RESEARCH INSIGHT

Understanding MSCI ESG Indexes: Methodologies, Facts and Figures

October 2023

Guido Giese
Managing Director, MSCI Research

Ashish Lodh
Executive Director, MSCI Research

Manish Shakdwipee
Executive Director, MSCI Research

Saurabh Katiyar
Executive Director, MSCI Research

Contents

Executive summary

In recent years, ESG-related indexes have seen immense growth, in terms of both their number and the assets benchmarked against them. Investors often aim to capture more than one objective through capital allocation to an ESG index. They may want to align their objectives to an investment policy by applying selective exclusions, or they may want to improve risk-adjusted returns through the integration of financially relevant ESG factors. An alternative approach to ESG integration is impact investing, where investors aim to promote positive environmental and social change through investing.

To cater to these varying needs and requirements, MSCI has developed a range of ESG indexes, which this paper looks in to in detail. As investment objectives are often intertwined, most ESG index methodologies offer a different combination of values- or constraints-based consideration and integration of financially relevant MSCI ESG Ratings.

Values-based objectives or constraints are usually implemented by applying exclusionary screens to the parent benchmark index before the integration of MSCI ESG Ratings, which capture financially relevant ESG factors. The integration of ESG ratings can either use a weight-tilt methodology, a rank-and-select approach or optimization techniques.

While constituent selection or weight-tilt methodologies offer the advantage of simplicity and transparency, the use of optimization techniques in index construction can in some cases offer an advantage — for instance, when investors want to minimize the trade-off between ESG integration on the one hand and index diversification and tracking error on the other, and/or to control for potential industry, country or style-factor exposures. An alternative area where optimization can be useful is when investors want to overlay ESG integration with another objective, such as the integration of equity style factors or the mitigation of carbon risks. Impact investing, which is another way of integrating ESG considerations into a benchmark, is beyond the scope of this paper.

Based on the long-term financial risks and performance of the different indexes, we observed that although exclusions are effectively a constraint that reduces the opportunity set and diversification, the application of exclusions in the MSCI ESG Indexes showed a slightly positive effect on their risk characteristics. Additionally, the integration of MSCI ESG Ratings showed a clear reduction in financial risk measures across all integration methodologies and a slight improvement in returns (after controlling for other factor contributions) during the study period.

