terms of their ability to emulate the performance of the corresponding benchmark indices, and this also stands as a confirmation of the previously seen returns data.

Instead, looking at the annualized std dev (%) in Table 2, it is easy to see that the two indices: MSCI Pacific ESG Leaders and MSCI Canada ESG Leaders index turn out to be higher in value for each of the three periods considered (3-year, 5-year, 10-year) than

the corresponding “parent” indices. Finally, I look should be given at the Sharpe Ratio obtained by the 4 indices over the total period considered. From this data it is in fact interesting to note that there is a correspondence with the data of them in Table 1 regarding gross returns (%), which confirms to us what was said earlier regarding returns. Sharpe's index, in fact, considers the risk-weighted return, and thus it is possible to see it as a summary of Table 1 and Table 2, where MSCI Pacific ESG Leaders, MSCI Europe and Middle East ESG Leaders Index, and MSCI Canada ESG Leaders manage to create a better risk-weighted return for investors compared to their "parent" indices.

As a final insight, it is interesting to look, as done previously for the two World indices, at the weights of individual sectors on the various geographic indices. For this analysis, therefore, the data of the weights of each sector on its geographic index were extrapolated and then related to each other (Figures 26 and 27). As with the previous analysis carried out on the World indices, it can immediately see a clear similarity in terms of the percentage weights of the ESG sector sub-indices to their corresponding sector sub-indices not based on ESG factors. In fact, only few sectors across the indices present little deviances between ESG indices and "parent" indices, for example:

- Considering the Europe and Middle East indices, the Consumer Staples sector registers a difference of 2,48% in favour of the ESG index, while in contrast, the Health Care sector registers a differential of 3.22% for the "traditional" index.
- Considering the Canadian indices, the Financials sector has a differential in terms of percentage weight of 5.35% in favour of the ESG index sector, while behaving opposite to this is the Energy sector, which is found to have a greater weight in the "traditional" index (5.84% greater than the ESG index).

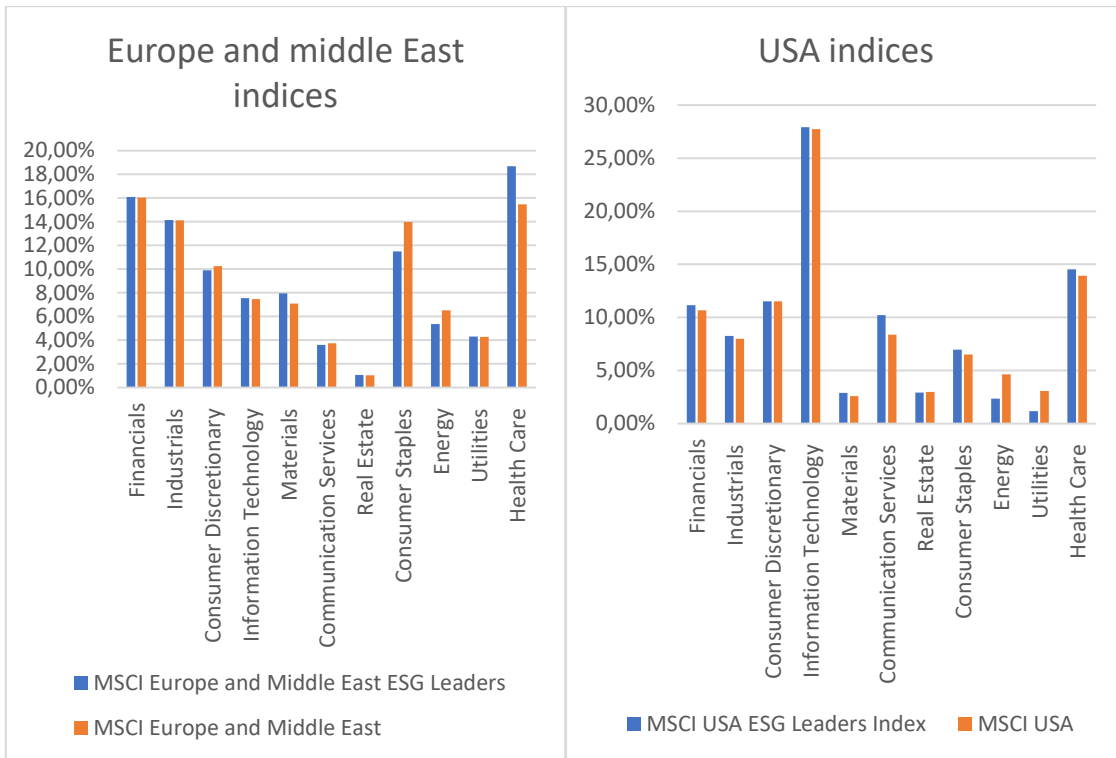


Figure 26: Sector weights of indices from Europe and USA, Source: revised data provided by MSCI

