POLITECNICO DI TORINO

Master's Degree in Management Engineering

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ESG Funds

composition and certifications

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Abstract

This paper aims to give the reader a comprehensive overview of what has been the main evolution in the transition from Socially Responsible Investments to the ESG approach. This first step provides the basis for contextualising the current rating system of the major players in the global market. RepRisk and Sustainalytics are the most specialised, MSCI the leading player. In fact, as a best practitioner, an analysis of the characteristics of each of the main types of indices is given, as well as their dynamic composition over time, with company examples useful as case studies.

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Acronyms

SRI

Social Responsible Investing

ESG

Environmental, Social and Governance

UNEP/Fi

The United Nations Environment Programme Finance Initiative

PRI

Principles for Responsible Investment

SSEI

Sustainable Stock Exchange Initiative

NYSE

New York Stock Exchange

AUM

Assets Under Management

SSGA

State Street Global Advisors

SDGs

Sustainable Development Goals

NGOs

Non-Profit Organizations

RRR

RepRisk Rating

RRI

RepRisk Index

RIAA

Responsible Investment Association Australasia

Chapter 1

SRI and ESG

"Finance is not just about speculation, big money and profit at all costs. There is a world, the world of sustainable and responsible investment, made up of investors who are not satisfied with obtaining a financial return, but who want to ensure that they do not contribute - more or less directly - to climate change and social injustice." [1]

1.1 The history of social responsible investing

The importance of a responsible approach to investments has its roots well before the recent challanges arising from the human-kind consumption. As far back as biblical times, some religions introduced a ban on investing in activities considered unethical, such as alcohol, gambling, pornography and tobacco, paving the way for the SRI (Social Responsible Investing) approach.

Of religious origin was also the medieval Church's condemnation of usury, sanctioned by the Second Lateran Council in 1139 and, from the mid-1600s, the

Quaker movement, by which the Society of Friends is known, against war and slavery, laying the foundations for a change in collective consciousness that culminated in the early 1800s with the development of abolitionism.

In the 20th century, right after the Great War, different human rights movements led important steps towards economic and social development. For instance, in south Africa's political history there is a striking example of the use of disinvestment as an effective weapon to mobilise social change.

The United States, in the 1960s, was the scene of the first feminist and student movements and the mobilisation against the Vietnam War. These movements spread vastly around the world and began to ask uncomfortable questions of the big names in economics and finance, in order to understand how and where they invest their money.
This growing awareness led to global phenomena such as the boycott of apartheid South Africa in the 1980s. With protests led by South African and American students demanding their universities and institutions to get out of businesses and activities linked to the apartheid-supporting South African government.

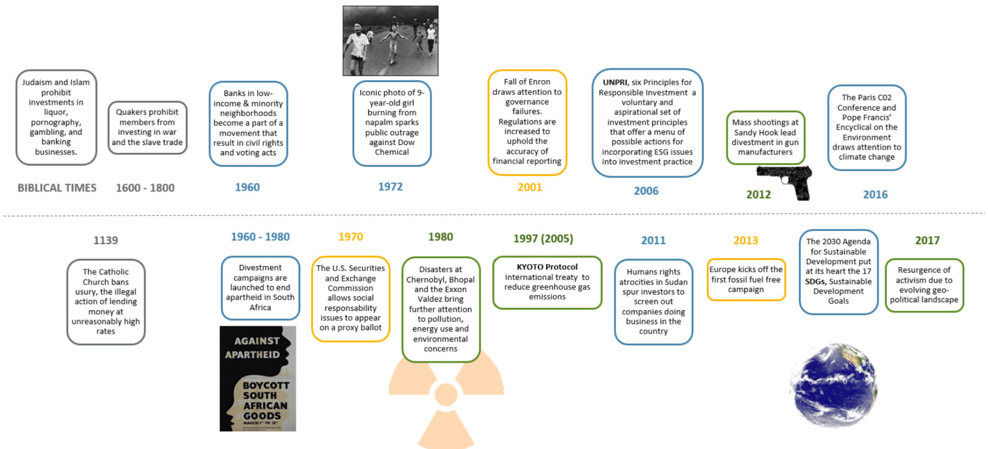

Figure 1.1: History of Social Responsible Investing

The very first structured approach to Socially Responsible Investing took place on February 13, 1928, in Boston, USA, when the Pioneer Fund was officially founded. Riding the wave of prohibitionism, it was the first ever to cut gambling, tobacco and alcohol out of its investment range. At the beginning of the 1970s, the oil crises put the spotlight on environmental risks and the need to limit waste to ensure the sustainability of natural resources. It took a series of environmental disasters in the 1980s, such as the explosion of the Chernobyl nuclear reactor, the chemical disaster in Bhopal, and the Exxon Valdez oil tanker accident in Alaska, to put the E of Environment at the centre of public opinion and lead in 1997 to the Kyoto Protocol, an international environmental treaty on global warming, but which still lacked the United States and developing countries such as China, India, and Brazil. [2]

1.2 The development of Environmental, Social and Governance

Socially responsible investing is widely understood as the integration of some general environmental, social and governance factors into the decision-making and investment processes. ESG factors instead, cover a wider spectrum of topic that are not traditionally part of financial analysis, but may have financial relevance.

Figure 1.2: ESG composition

This might include how enterprises respond to climate change, how good they are with water management, how effective their health and safety policies are in the protection against accidents, how they manage their supply chains, how they treat their workers and whether they have a corporate culture that builds trust and fosters innovation.
The ESG approach was born in the 2000s to enlarge the theme of socially responsible investments, which had been pursued only by excluding certain industries/sectors from the investment universe until that time, directing to a holistic view of environmental, social and governance factors that began to be integrated at different levels.
The term ESG was first coined in 2005 in a landmark study entitled "Who Cares Wins."

"A powerful and historic convergence is clearly under way, between the objectives and concerns of the United Nations and those of the private sector, including – crucially – the financial markets. Peace, security and development go hand-in-hand with prosperity and growing markets. As finance, trade and investment deepen the connections between people and societies, companies and investors are increasingly faced with global – and potentially material – ESG issues. The Global Compact stands ready to support efforts to advance understanding and implementation in this rapidly evolving field." [3]

The conference, convened in Zurich on 25 August 2005, marked an important milestone in this effort, bringing together senior executives from across the financial spectrum. But unlike SRI, which is based on ethical and moral criteria and uses mostly negative screens, such as not investing in alcohol, tobacco or firearms, ESG investing is based on the assumption that ESG factors have clear financial relevance. The report made the case that implementing environmental, social and governance factors in capital markets makes good business sense in a long term vision, leads to more sustainable markets and at the same time guarantees better outcomes for societies.

At the same time UNEP/Fi produced the so-called "Freshfield Report" [4] which showed that ESG issues are relevant for financial valuation. These two reports formed the backbone for the launch of the *Principles for Responsible Investment* (PRI) at the New York Stock Exchange in 2006 and the launch of the *Sustainable Stock Exchange Initiative* (SSEI) the following year.

Subsequently, with the intention of raising the diffusion of sustainable and responsible investment among institutional investors, ESG criteria was, for the first time, required to be incorporated in the financial evaluations of companies. This effort was focused on further developing sustainable investments. At the time, 63 investment companies composed of asset owners, asset managers and service providers signed with \$6.5 trillion in assets under management (AUM) incorporating ESG issues. Since then, more than 1,200 investors, asset management companies and service providers have signed up and committed to incorporating ESG issues into their investment analysis and processes, their policies and practices, seeking transparency on these factors from their counterparts, promoting social responsibility in the industry, cooperating on this issue and documenting activities and progress. In the same years, the focus on corporate governance became a key factor in limiting the economic and reputational risks that emerged during and after the financial crises and scandals since the beginning of the New Millennium. [5]

The State Street Global Advisors (SSGA) voted, during 2017, against the re-election of directors at four hundred companies that failed to make significant effort to include women to all-male boards. This decision is the results of a survey of 500 institutions including private and public pension funds, endowments, foundations, and official institutions. The survey results in 68% of respondents stating that ESG criteria implementation aided in improved returns, along with 77% of respondents that said they invested in ESG strategies due to its impact on a public company's financial performance, as reported by Business Wire. Another example confirming this trend, in May 2017, was the opposition of ExxonMobile (XOM)s' shareholders to the company in response to climate change when 62% of shareholders canceled out management's recommendations by voting to require the world's largest fossil fuel company to report on the impacts of climate change to its business (an year over year increase of 38%). This response followed the *Paris Climate* agreement. In 2018, thousands of professionals from around the world hold the job title "ESG Analyst" and ESG investing is the subject of news articles in the financial pages of the world's leading newspapers. Many investors recognize that ESG information about corporations is vital to understand corporate purpose, strategy, and management quality of companies. It is now, quite literally, big business. The engagement and stewardship of investors towards companies is changing the modus operandi of several sectors called upon to respond to innovation and research needs consistent with sustainable development. [6]

Chapter 2

Environmental, Social and Governance

2.1 ESG Finance

In the last years, there has been a rising concern over environmental and sustainability related issues. Climate change, natural disasters, labor integration, governance misbehaviors, and lastly the COVID-19 pandemic converged the public debate around a different approach to investments and business in general.

While the market for "sustainable" investments was already growing at a significant rate, a set of new products and services have been created for the share of investors whose interests ranged from making money to making a positive impact in the society. Nowadays, the acronym ESG is used to classify a variety of investment vehicles, financial products, and institutions which refer to specific criteria. These criteria can be grouped under three fundamental pillars: integrity, value, and impact. ESG integration can be defined as the explicit combination of those criteria and traditional financial analysis through a systematic approach. Studies on ESG and SRI investment vehicles should be distinguished because they are most likely to lead very different results coming from the lack of purpose alignment. In fact, Zadeh and Serafeim (2017) [7] surveyed a sample of senior investment professionals from non-SRI funds to investigate the reasons behind the adoption of ESG information. The first motive has been found to be the relevance to investment performance, followed by client demand and product strategy. However, ESG classifications became an important portfolio selection tool for both investors and financial intermediaries. Popular financial services providers (e.g. Bloomberg, MSCI. . .) created custom rating systems for companies to help organizations and privates to build ESG portfolios. These screening tools analyze each company's activities and processes: environmental impact, labor management, corporate governance, gender diversity, privacy, and data security. Investors are not the only ones who contributed to the promotion of ESG values.