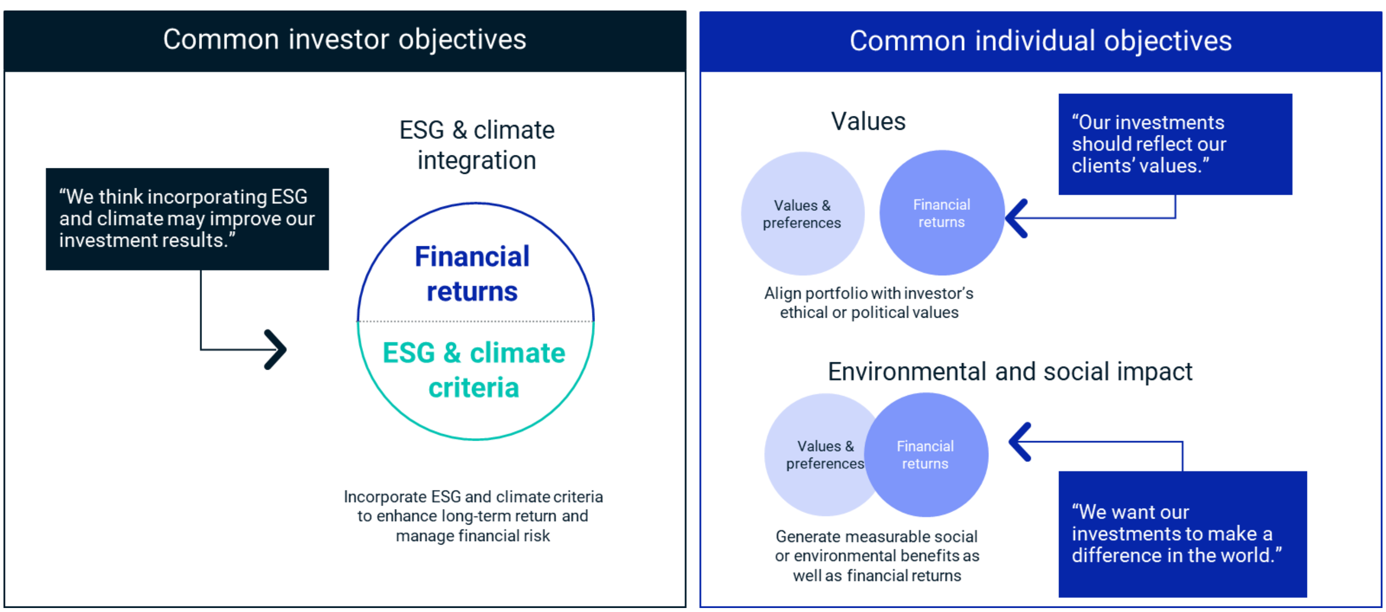
Introduction

The growth of ESG investing has led to a proliferation of ESG strategies, both active and passive. This reflects a more diverse set of investor objectives and improved technical capability to implement more-tailored solutions, as well as the increased breadth and quality of available ESG data. The purpose of this paper is to explain the different methodology variants one can use to integrate ESG considerations into a benchmark and assess the differences of these approaches in terms of financial and ESG characteristics.

The integration of ESG into benchmarks enables investors to address their ESG-related investment objectives, which at a high level can be grouped into three categories:

1. **ESG integration**, which serves a financial objective where investors would like to incorporate ESG-related information into their investment process to identify companies that are better at managing ESG-related risks and opportunities than their peers.
2. **Values and constraints**, which help investors align their portfolios with their values or investment constraints.
3. **Impact investing**, which focuses on investments in companies that can accelerate positive environmental and social change in areas that are important to the investor, instead of merely avoiding exposures to activities deemed environmentally and socially negative through exclusions.

Exhibit 1: Objectives in ESG investing



Source: MSCI ESG Research

In the financial industry, benchmarks are used at a strategic level (i.e., as policy benchmarks for defining the eligible investment universe or helping determine asset allocation), as well as at an implementation level (i.e., as a performance benchmark for actively or passively managed allocations or as a benchmark for financial products). Therefore, integrating ESG into an investor's set of benchmarks is one way of building a consistent framework for the integration of ESG across the entire portfolio.

MSCI ESG Indexes

This paper focuses on MSCI ESG Indexes, which incorporate values and constraints through exclusionary screens and apply techniques for ESG ratings integration that allow broader market exposure. All MSCI ESG Indexes follow transparent and fully rules-based index-construction methodologies that allow for cost-efficient index replication.

In principle, ESG indexes are based on a broad market-capitalization benchmark. Depending on investors' objectives, different ESG indexes can be designed using one or more of the following index-methodology components:

1. **Exclusions**: Removing certain companies from the underlying benchmark universe to align the portfolio with investors' values and constraints. All index methodologies discussed in this paper start with an exclusionary screen. It is important to note that exclusions can follow different investor motivations:

    - Values-based reasons — e.g., divesting from weapons manufacturing or to comply with international standards such as the UN Global Compact.
    - Constraints — e.g., institutional investors who may face legal restrictions from investing in controversial weapons manufacturers.
    - Economic reasons — investors who may want to mitigate certain business risks, such as avoiding exposure to fossil fuels to mitigate the risk of stranded assets.

    Some of these exclusions can be industrywide, such as the exclusion of tobacco producers, whereas others are company-specific, such as the exclusion of companies that have breached the UN Global Compact.

2. **Selection** of the best-rated companies: The MSCI ESG Leaders Index selects the best-rated 50% of companies in terms of free-float market capitalization, whereas the MSCI Socially Responsible Investing (SRI) Index selects the best 25%.[1] Both indexes perform the selection per Global Industry Classification Standard (GICS®) sector and subregion to avoid regional and sector biases.[2]

3. **Weight tilt** of companies within the benchmark universe: The MSCI ESG Universal Index tilts the market-capitalization weights of components using a scaling factor between 0.5 and 2.0, which aggregates a company's MSCI ESG Rating and ESG-rating trend in a simple robust combined ESG score, as shown in Exhibit A1 in the appendix.