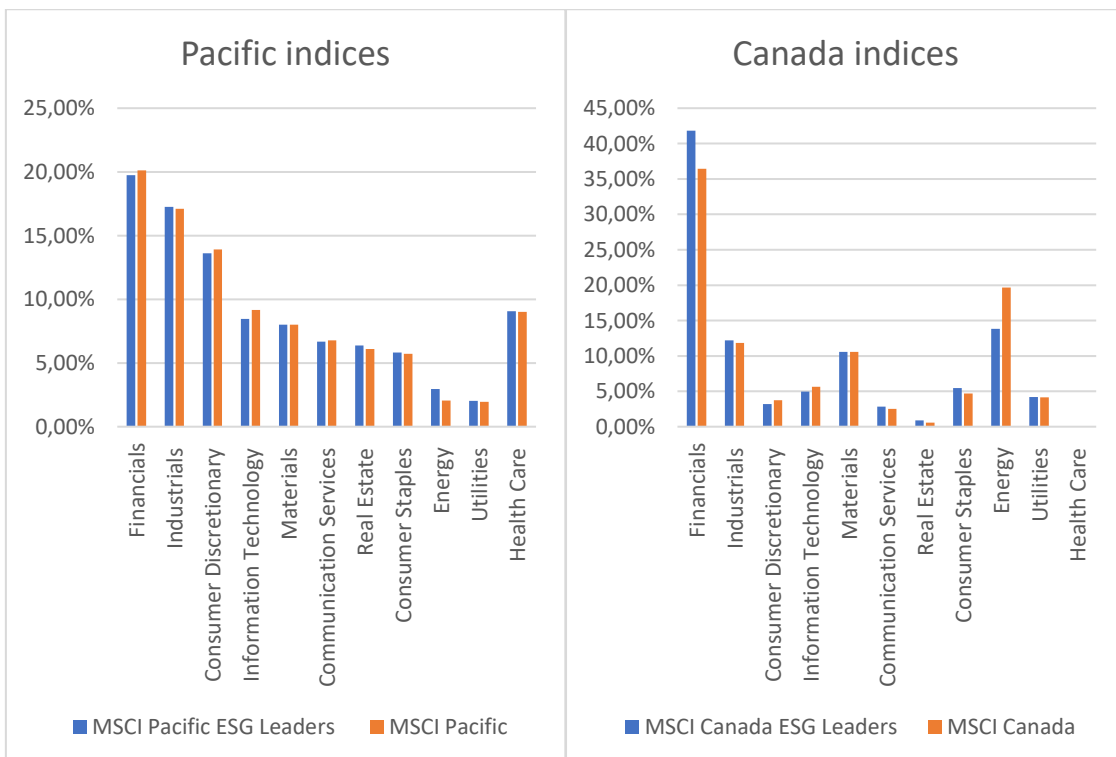


Figure 27: Sector weights of indices from Pacific area and USA, Source: revised data provided by MSCI

It is also evident from the figures that each area is very different from the others. Indeed, it can be seen that each has different predominance. The Canada and Pacific areas, considering both the ESG and non-ESG sector sub-indices, for example, are predominantly represented by companies belonging to the Financials sector, while in the U.S. area the Information Technology sector has the highest weighting (27,93 % with regard to the MSCI ESG USA Leaders index and 27,75% for its corresponding MSCI USA index). This last piece of evidence is very interesting, as it can be linked to the previous data analysed in Figures 22 and 23. Although in fact for 3 out of 4 areas (Europe, Pacific and Canada), the Information Technology sector is not the sector with the highest percentage weight, it still turns out to be the sector with the highest percentage weight in the in MSCI World ESG Leaders MSCI World Index. This peculiarity is easily explained by the data on the weight that various countries have on these two indices. In fact, it can be seen from Figure 28 that USA represents the largest weight for both indices (69.16% for the ESG index and 69,53% for the "traditional" index).