In the last years, a lot of studies have been published on that matter, and most of the forecasts agree on the fact that ESG-investments are set to expand. ESG analytics featured significant improvements recently. One of the leading firms is Sustainalytics, which provides firms with an array of services aimed at integrating ESG criteria in the investment policy, managing compliance risk, and supporting portfolio screening. The development of these services, notorious companies such as Bloomberg and MSCI developed a series of benchmark tools to address the needs of ESG-savvy investors. Sustainaytics works directly with another important research provider known as MSCI. They declare on their website that 67% of Millennials believe that investing represents a way to express social, political, and environmental values. Moreover, it has been forecasted that a \$30 trillion wealth transfer from baby boomers to 90M of millennials will happen over the next ten years it is straightforward to foresee a boom of the market for ESG investments. For these reasons, the euphoria driving money into new investment vehicles is justified by the shift in investors preferences and awareness.

2.2 ESG Investment Styles

The proliferation of ESG practices led to the implementation of different investment styles. They can be grouped into seven categories, all of them reserving great importance to environmental, social and governance factors while maintaining long term sustainable returns as the main goal. The first is labeled "best-in-class", and it is carried out by selecting the best performing assets, identified by ESG metrics, within a specific investment universe. A more proactive approach is called "engagement & voting", by which they exploit engagement actions and active ownership to influence firms' behavior and disclosure. It is usually achieved through voting of shares and negotiation with companies over ESG issues, hence it is a long-term process. Another proactive approach is called "impact investing". Those investments are directed to companies or funds with the purpose of creating a positive impact from the social and environmental point of view. It differentiates from philanthropy because they retain asset ownership with the goal of obtaining positive financial outcomes. One of the most representative strategies is the "ESG integration". It's based on the coverage of ESG considerations alongside financial metrics in traditional financial analysis. The whole process aims at assessing the impact of ESG practices on companies' performance, and the potential effects on investment decisions. Another important strategy is “exclusion”. As the name suggests, it removes from consideration companies, sectors, or countries from the investments universe of potential choices. The typical targets of this practice are weapons, pornography, tobacco, and animal testing. The opposite investment style is labeled “sustainability-themed”. It is focused on investments in themes or assets related to the development of sustainability. Moreover, it addresses specific ESG issues such as climate change, environmental impact, and health. Funds employing this strategy usually carry out an ESG analysis or assets screening. The last category is labeled “norms-based screening”. It indicates the screening of investments conforming to international standards and norms covering ESG aspects. For instance, the most relevant set of norms is the United Nations 17 principles of sustainability. Zadeh and Serafeim (2017) [7] also examined the implementation of different ESG-related investment styles and how they are perceived. Negative screening is regarded as the least beneficial while full integration and engagement are thought having a 7 higher marginal contribution, although they are all employed in equal frequency. Several ESG styles practices, especially screening, are driven by product and ethical considerations. Conversely, integration is pushed by relevance to investment performance. These approaches can be grouped into three different investment frameworks (Figure 2.1) which, in turn, can be associated with three distinct objectives.

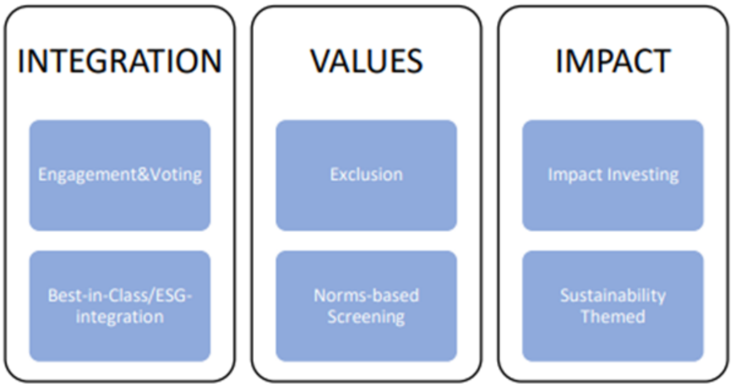

Figure 2.1: Integration, Values and Impact

"Impact" is depicted as the intersection of two spheres representing two distinct drives of investment activity, and therefore it finds expression in strategies such as thematic investing. "Values", is represented as two blocks which separately co-exist into the same investing framework, generating arguably less-effective strategies like negative screening. Finally, integration is the combination of two pillars aimed at maximizing the performance for investors who seek financial performances with the will of considering personal ethical values.

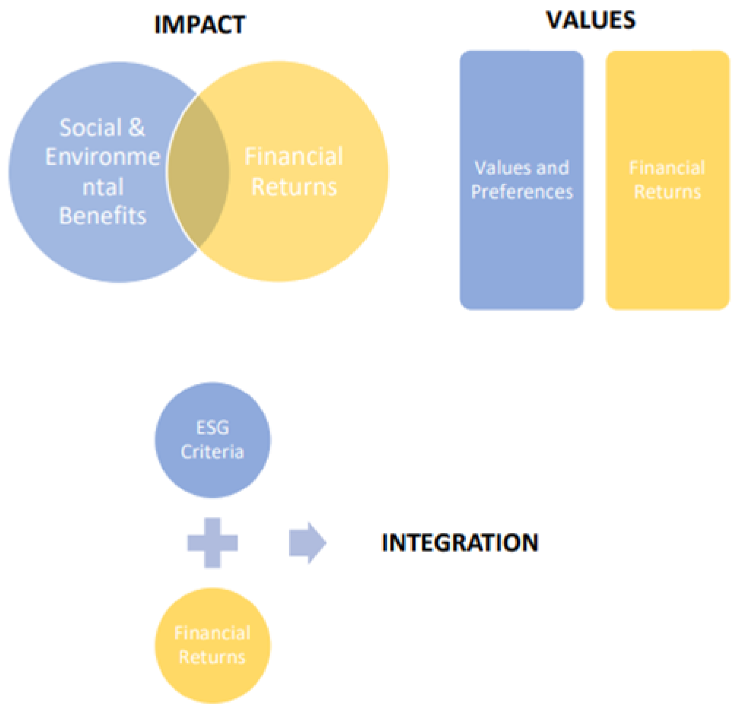

Figure 2.2: Three pillars synergies

2.3 Rating Agencies

Index providing rating agencies have created their own ratings to evaluate ESG factors in order to serve the expanding pool of ESG investors and the contextual data demand. In the sustaiability-related area, increasigly populating, the three major rating agencies that dominate the current market asre identified in MSCI, Sustainalytics (a Morningstar company) and RepRisk. [8]

- MSCI: began in 2010 and is one of the largest independent providers of ESG ratings in the world today. Their rating scale ranges from AAA to CCC with AAA being the best. MSCI is the ESG provider for over 6,000 global companies and over 400,000 equity and fixed-income securities.

- Sustainalytics: created in 2008, is the fusion of DSR from the Netherlands, Scores from Germany, and AIS from Spain. Their ratings are a 0-100 scale that incorporates sector and industry based comparisons. Over 7,000 companies across 42 sectors and is steadily emerging at an international level. Nowadays is property of Morningstar which owns more than 40% in the agency.

- RepRisk: started in 1998, screens news sources to provide reporting for more than 140,000 private and public companies around the world spanning 34 sectors. Similar to MSCI, RepRisk's rating scale ranges from AAA to D.

2.3.1 MSCI

1. *Designed to look at the financial significance of ESG issues.*

   Institutional investors have a fiduciary duty to consider their significant investment risks, such as asset managers, pension funds and dominant wealth funds. A common practice is the use of ESG ratings to assess those financial risks in the investment process. In support to this investment goal, they focus on the intersection between a company's business model and performance and the relevant ESG issues that can lead to significant risks and opportunities for its industry, with the use of a strict rules-based methodology. One of the key tools used for this focus is the materiality-map.

   In order to understand the scope of such tool it is possible to take a semiconductor maker as example.

   Semicuctor production require important amount of water consumption and to determine whether it risks running out of it is useful to consider whether the company operates in a local that requires it to conserve water and limit this resource usage. Investors might also take into consideration the the prospect of government on water usage, potential conflicts with the community and whether management is taking steps to address those concerns.

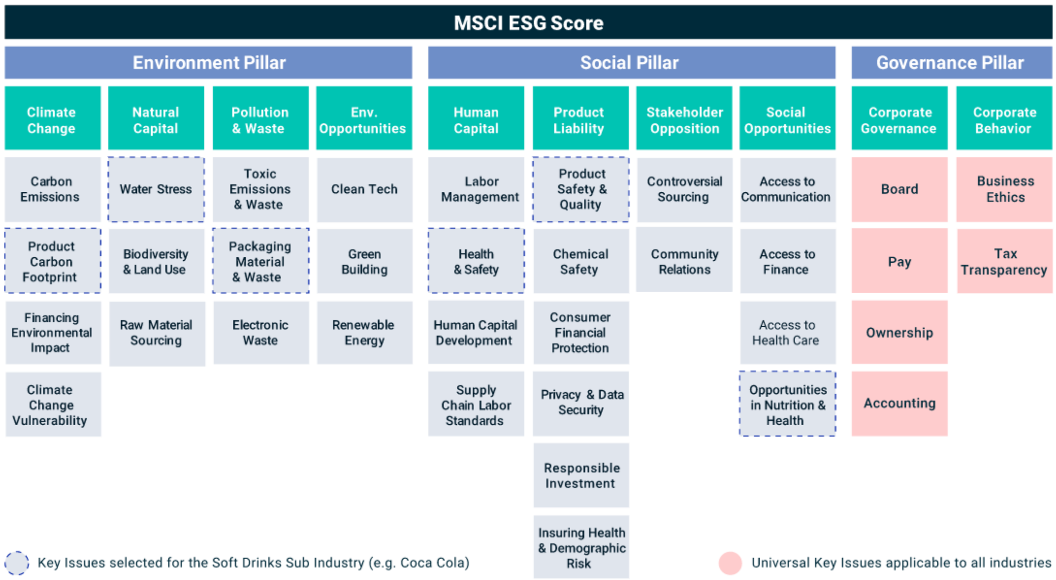

Figure 2.3: MSCI industry specific materiality-map

When considering the financial risk assessment of a commercial real estate developer, on the other hand, shareholders may want to understand its ability to meet the demand of office and retail tenants for buildings designed for indoor air quality. To assess whether a finance company risks losing top talent, investors might look to data on the diversity, equity and inclusion of its workforce. [9]

MSCI's assessments focus on the financial risks to a company's bottom line, as demonstrated by the examples above. In fact, it aims to guide investors to the assessment of such risks in order to to maximize capital deployment efficiency increasing the probability to reach higher investment returns.

2. *Support to ESG integration.*

MSCI's management, through its experience in serving a broad and diverse range of investors globally, understands that each investor has his or her own specific investment objectives and ways of incorporating considerations into their portfolios. In fact, MSCI provides a wide variety of analytical tools that have been developed over the years to help investors in that process according to their unique goals. MSCI's contribution to this decision-making process is not about specific investments and cases but structured tools and databases to provide support. Though ESG investing has been referred to in many different ways, from socially responsible investing to mission-related investing, we group the various names into three approaches that investors use to achieve distinct ESG objectives: **ESG integration**, **impact investing** and **values-based investing**.

MSCI's ESG ratings are designed specifically for ESG integration, which uses ratings to support the building of a resilient portfolio for the specific purpose of enhancing long-term risk-adjusted returns. By helping institutional investors integrate ESG into their strategies, ratings have helped accelerate adoption of ESG considerations into mainstream investing.

Investors also may pursue impact investing, which targets investments that aim to generate measurable social or environmental impact. To pursue such strategies, investors can turn to tools such as SDGs Alignment Tool, providing a holistic view of a company's contribution to addressing each of the U.N. Sustainable Development Goals.

There are also analytical tools for investors who pursue values-based investing, which aims to align portfolios with an investor's ethical values by expressing preferences for the industries and companies they invest in. A values-based investor might use business-screening tools or MSCI indexes designed to avoid investments in controversial weapons or tobacco, for example. An ESG rating, by itself, would not provide a values screen.

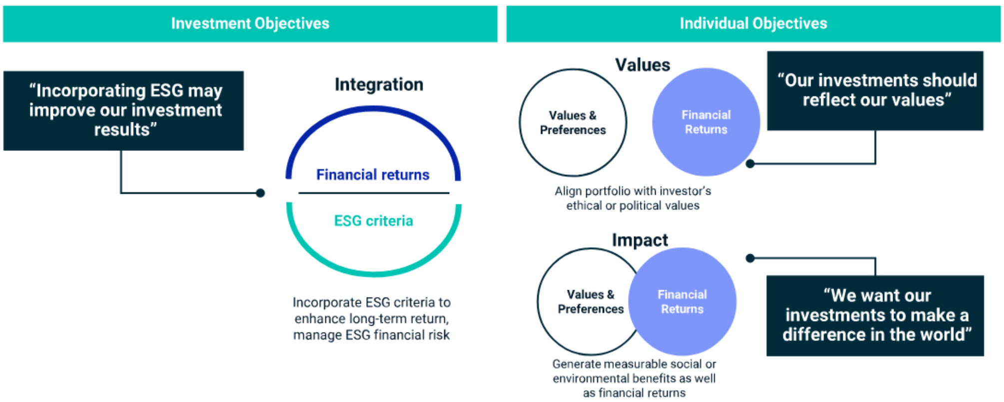

Figure 2.4: Investments vs Individuals objectives

While each of the three approaches serves a specific purpose, the nuances among them can get lost in the discussion about sustainable investing and the tools investors use to pursue them. Investors also may combine elements of each approach with the aim of managing long-term risk, reflecting individual values and generating positive impact.

3. *Performance assestments with peers.* Some investors will favor or avoid certain sectors for a variety of financially or values-driven reasons. Within a given industry, however, investors want to know how companies compare with one another based on their exposure to, and management of, financially relevant ESG risks. If the chipmaker noted above has a high exposure to the risk of water stress and manages that risk poorly compared with its industry peers, that risk will show up in its ESG rating.

   Clearly, different industries face different risks. Carbon emissions, for example, will affect the rating of an oil company far more than that of a restaurant company. Imagine a fast-food chain that increases emissions from one year to the next while still improving both its overall ESG rating and its environmental score. Some people might find that confusing, but it is easily explained: Other ESG factors — such as sourcing of inputs, packaging waste and product safety — are more financially relevant to the fast-food chain than the carbon emissions of its operations, and thus weigh more heavily in its ESG rating and environmental score. Also, despite increasing its emissions, the fast-food chain might still have a smaller carbon footprint compared with its industry competitors.

2.3.2 Sustainalytics

Morningstar's recent acquired company measure ESG Risk with a three blocks approach defininied at first with two different side of the same issue: materiality and risk. An issue is considered to be material if its presence or absence in financial reporting is likely to inlfuence the decisions made by a reasonable investor. To be considered relevant in the ESG Risk Ratings, an issue must have a potentially substantial impact on the economic value of a company or corporation and its financial risk and return profile from and investment perspective.The three building blocks of the ESG Risk Ratings for Sustainalyitcs include Corporate Governance, Material ESG Issues (MEIs) and idiosynccratic ESG issues.

1. *Building Block: Corporate Governance*

   Corporate Governance is a fundamental element in the ESG Ratings and highlights how poor Corporate Governance poses material risks for companies. It applies to all different kind of companies irrespectively of the subindustry they are in. On average, unmanaged Corporate Governance risk accounts for about 20% to the overall risk score of a company while the final weight varies depending on the individual selection of ESG issues with regards to materiality and the specificity of the company itself.

2. *Building Block: Material ESG Issues*

   Material ESG issues building bloks form the core of Sustainalytics methodology. In fact, they can influence the economic value of a company in a fairly unpredictable manner. They are focused on a top that require a common set of management initiatives or a similar type of oversight. For instance, employee recruitment, labour relations, development, diversity and engagement are encompassed by the ESG issue of Human Capital due to the relationship with employees and require HR (Human Resources) initiatives and oversight. A common risk associated with Human Capital is attract and retain qualified talents. Another common thread related to employees regards the insurance of health and safety in the workplace, which is a relevant risk managed trhough a different set of activies from general Human Capital ones.

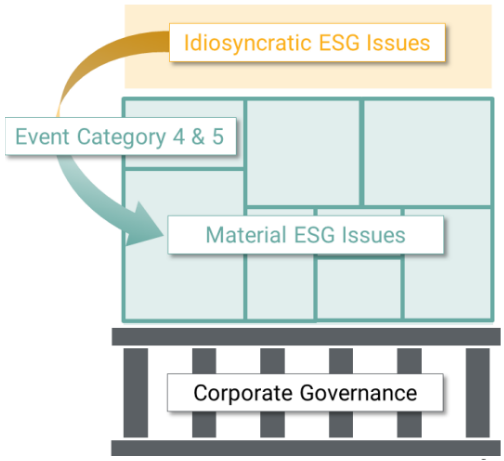

Figure 2.5: Sustainalytics building blocks for ESG Risk Ratings

3. *Building Block: Idiosyncratic Issues*

   There are also other issues that may become significant or material in an unpredictable manner which are called idiosyncratic issues and are as well unrelated to the peculiar subindustry and business model that can be found in a specific industry. For instance, an accounting scandal is unpredictable and unrelated to the type of industry. Typically, this type of issues are event-driven therefore become material ESG issues if the associated event assestment passes a significance threshold and affects just the specific company in question, not the entire subindustry that company is part of. This is another significant differentiator to the second building block of the risk ratings, the Material ESG Issues.

2.3.3 RepRisk

The purpose of RepRisk's solutions is not to provide ESG ratings, but to identify and assess material ESG risks in a systematic way. An outside-in approach, by analyzing information from public sources and stakeholders, provide them a way to intentionally exclude company self-disclosures. It is now well-accepted that self-reported information is not reliable data – especially when it comes to risks.

RepRisk's unique perspective over ESG datasets serves as a reality check for how companies conduct their business around the world when it comes to human rights, labor standards, corruption, and environmental issues. This perspective, together with a transparent, rules-based methodology and daily updates, ensures consistent, timely, and actionable data at their client's fingertips.

Since 2006, RepRisk has been leveraging the combi9nation of AI and machine learning with human intelligence to translate big data into actionable research, analytics and risk metrics. In fact, RepRisk ESG Risk Platform is the world's largest database of its kind with a variety of over 190,000 companies and 50,000 infrastracture projects.

The purpose of the dataset is not to provide ESG ratings but to systematically identify and assess material ESG risks by information from public sources and stakeholders given that self-reported companies' information is not a reliable data, especially when it comes to risks. [10]

RepRIsk's core research scope is comprised of 28 ESG Issues that are comprehensive and mutually-exlcusive.

In addition to the above listed issues there are a few cross-cutting issues that cannot fit in a single column such as:

- Controversial products and services;
- Products (health and environmental issues);
- Supply chain issues;
- Violation of national legislation;
- Violation of international standards.

Figure 2.6: RepRisk's ESG scope map

This issues- and event-driven methodology allows RepRisk to offer universal coverage, being able to capture any company exposed to ESG risks regardless of its characteristics.

Methodology of research process

The dataset is daily updated by a strict, rules-based research process that helps ensure consistency of data over time. AI and machine learning combined with human intelligence help translate big data into curated research and metrics.

1. *Screening and identification*

   The goal is to identify projects or companies associated with and ESG risk incident. On a daily bases over 100'000 public sources and stakeholders are screened. With the use of machine learning model prediction, each risk incident is tagged to entities identified, for example the related ESG issues, companies, project etc. The automated tagging serves to distribute relationships before analysis and curation step.

2. *Analysis and curation*

   The results of the screening process are given to the analyst team which is responsible for reviewing and approving it according to RepRisk's proprietary rules-based system. Each risk incident is then analyzed with a 3-dimension framework, which is composed of: Severity of the risk incident: taking into account the consequences of the risk incident, the extent of the impact and if the risk incident was caused by an accident, by negligence or intent. Can be loew, medium or high. Reach of the information source: according to RepRIsk's own ratings. Can be limited for local media, small NGOs and social media; medium for most national and regional bodies as well as international NGOs; high for few truly global media outlets.

3. *Quality assurance and quantification*

   The goal is to ensure that the analysis process has been completed in line with the company's methodology. The final step is done through data science and gives two different metrics as results: the RepRisk Rating (RRR) a letter rating (AAA to D), which facilitates benchmarking and integration of ESG and business conduct risks and the RepRIsk Index (RRI) which captures and quantifies reputational risk exposure related to above mentioned ESG issues.

2.4 Market trends by MSCI

The National Association of Securities Dealers Automated Quotation (NASDAQ) during 2019 reviewed the MSCI ESG rankings. In particular, the S&P 500 index was analysed, taking into account 98% of the components. The analysis considered various performance indicators, including price and volatility, over the previous five years. Through the use of seven potential MSCI ratings as benchmarks (ranging from AAA to CCC), NASDAQ created prorietary analysis categories:

- the "leaders" established to be rated AAA or AA,
- the "average" as A, BBB, or BB,
- the "laggards" such as B or CCC.