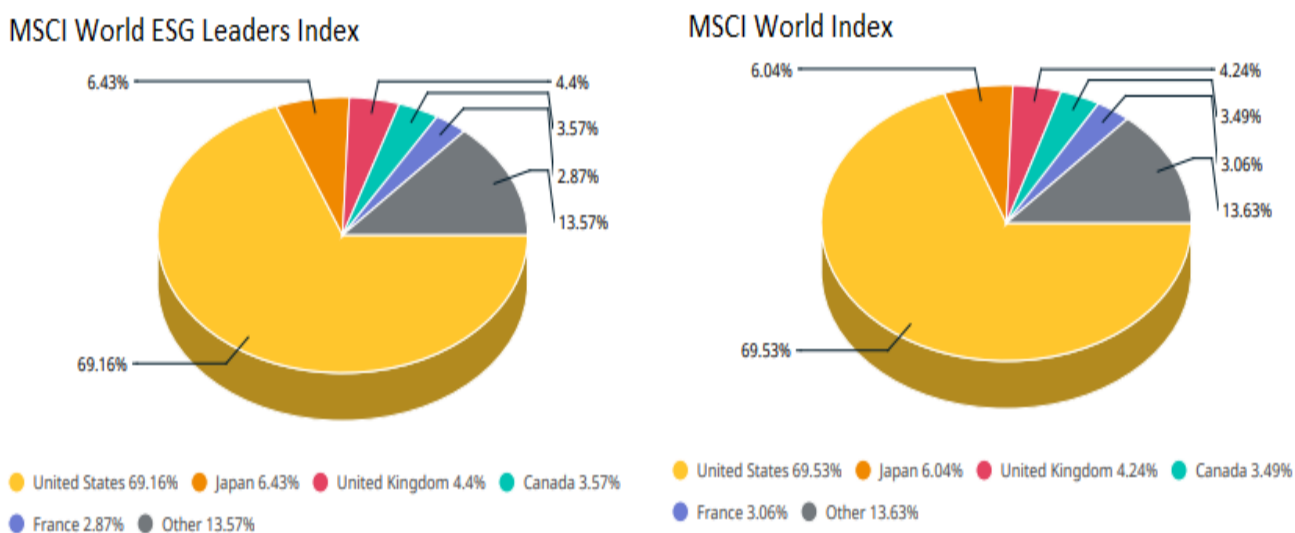


Figure 28: Country weights of World indexes, Source: (MSCI b, 2022, p. 2) and (MSCI a, 2022, p. 2)

It is interesting to note that the health care sector has zero weight in the MSCI Canada ESG Leaders and MSCI Canada indices (Figure 27) which indicates that there are no companies represented in the two Canadian indices from this sector.

For a more in-depth analysis, it should be emphasized that it would have been interesting finally, to analyse the data on the sectors of the individual geographic areas in order to extrapolate the equivalence and diversity of these. However, it was not possible to carry out such work because the relevant data are restricted access on the various platforms such as Bloomberg or MSCI.

Conclusion

This thesis has been drafted with the aim of answering the following question: What are ESGs and what is their impact on the investment world?

Therefore, in order to reach a comprehensive answer, we chose to initially get into what represents the history and definition of ESGs. The starting point for developing this study was therefore to first define its subject matter, namely that of sustainability. Then, after introducing other concepts, such as that of CSR and SRI, an extensive analysis of the history of these was carried out.

This descriptive phase of the history of CSR and SRI was crucial in that it showed us of how the authors' theories have undergone strong changes over the years, which consequently led to greater conscientiousness on the part of companies, and eventually also on the part of investors (when they began to talk about SRI).

Once all the building blocks for talking about ESG had been broadly introduced, this topic was then broken down into its components, that are the environmental, the social, and the governance issues.

Then moving on to the second part of the question, namely, what is the impact of ESG on investments?

3 different types of comparative analyses were carried out to highlight common features and differences between:

- Rating agencies
- Investment strategies
- Indices constructed considering ESG factors and "traditional" indices.

For example, these comparisons made us realize that each agency uses a more or less different process of rating construction that often leads to different outputs. This very characteristic therefore makes it very difficult to compare companies or countries that have a rating provided by different agencies.

In addition, with regard to the use of strategies used by investors, described in depth in Chapter 4, it was found that these have different popularity considering different reference years or different geographic areas.

Finally, given the different evidence found in the first chapters, in Chapter 5 through the comparative analysis of financial indices, the performance of indices based on ESG criteria was highlighted by comparing them with those not incorporating ESG factors.

Before making such a comparison, it was also chosen to implement a literature review dealing with the topic. From this analysis, however, it was found that most of the authors taken as references claim that ESG indices do not have obvious positive performance or even obvious negative performance compared to non-ESG indices.

Precisely this neutrality of performance was also reviewed in the comparison part of the two indices MSCI ESG World Leaders and MSCI World, and likewise in the majority of their own geographic or sectoral sub-indices (also analysed in Chapter 5).

Considering, therefore, all that has been said or reported in this paper, it is clear, then, that ESGs, and in particular the world of sustainable investments that integrate these factors, are of fundamental importance for an improvement in global well-being, which comes from improving the sustainability of companies and communities.

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