In addition, NASDAQ compared the performance of these three categories with that of the market. The results of this analysis showed that not only did companies considered to be top sustainability performers according to the MSCI framework exhibit higher returns and less risk, but also that companies considered to be sustainability laggards exhibited the opposite results.

Median daily market return and daily variance		
Leaders	Median	Laggards
+6.3%	+1.3%	-22.7%
-6.4%	-0.8%	+10.2%

Table 2.1: Nasdaq market returns (top) and risk (bottom)

Those in the last category posted an additional median daily return of 4.8 basis points, which is almost 23% less than the S&P 500. The leaders showed much lower volatility than the market, with 152 bps of daily volatility. The leaders were also the only group with positive returns and a higher probability of positive returns (skewness). This suggests that there are fewer negative outliers for companies rated AAA or AA by MSCI. As the skewness criterion is becoming more widespread, investors are not only looking at companies that incorporate it as valuable investments, but also at companies without it as disadvantageous and much riskier investments. An example that can confirm this importance is Equifax's mishandling of its cyber breach in September 2017. In this case, MSCI's work on Equifax's governance practices allowed it to highlight cyber vulnerabilities well before the breach occurred. Had Equifax focused more on its MSCI rating, it might have been able to manage and potentially prevent the cyber breach. In Japan, there is the JPX-Nikkei 400 index, known as the 'shame index', which identifies companies that fail to meet international disclosure and governance standards.

NASDAQ further analysed the connection between a company's MSCI rank and its performance. "Leaders showed better performance with higher profits and lower interest rates, while laggards underperformed in these aspects. They found that the 85 MSCI leaders in the S&P 500 showed an 11% higher P/E in FY1 than the market, compared to 1.4% lower for average companies and 0.8% lower for laggards. In addition, leaders showed a higher profit than the market (10.6%) on their earnings before interest and taxes (EBIT) than average companies (1.2%) and laggards (-16.0%). Looking at companies' returns on invested capital (ROIC), the leaders showed 22.3% higher capital efficiency, while average companies and laggards showed less (-5.5% and -12.8Finally, leaders showed a much higher market cap ($31 billion) than the market ($24 billion) and laggards ($22 billion). As shown by the MSCI data, companies labelled as leaders by MSCI exhibited much higher returns with lower interest rates, while laggards faced higher interest rates." Thanks to these results, it is possible to say that the rankings divide companies into 3 main categories with respect not only to performance ESG but also to financial performance, with a well-established positive correlation between the two different sets of metrics. Moreover, this could be the main driver of the influx of money into financial instruments related to ESG in the last two years, in addition to the COVID-19 pandemic.

2.4.1 COVID-19 pandemic

Given the financial significance of the performance of ESG recorded over the 5-year period between 2014 and 2019, it is reasonable to analyse how a worldwide pandemic impacted the ESG market. March 2020 was the shortest-lived global market crash in history, although the first signs of collapse date back to late 2019. March 16, 2020 was the day that Covid heavily impacted world markets and investor welfare. During that week, the public realised that the pandemic was changing the paradigm, turning buying and selling into an excessive sell to cash in on profits and wait for rosier forecasts. On that day alone, the S&P 500 - the US index representing the 500 companies with the largest market capitalisation and trading volume - fell 7% immediately after opening and halted trading for 15 minutes. It was the switch's third halt in a week, following similar halts on 9 and 12 March.
The Dow Industrials - one of the oldest indices that tracks Wall Street's 30 largest stocks regardless of their capitalization - fell 12.9 per cent, the second largest percentage loss since World War II (after 22.6 per cent in 1987). The Nasdaq - a global online market for buying and selling securities and the world's first electronic stock exchange - fell 12.3%, its biggest percentage loss ever. The S&P 500 wouldn't

hit bottom until March 23, a week later. From the high of 19 February 2020 to the low of 23 March, the S&P would fall about 34%. By August, the market almost quickly reversed course and the S&P 500 returned to its old highs.

In the meantime, higher rated ESG funds fared better in the market downturn.

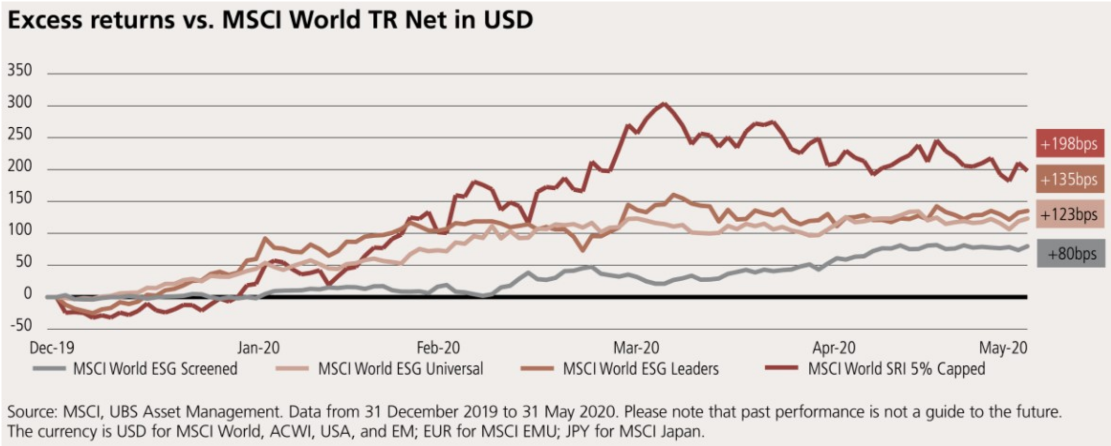

Figure 2.7: MSCI ESG funds returns during COVID-19 pandemic

The financial performance is expressed in basis points. One basis point is equal to 1/100th of 1% which means for example that MSCI World SRI 5% Capped, the best performer in the graph above, marked a growth of 1.98% from the end of December 2019, dropping a little over 0.5% during market crash related to the COVID-19 pandemic. The graph shows the growing financial strenght related to the ESG ranking depicting a higher growth performance for higher rated ESG funds compared to the MSCI World ESG Screened, resulting in a 118 spread between ESG leaders and ESG laggards in the 6 months taken into consideration.

Chapter 3

ESG fund industry

Introduction

Sustainable investments during 2020 reached a record $35.3 trillion globally, an increase of 15% over the last two years (2018-2020) and 55% over the last four years (2016-2020). Total professionally managed assets (AUM) during the mentioned period grew to $98.4 trillion. Reported sustainable investment assets under management constitute a total of 35.9% of total assets under management. This represents growth over the previous reporting period of 2.5 percentage points. Sustainable investment assets continue to rise globally, with the exception of Europe which appears to show a decline, however this is due to significant changes in the way sustainable investment is defined in this region, making comparisons with previous figures very difficult. [11]

The largest increase over the past two years was in Canada, where sustainably managed assets grew over 48%. The United States closely followed Canada with a growth of 42%, followed by Japan at 34% from 2018 to 2020. In Australasia,

REGION	2016	2018	2020
Europe*	12,040	14,075	12,017
United States	8,723	11,995	17,081
Canada	1,086	1,699	2,423
Australasia*	516	734	906
Japan	474	2,180	2,874
Total (USD billions)	**22,839**	**30,683**	**35,301**

Figure 3.1: Sustainable investments per region by GSIR

sustainable assets continued to rise, but at a slower pace than between 2016 and 2018 with a growth of 25% from 2018 to 2020 compared with 46% from 2016 to 2018. This slow down reflects an industry transition whereby industry standards on what constitutes sustainable investment, as defined, and measured by RIAA, have tightened. Europe reported a 13% decline in the growth of sustainable investment assets in 2018 to 2020 due to a changed measurement methodology from which European data is drawn for Global Sustainable Investments Review. This reflects a period of transition associated with revised definitions of sustainable investment that have become embedded into legislation in the European Union as part of the European Sustainable Finance Action Plan. [11]

3.1 A growing trend

The mutual fund industry followed a growing trend pushed by new investment norms and a growth in investors' demand. Morningstar officially reports $1.2 trillion in assets under management, more than twice as large as ten years ago.

This significant growth is fuelled by three main reasons:

1. As time pass, the individuals representing future financial decision-makers are demanding more of these products. They are also requesting long-established companies and businesses to adapt to newly changing values.

2. Regulators and governments are embracing this vision by integrating sustainability criteria into the political and regulatory framework.

3. There is growing evidence that ESG research and analytics can dodge certain investment risks and bring excess returns.

On the other hand, the lack of a uniform rating system prevents institutions from fairly comparing ESG investments across companies, countries, and jurisdictions. In fact, Zadeh and Serafeim (2017) explained in their survey that the main obstacles to the adoption of ESG criteria are the lack of comparability, reliability, quantifiability, and timeliness. For these reasons, financial supervisors are pushing towards a tighter control to deter companies from using the "ESG" label as a pure marketing tool. Instead, regulators are pushing for them to show consistently the required characteristics for being classified as such. Their portfolios must consist of equity or bonds with a high degree of environmental, social and governance features whose reliability needs to be tested and certified. Ratings have been playing a fundamental role in this acknowledgment process. Data providers such as MSCI, Morningstar, and Bloomberg developed scores and screening tools in order to designate funds as sustainability leaders, average, or laggards. It is usually achieved by assessing the ESG score of the portfolio's components and compare them to its peers. ESG assessment is often combined with controversy scores in order to hold companies accountable for negative operations against sustainability principles.

The **main drawback** of these ratings is that they reflect the present situation of the fund. They do not reflect the potential changes and hence it is difficult to assess their persistence. One possible bad scenario for an investor could be the discovery of a downgrading of companies in which he/she invested, and which are not regarded as sustainable as before. For this reason, investors need to decide a priori whether they want to prioritize financial returns or positive social impact, otherwise, it might damage its investment strategy.

3.2 MSCI ESG Funds

MSCI: leader in ESG-related financial tools

MSCI Inc. is the world's largest provider of Environmental, Social and Governance Indexes with over 1,500 equity and fixed income ESG Indexes designed to help institutional investors more effectively benchmark ESG investment performance and manage, measure and report on ESG mandates. In addition, MSCI offers a wide range of Climate Indexes for investors who wants to incorporate climate risks and opportunities into their investment process. Looking at the history of ESG indexes, the first ESG index ever created in 1990 is the Domini Social 400 Index now known as MSCI KLD 400 social index. With over 30 years of experience, milestones, and acquisitions such as the one of Carbon Delta in 2019, MSCI is the first ESG rating provider to measure and embed companies' ESG risk exposure. In addition to that, MSCI has developed a wide framework and a precise methodology in order to create ESG-related financial products. Their broad ESG Ratings coverage accounts for 14,000 companies representing more than 680,000 securities with 90% of equity and fixed income market value.

ESG Index Funds composition

As previously mentioned in the second chapter of this work, the three approaches that respect ESG investments are integration, values (and screening) and impact, each one having its own preferred investment styles in order to ensure the fulfillment of characteristics sought from the bottom-line idea of the financial product. MSCI, as best practitioner, applies a similar framework to the creation of ESG Index funds. While creating a brand new ESG Index Fund, 3 different investment styles can be taken into consideration, depending on the objectives to be reached.

1. Integration: the objective is to invest with a systematic and explicit inclusion of ESG risks and opportunities with the intention to enhance long-term risk-adjusted returns. It can be reached through the use of different common approaches such as:

    - Bottom-up ESG integration: investing with a systematic and explicit inclusion of ESG risks and opportunities in investment analysis.
    - Top-down ESG integration: investing with a systematic and explicit inclusion of ESG factors in portfolio construction.
    - Best-in-class selection: preferring companies with better or improving ESG profiles relative to their sector peers.
    - Thematic investing: based on trends or structural shift, such as social, industrial and demographic trends.
    - Active ownership: entering into a dialogue with companies on ESG issues and exercising both ownership rights and voice to effect change.

2. Values: The objective is to invest in alignment with an organization or individual's moral values and beliefs. In this case, the common approaches are shared with other investment styles such as Best-in-class selection and active ownership and others are exclusive of the selected investment style for instance:

    - Exlusionary or negative screening: avoiding securities on the basis of an organization or individual's values, standars, norms or other ESG considerations.
    - Socially responsible investing (SRI): a traditional term that can be used in this case to describe a values-based approach aim to reducing exposure to negative externalities.
    - Faith-based investing: it often involves avoiding investments in companies whose business activities are viewed as violating the teachings of a given faith. It may also include aims to generate measurable social (or occasionally environmental) impacts.

3. Impact: The objective of this approach is the intention to support positive social and/or environmental benefits alongside a financial return. Methods to achieve it may include the already mentioned impact investing, active ownership and thematic investing, as well as one exclusive candidates:

    - Mission-related investing: aligning investments with organizational values or to further philanthropic goals. It often aim to generate measurable positive social or environmental impact, can be referred to as impact investing. [12]

3.2.1 Integration-based approach ESG Index Funds

ESG Leaders

This class target companies that have the highest environmental, social and governance rating in each sector of the parent index. MSCI provides investors globally with ESG indexes designed to facilitate investors' integration of ESG considerations into their investment process. The indexes use a best-in-class approach by only selecting companies that have the highest MSCI ESG Ratings. They are free float-adjusted market capitalization weighted indexes designed to represent the performance of companies that have favorable ESG profiles compared to industry peers. Overall the indexes target a 50% sector representation vs. the parent index. The indexes are designed for institutional investors seeking exposure to companies with a strong sustainability profile and relatively low tracking error to the underlying equity market.
For instance,
The indexes aim to help investors seeking to:

- Mitigate short- and long-term ESG risk
- Meet their fiduciary obligations
- Mitigate reputational risk
- Maintain broad market exposure
- Have sector diversification
- Avoid taking active country or sector bets

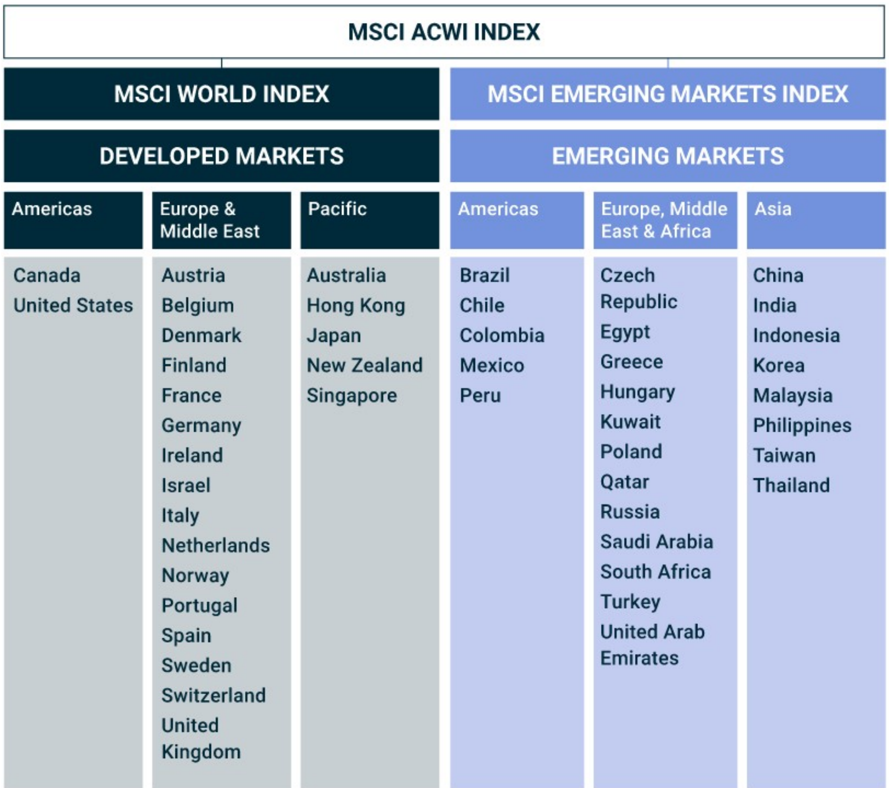

Figure 3.2: ACWI Index composition

The key features are:

- Leverages MSCI's award winning MSCI ESG Research and ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities.
- Best-in-class approach selecting the highest rated companies in each sector.
- Designed to exclude companies involved in severe controversies.
- Based on industry leading MSCI Indexes and are designed to enable seamless integration.
- Parent index construction rules designed to achieve replicability. [13]

The MSCI ACWI Index, MSCI's flagship global equity index, is designed to represent performance of the full opportunity set of large- and mid-cap stocks across 23 developed and 25 emerging markets. It covers more than 2,900 constituents across 11 sectors and approximately 85% of the free float-adjusted market capitalization in each market.

The index is built using MSCI's Global Investable Market Index methodology, which is designed to take into account variations reflecting conditions across regions, market cap sizes, sectors, style segments and combinations. Its ESG counterpart, the MSCI ACWI ESG Leaders Index replicates the track with an error of 1.3% in the last 12 months, which perfomance is compared to the former index in the graph below.

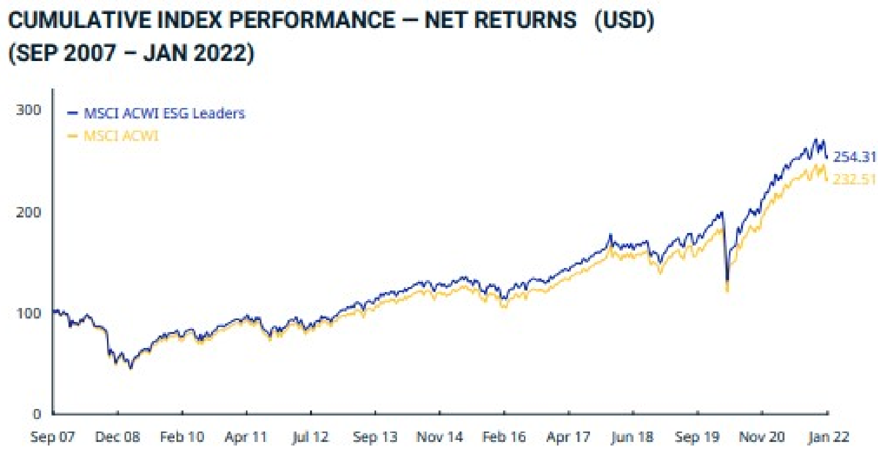

Figure 3.3: ACWI and ESG Leader counterpart comparison (2007-2022)

ESG Focus

The MSCI ESG Focus Indexes are designed to target companies with positive environmental, social and governance characteristics while closely representing the risk and return profile of the underlying market. Each index is constructed through an optimization process that aims to maximize its exposure to ESG, subject to a target tracking error and other constraints. The indexes are sector-diversified and are designed to over-weight companies with high MSCI ESG Ratings and under-weight companies with low ratings. Tobacco and Controversial Weapons companies are not eligible for inclusion. Maintaining as benchmark the AWCI Index it finds the counterpart in the MSCI ACWI ESG Focus Index. The index is constructed by selecting constituents from MSCI ACWI Index through an optimization process that aims to maximize exposure to ESG factors for a target tracking error budget under certain constraints. [14]
The index is sector-diversified and targets companies with high ESG ratings in each sector. Tobacco and Controversial Weapons companies are not eligible for inclusion. Following closer than his Leader counterpart with a tracking error of

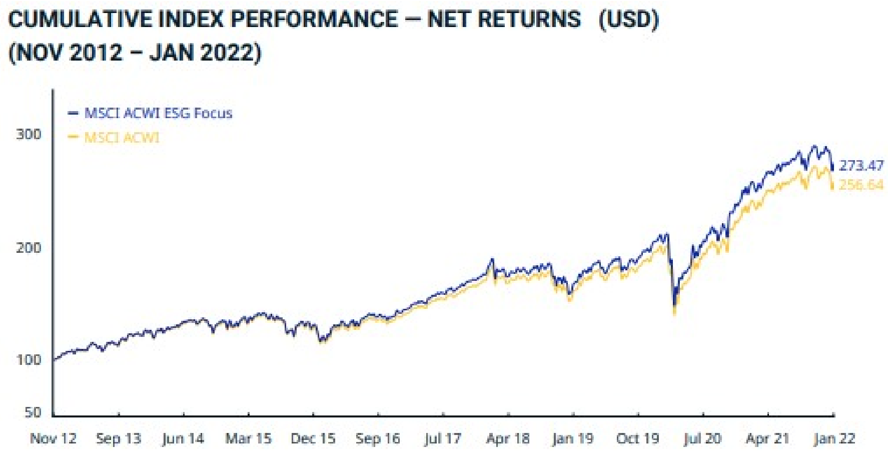

Figure 3.4: ACWI and ESG Leader counterpart comparison (2012-2022)

0.54% in the last 12 months, as the time of writing it has a higher economic values than tracked index.

ESG Universal

The MSCI ESG Universal Indexes are a modern way of indexing, and are designed to address the needs of asset owners (who also classify themselves as universal owners), who may look to enhance their exposure to ESG while maintaining a broad and diversified universe to invest in. It excludes only companies found to be in violation of international norms (for example, facing very severe controversies related to human rights, labour rights or the environment) and companies involved in controversial weapons (landmines, cluster munitions, depleted uranium, and biological and chemical weapons).

The indexes target companies which demonstrate a robust MSCI ESG Rating and a positive ESG Trend, while maintaining a broad universe of securities. The index is designed to integrate ESG signals and retain diversified market exposure. As institutional equity investors increasingly think about the long term, they may adjust their portfolios to accommodate ESG concerns in their investment processes. This can be particularly challenging for investors, such as pension funds and endowments, whose portfolios span the entire equity market. Exclusions are a common way to implement ESG but removing entire securities may have a financial cost. Instead, MSCI ESG Universal Indexes reweight and maintain a wide investable universe. This enables investors to demonstrate leadership in promoting ESG, in addition to the ones of ESG Leaders Index Funds.

The MSCI ESG Universal Index minimizes exclusions to a core group of objectionable stocks. The exclusions reflect a common core among institutional investors

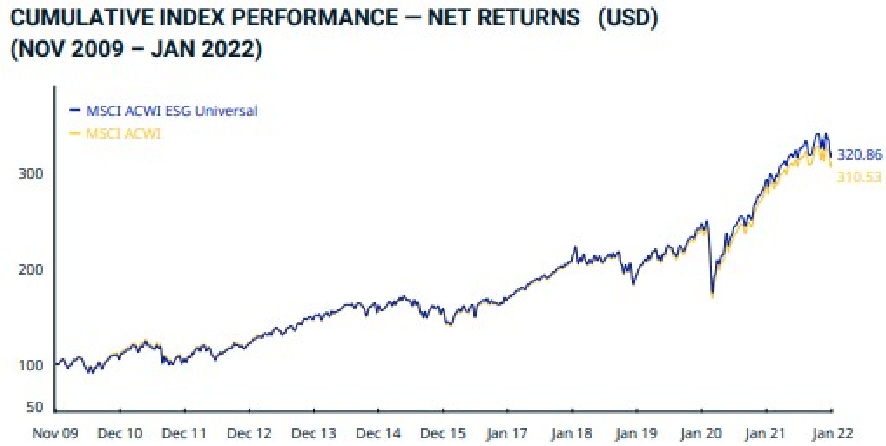

Figure 3.5: ACWI and ESG Universal counterpart comparison (2009-2022)

and include those companies who are involved in controversial weapons and violations of international norms. These indexes rely on re-weighting techniques which allows for a broad and diversified universe geared towards institutional investors. In addition, reweighting is designed to allow for engagement with poor ESG performers rather than just divestment and complement the static ESG metric with one that measures ESG momentum. [15]

The MSCI ESG Universal Index aims to maintain similar sector exposures compared to its parent index. Since the MSCI ESG Rating is a sector relative metric, sector exposures are maintained after reweighting of constituents and aims to maintain country and sector diversity. As shown in the charts above, the ESG Universal Index outperformed the MSCI ACWI Index (which represents 47 developed and emerging markets) by an annual average of 0.40 percentage points starting from the simulated period with a slightly lower level of ESG risk.

Low Carbon

The MSCI Low Carbon Indexes are intended to help identify potential risks associated with the transition to a low carbon economy while representing the performance of the broad equity market. They are the first index series designed to address two dimensions of carbon exposure: carbon emissions and fossil fuel reserves.

MSCI Low Carbon Indexes can be split into two index suites:

The MSCI Global *Low Carbon Target Indexes* re-weight stocks based on their carbon exposure in the form of carbon emissions and fossil fuel reserves. The indexes are designed to achieve maximum carbon exposure reduction and achieve 0.3% (30 basis points) ex ante tracking error target while minimizing the carbon exposure relative to their parent indexes. Counting a tracking error of 0.40 it

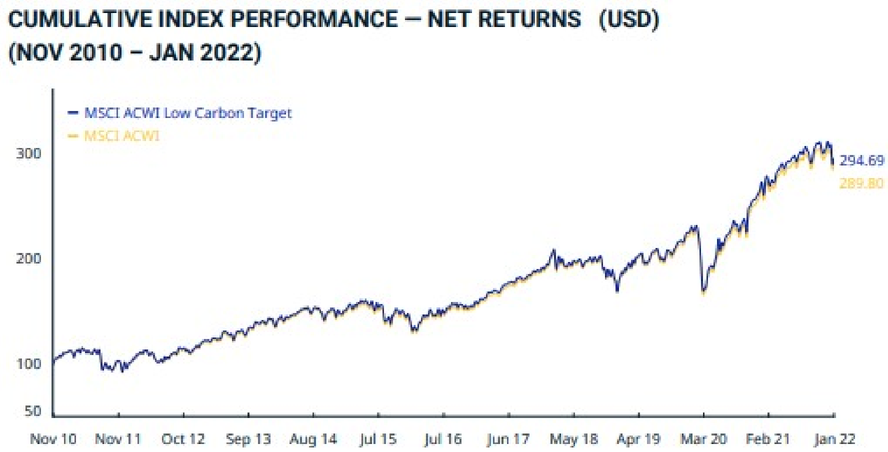

Figure 3.6: ACWI and ESG Low Carbon Target counterpart comparison (2011-2022)

consists of one of the closest ESG alternatives to parent indexes, with an annualized net returns higher by 116 bps from the standard index.

The MSCI Global *Low Carbon Leaders Indexes* aim to achieve at least 50%

reduction in the carbon footprint of the parent index by excluding companies with the highest carbon emissions intensity and the largest owners of carbon reserves (per dollar of market capitalization). They also aim to minimize the tracking error relative to their parent index. [16]

With a tracking error of 0.41 and a net annualized return of 10.17 percentage

Figure 3.7: ACWI and ESG Low Carbon Leaders counterpart comparison (2009-2022)

points it has very similar financial performance with the peer ESG Global Carbon Target Index.

Climate Change

The MSCI Climate Change Indexes consider both the opportunities and risks associated with transition to a low carbon economy, enabling institutional investors and wealth managers to integrate climate risk considerations in their global equity investment process. The indexes are designed to exceed the minimum requirements of the EU Climate Transition Benchmark minimum requirements.

The methodology uses the MSCI Low Carbon Transition score and category to reweight constituents of a parent index to increase its exposure to companies participating in opportunities associated with transition and decrease its exposure to companies exposed to risks associated with transition. The key features of Climate Change Indexes are:

- Shift from carbon intensive to green, aiming to reduce their emissions Indexes and to increase their exposure to climate solutions providers
- Multifunctional because can be implemented as standard alone index can be used as part of an existing ESG strategy

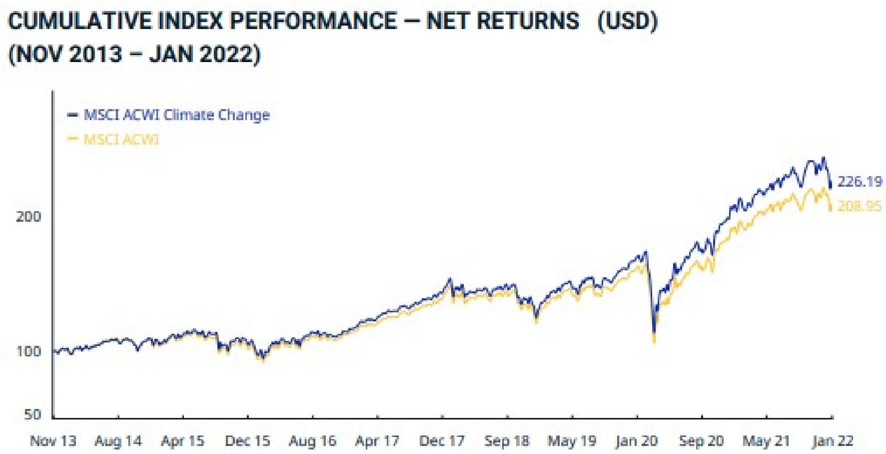

Figure 3.8: ACWI and ESG Climate Change counterpart comparison (2013-2022)

The key uses cases varies from strategic asset allocation to the licensing to create financial products, as a performance benchmark for active managers to engagement tools as can help identify companies that need ti action on climate and support engaging strategies. [17]

It tracks the parent index with 1.27%, over-average with respect to other peers but over the last nine years registered and annualized net return of 10.48 percentage points widening the spread to 106 bps.

3.2.2 Values-based approach ESG Index Funds

SRI

The MSCI Socially Responsible Investing (SRI) Indexes are designed to represent the performance of companies with high Environmental, Social and Governance ratings. The indexes employ a 'best-in-class' selection approach to target the top 25MSCI SRI Indexes Key Features: The MSCI SRI Indexes are designed for investors seeking a diversified index that integrates ESG considerations while also considering investment constraints:

- The indexes target companies with high ESG Ratings.
- Excludes companies whose products have negative social or environmental impacts or are involved in controversies.
- Targets a 25% representation of each sector's market cap.
- Aims to Exclude companies whose products have negative social or environmental impacts.
- Designed to minimize the index's carbon intensity by removing companies involved in Thermal Coal mining and power generation.

The index is a capitalization weighted index that provides exposure to companies with outstanding Environmental, Social and Governance (ESG) ratings and excludes companies whose products have negative social or environmental impacts. [18] During the 11 yers period from 2011 to 2022, it registered a higher net annualized return of 12.88% compared to a lower performance by the parent showing a reduction of 119 bps.

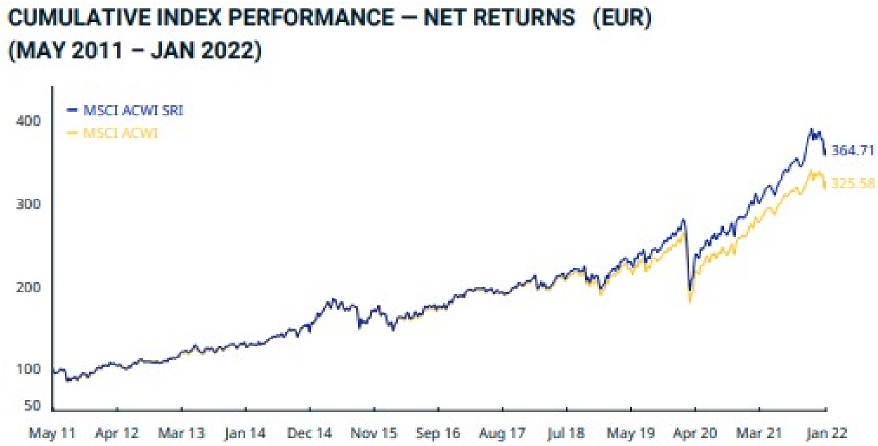

Figure 3.9: ACWI and ESG SRI counterpart comparison (2011-2022)

ESG Screened

The MSCI ESG screened indexes are designed for institutional investors and aim to exclude companies:

- associated at all with controversial or nuclear weapons and deriving 5
- that derive 5% or more revenues from thermal coal and oil sands extraction .
- that are not in compliance with the United Nations Global Compact (UNGC) principles.

The indexes incorporate these exclusions while seeking to maintain a profile similar to market cap indexes. The suite of six indexes is available as a standard offering for easier access and implementation. The exclusions have been selected to span the three pillars of Environmental, Social and Governance (ESG) investing which reflect investors' most common concerns. The key features of ESG Screened methodology are to incorporate common exclusions while aiming for a similar profile as market cap indexes and the design aiming to be easy to use and efficient for investors who seek off the shelf ESG exclusion index. [19]

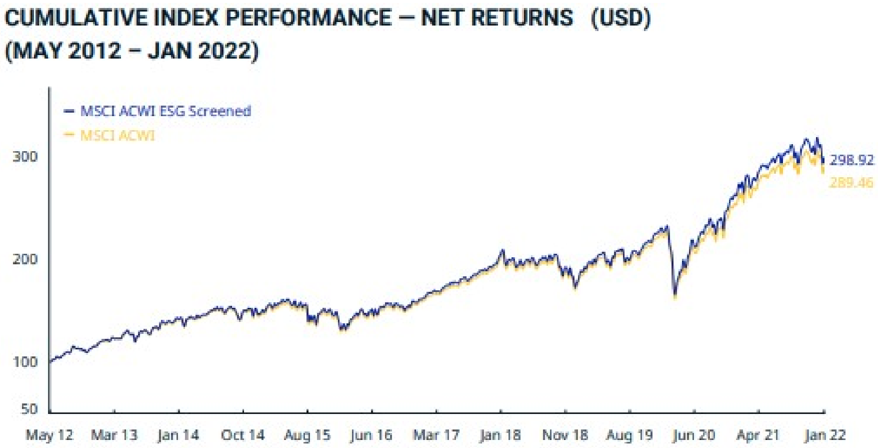

Figure 3.10: ACWI and ESG Screened counterpart comparison (2012-2022)

The comparison graph above track a similar trend for both the indexes with the ESG Screened version annualized net returns at 11.98% and a tracking error of 0.48 percentage points.

3.2.3 Additional Indexes

In the Values-based approach is also possible to encounter:

- Ex Tobacco Involvment and Fossil Fuel Indexes: these indexes have been developed for institutional investors, including pension funds and universal owners who wish to avoid investments in companies involved in the tobacco or fossil fuel businesses. The identification of this companies is based on data from MSCI ESG Research.

- Faith Based or Custom ESG indexes: these indexes are calculated using ESG criteria specified by clients and applied across developed or emerging markets, countries or regions.

3.2.4 Impact-based approach ESG Index Funds

Sustainable Impact

MSCI ESG Research is introducing tools and data designed to help institutional investors measure their alignment with the Sustainable Development Goals (SDGs) adopted by the United Nations. MSCI ESG Research grouped the 17 (SDGs) into five actionable themes: basic needs, empowerment, climate change, natural capital and governance.

The MSCI ACWI Sustainable Impact Index aims to identify companies that derive at least 50one of the world's social and environmental challenges, as defined by the United Nations Sustainable Development Goals (SDGs. The Sustainable Impact categories include: nutritious products, treatment of major diseases, sanitary products, education, affordable housing, loans to small and medium size enterprises, alternative energy, energy efficiency, green building, sustainable water, and pollution prevention. To be eligible for inclusion in the Index, companies must generate at least 50or more of the Sustainable Impact categories and maintain minimum environmental, social and governance (ESG) standards. [20]

The graph highlights how in 2020 the track error of the ESG index climbed exponentially as it did the value in USD, stabilizing in the last 12 months at a very high 7% tracking error with a higher market cap. During the years the net annualized returns averaged around 12.5%, over 100 bps higher then the parent index.

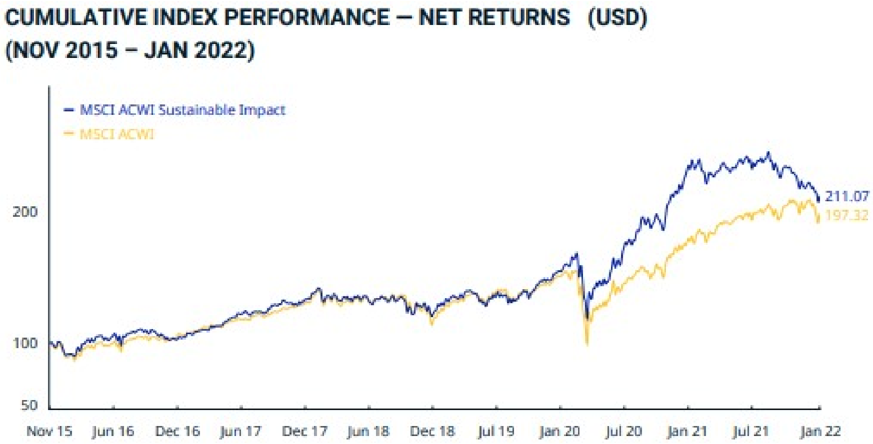

Figure 3.11: ACWI and ESG Sustainable Impact counterpart comparison (2015-2022)

Global Environment

The MSCI Global Environment Indexes are comprised of securities of companies that derive at least 50from environmentally beneficial products and services. The indexes are based on key environmental themes: Alternative Energy, Sustainable Water, Green Building, Pollution Prevention or Clean Technology. The indexes aim to serve as benchmarks for investors seeking exposure to companies whose primary source of revenues increase the efficient use of scarce natural resources or mitigate the impact of environmental degradation. MSCI calculates the Global Environment Index and 5 thematic sub-indexes. [21]

The example in figure shows how the MSCI Global Environment reacted with a more than average growth after the covid-19 market crash of 2020 compare to MSCI ACWI IMI and MSCI World. This performance clearly support the thesis of higher resilience with respect to market crash of the ESG-related index funds compared to their parents. Out of 264 constituents there is a single company accounting for 44.95% of index weight which is Tesla Inc, followed by Digital reality trust with

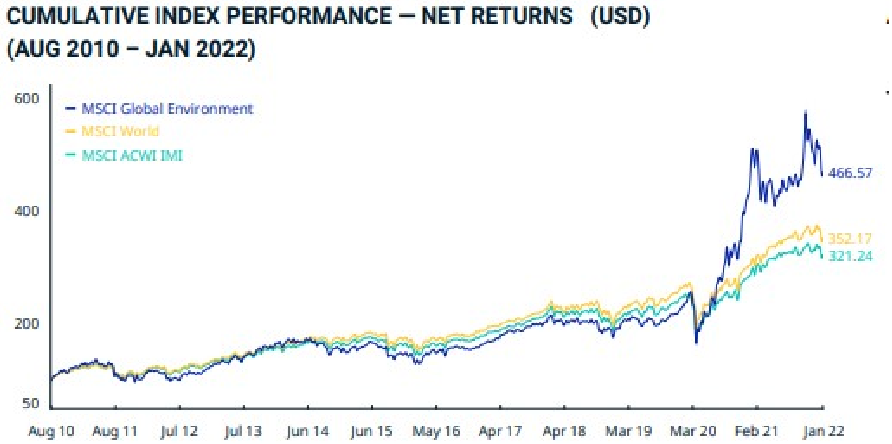

Figure 3.12: MSCI Global Environment, World and ACWI IMI comparison (2010-2022)

2.40% and Nio ADR, another strong player in the electric vehicle industry with 1.90%.

These indexes include Low Carbon, Fossil Fuels Exclusion Thematic Indexes and others. Institutional inverstors may need to consider how climate change may present risks and opportunities and how to manage carbon exposure in their portfolios, These indexes are designed to support various low carbon investment strategies.

Women's Leadership

The MSCI Europe Women's Leadership Index is based on the MSCI Europe Index, its parent index which includes large and mid-cap stocks across 15 Developed Markets countries. The MSCI Europe Women's Leadership Index aim to represent the performance of companies that exhibit a commitment towards gender diversity among their board of directors and among the leadership positions. The index aims to include companies which lead in their respective countries in terms of female representation in Board and in leadership positions. The european case of such index is the MSCI Europe Women's Leadership index, compared in the graph below with the standard MSCI Europe Index. [22]

Figure 3.13: Europe Index and its ESG Women's Leadership counterpart (2016-2022)

In this case can be seen a worst performance of the ESG counterpart with a 48 bps spread on annualized net returns with a tracking error of 2.12% in the last 12 months.

Chapter 4

Index composition and case studies

4.1 MSCI ESG Index components

ESG indexes and research from MSCI address the evolving needs of institutional investors. They increasingly aim to incorporate ESG considerations into their strategic asset allocation and implementation of investment strategy, based in part on a growing body of research that suggests the existence of a link between ESG and performance over the long term.
MSCI ESG index components are updated on a periodic basis depending on the scope of index and what it is supposed to track.

With indexes that represent the performance of the most relevant environmental, social and governance (ESG) investment strategies, MSCI continues to be the world's largest provider of ESG indexes and research.

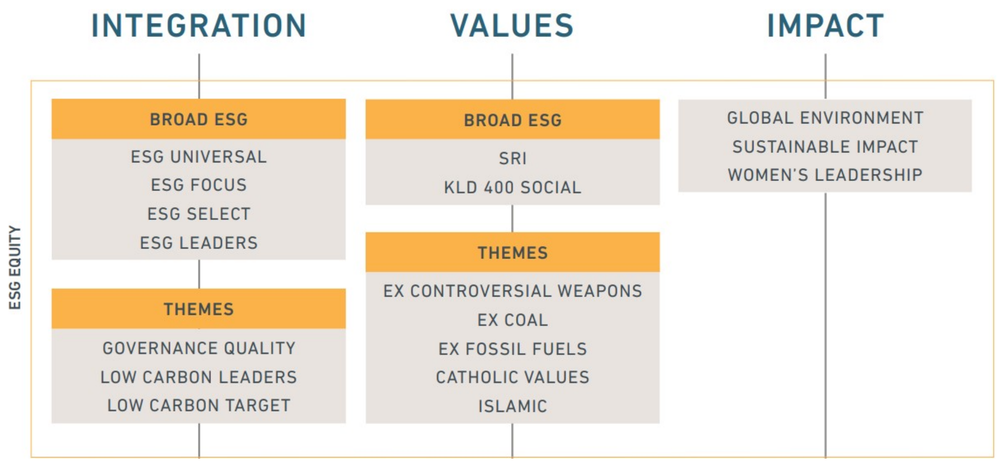

Figure 4.1: ESG Equity Index by MSCI

MSCI's ESG Indexes also provide transparency into ESG sustainability and values alignment, together with the ability to compare holdings, especially for intitutional investors.

4.1.1 Integration-based indexes

MSCI ESG indexes (under the integration category as shown in the 4.1 above diagram) aim to incorporate ESG issues by using companies' MSCI ESG Ratings as part of the index methodology. They:

1. select companies with the highest ESG Ratings in each sector (MSCI ESG Sustainability)

2. tilt the weight of index constituents based on their ESG profile and ESG trend (MSCI ESG Universal)

3. target positive ESG exposure through optimization (MSCI ESG Focus)

MSCI's ESG index integration category maintains the key characteristics of the parent freefloat market capitalization benchmarks, either through an explicit tracking error constraint (MSCI ESG Focus) or by targeting sector weights that reflect the underlying parent indexes, thus limiting the systematic risk introduced by the ESG selection process. The main example of the integration-based indexes is the ESG Leaders Index that is mentioned in the third chapter of this work. The selection universe for the MSCI ESG Leaders Indexes is defined by the constituents of the MSCI Global Investable Market Indexes ("GIMI"). In order to structure the composition of the index they use MSCI ESG Ratings to identify companies that have demonstrated an ability to manage their ESG risks and opportunities. Companies are required to have an MSCI ESG Rating of 'BB' or above to be eligible for inclusion. The MSCI ESG Leaders Indexes use MSCI ESG Controversies Scores to identify companies that are involved in very serious controversies involving the ESG impact of their operations and/or products and services. Companies are required to have an MSCI ESG Controversies Score of 3 or above to be eligible for inclusion in the MSCI ESG Leaders Indexes. The MSCI ESG Leaders Indexes use MSCI ESG Business Involvement Screening Research and MSCI Climate Change Metrics to identify companies that are involved in the following business activities. Companies that meet the business involvement criteria are excluded from the MSCI ESG Leaders Indexes:

- Controversial Weapons
- Nuclear Weapons
- Civilian Firearms
- Tobacco

- Alcohol
- Conventional Weapons
- Gambling
- Nuclear Power
- Fossil Fuel Extraction
- Thermal Coal Power

Dynamic of composition

The MSCI ESG Leaders Indexes are reviewed on an annual basis coinciding with the May Semi-Annual Index Review of the Parent Index, and the changes are implemented at the end of May. Normally, MSCI uses MSCI ESG Research data (including MSCI ESG Ratings, MSCI ESG Controversies Scores and MSCI Business Involvement Screening Research) for the rebalancing of the MSCI ESG Leaders Indexes. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. At each Annual Index Review, the eligible universe is updated, and the composition of the index is reassessed in order to target 50capitalization of each sector of the Parent Index. The MSCI ESG Leaders Indexes are also reviewed on a quarterly basis to coincide with the regular Index Reviews of the Parent Indexes. The changes are implemented at the end of February, August and November. The pro forma indexes are in general announced nine business days before the effective date. For the Quarterly Index Reviews, MSCI ESG Ratings, MSCI ESG Controversies Score assessments and MSCI BISR data are taken as of the end of the month preceding the Index

Reviews, i.e., January, July and October. For some securities, this data may not be published by MSCI ESG Research by the end of the month preceding the Index 1 ESG Trend is defined as the latest change in ESG Rating over the previous 12 months. A security without any change in ESG Rating over the previous 12 months will have a neutral ESG Trend. Also, companies that receive a re-initiated ESG Rating due to a change in the ESG Ratings Industry are considered to have a neutral ESG Trend. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of the MSCI ESG Leaders Indexes. At the Quarterly Index Reviews, existing constituents are deleted from the MSCI ESG Leaders Indexes if they do not meet the eligibility criteria. Existing constituents that meet the eligibility criteria are retained in the index. Additions, from the eligible securities, are made only to those sectors where the current market capitalization coverage is less than 45%, until the 50% target is reached. Market price movements may cause small deviations in the sector coverage between two Index Reviews. Therefore, in order to minimize turnover, a buffer of 10% is used on the target coverage of 50% to define under-representation. [23]

4.1.2 Values-based indexes

Other indexes focus on single themes or issues, such as the MSCI Low Carbon Target indexes, which are designed to achieve a target level of tracking error while minimizing carbon exposure. Indexes in the integration category are designed to help investors efficiently integrate ESG considerations into their core asset allocation without deviating from broad market benchmarks. MSCI's ESG index value category aims to enable investors to align their values, or faith, with their investment processes. As example to be taken into consideration is the MSCI

Global Environment Index. The MSCI Global Environment Index is a free float-adjusted market capitalization weighted index designed to maximize its exposure to environmental impact themes. The Index is comprised of companies that focus on offering products or services that contribute to a more environmentally sustainable economy by making a more efficient use of limited global natural resources. The MSCI Global Environment Index aims to include companies with exposure to one or more of the following categories of the MSCI Sustainable Impact Metrics:

1. Alternative Energy
2. Energy Efficiency
3. Green Building
4. Sustainable Water
5. Pollution Prevention and Control
6. Connectivity – Digital Divide

MSCI also constructs the following indexes designed to include companies with exposure to individual themes, referring to each one of the Sustainable Impact Metrics stated above.

Dynamic of composition

To reduce index turnover and enhance index stability, different buffer rules are applied for securities which have a relevant exposure to the Environmental Impact themes between 40are retained in the index as long as they meet eligibility criteria and their cumulative exposure to the Environmental Impact themes does not fall below 40the index as long as they meet the eligibility criteria and their exposure to the relevant Environmental Impact theme does not fall below 40However, if an existing constituent remains in the buffer zone for two consecutive years, the security would be deleted at the subsequent Index Review. In addition to the annual and quarterly index review common to every index of MSCI, the value-based approach needs Sustainable Impact Metrics to be taken into account. MSCI designs SIMs to identify companies that derive revenue from products or services with positive impact on the society and the environment. The Sustainable Impact Metrics are comprised of six Environmental Impact categories and seven Social Impact categories arranged by theme. This framework could be leveraged to assess the extent companies' products and services address at least one of the major social and environmental challenges, as defined, for example, by the UN Sustainable Development Goals (UN SDGs). [24]

Pillar	Themes	Categories
Environmental Impact	Climate Change	1. Alternative energy
		2. Energy efficiency
		3. Green building
	Natural Capital	4. Sustainable water
		5. Pollution prevention and control
		6. Sustainable agriculture
Social Impact	Basic needs	7. Nutrition
		8. Major disease treatments
		9. Sanitation
		10. Affordable real estate
	Empowerment	11. SME finance
		12. Education
		13. Connectivity - Digital divide

Figure 4.2: Sustainable Impact Metrics Taxonomy by MSCI

4.1.3 Impact-based indexes

The impact category groups indexes, such as the MSCI Sustainable Impact Index, include companies whose core business addresses at least one of the world's social and environmental challenges, as defined by the United Nations Sustainable Development Goals. The peculiar part of the eligible universe definition of this kind of Indexes is the general treatment of corporate events.

Dynamic composition

In the MSCI ESG Screened Indexes aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor's participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. No new securities will be added (except where noted below) to the Indexes between Index Reviews. For cases where additions are noted below, securities will be added to the index only if added to the parent index. [25]

Ongoin Event Related Changes	
EVENTI TYPE	EVENT DETAILS
New additions to the Parent Index	A new security added to the parent index (such as IPO and other early inclusions), will not be added to the index.
Spin-Offs	All securities created as a result of the spin-off of an existing index constituent will not be added to the index at the time of event implementation.
Merger or Acquisition	For Mergers and Acquisitions, the acquirer's post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index. If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.
Changes in Security Characteristics	A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

4.2 Patagonia

It's worth, ast the end of thias work, to mention a company that is an excellent example of ethics over profit and which included the fight against climate change in its corporate mission even before any natural disaster caused alarm. This is the case of Patagonia, based in California and world leader in the production and distribution of equipment for outdoor activities in mountainous areas and related clothing.

In this case, not only its ESG standards are very high, but it has pioneered innovation in a number of aspects: from the organisation of family-based work, the creation of in-house nurseries, and attention to the environment and to people. This approach has led the company to exponential growth which, unfortunately, has only made global headlines in recent years.

One of the most significant examples that can be extrapolated from Patagonia is the "don't buy this jacket" advertising campaign, relating to Black Friday 2011, in which they laid bare the production impact of one of their garments, probably far lower than its competitors, in an attempt to make people aware that they should only buy it if necessary. The campaign was a success, introducing Patagonia to a much wider audience and shining an even brighter spotlight on the already controversial environmental issue. A shining example of a purpose-driven company.

4.3 Conclusions

At the end of the discussion, it is possible to highlight the results of the comparison carried out, which shows that the MSCI rating is the most complete compared to the competition, both from a qualitative and quantitative point of view. The process that leads to the creation of these indices is in fact more structured and effective. This is also supported by the importance of the positive relationship between environmental, social and governance performance and purely financial performance: in the majority of the indices taken into consideration, in fact, the ESG counterpart, i.e. filtered against ethical criteria, outperforms the market effectively. The continuous updating by the main player of the ESG rating guarantees always up-to-date data on the impact of the businesses and has become increasingly specific over the years. ESG Ratings are better for index actively managed funds then as a purely impact measurement for single investments. This is due to the fact that ESG ratings can vary over time and do not take into consideration the vision of the company, resulting in a blurry picture of a company's interest in pursuing carbon neutrality and contribute to climate change mitigation.

On the other hand, a critical point to be highlighted is the lack of a standard for the attribution of ratings by the various organisations, which, while analysing the same corporate aspects quantitatively, lack an effective comparative measure. The standard has only been achieved with the introduction of the sustainability report, which is currently optional and does not provide for a control process on the data reported by the company.

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