4. **Optimization**: The MSCI ESG Focus Index maximizes the index-level ESG score within the benchmark universe subject to a tracking-error constraint. In addition to this, optimization also offers the possibility to combine equity-style-factor exposures with ESG exposure (Alighanbari et al. 2017 and Giese et al. 2018b).

[1] For more details on the security-selection process, refer to the MSCI ESG Leaders Indexes and MSCI SRI Indexes methodology documents available on msci.com.
[2] Industry classification is based on GICS, which is the global industry classification standard jointly developed by MSCI and S&P Global Market Intelligence.

All MSCI ESG Indexes presented in this paper use the MSCI ACWI Index as the underlying universe and then draw on the following MSCI ESG datasets for integrating ESG:

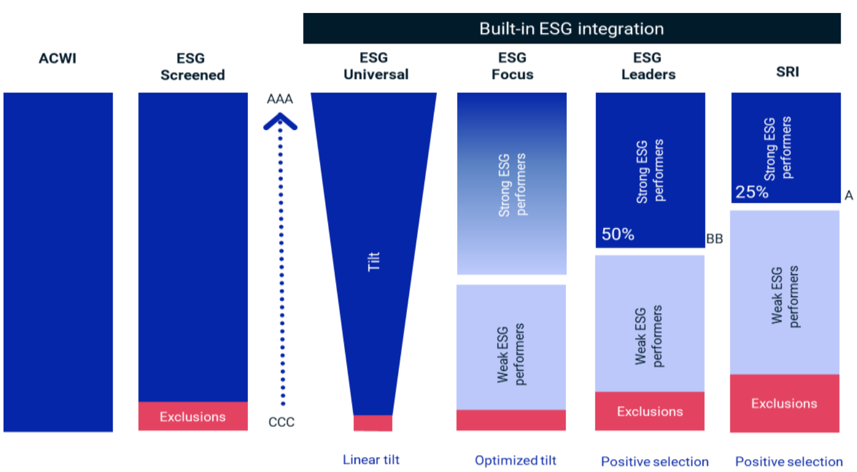
- **MSCI ESG Scores and Ratings**[3] provide a forward-looking assessment of a company's exposure to financially relevant ESG-related risks and opportunities and its ability in managing them. These MSCI ESG scores are mapped onto MSCI ESG Ratings ranging from CCC to AAA. A related datapoint is "ratings trend," which indicates change in a company's ESG rating, which could be upgrade, downgrade or no change, compared to its previous assessment.
- **MSCI's controversy scores** provide an assessment of an ongoing situation or controversial events that have been linked to companies and their severity for stakeholders. Scores range between 0 (very severe) to 10 (no recent incidents).
- **MSCI's business-involvement screens** provide an analysis regarding the percentage of revenues companies derive from certain business activities such as alcohol, tobacco or thermal-coal production.

The integration of financially relevant ESG considerations is based on MSCI ESG Scores, whereas exclusionary screens/index-eligibility criteria use MSCI's controversy scores and business-involvement screens.

Exhibit 2 summarizes MSCI's series of standard ESG indexes, which are based on the MSCI ACWI Index universe and use one or more of the four ESG-integration methodologies described above.

It is interesting to note that all MSCI ESG Indexes shown in Exhibit 2 apply some exclusions, with controversial weapons and red-flag controversies representing the minimum level of exclusions across all indexes. This illustrates how in practice the achievement of financial objectives through ESG is almost always implemented alongside a reflection of social or reputational considerations. Exhibit A2 in the appendix provides an overview of controversies and business-involvement-based exclusion screens for each index.

Exhibit 2: MSCI ESG Indexes and their application



All of the above MSCI ESG Index methodologies apply certain exclusion screens (based on controversies and business-involvement screens) marked in red. Light blue indicates companies that are not selected for the index due to low MSCI ESG Ratings. Gradient fills denote indexes that use optimization techniques. Source: MSCI

[3] The index methodologies and analysis presented in this paper use MSCI ESG Research's industry-adjusted ESG scores.

Exhibit 3 summarizes the index methodology for each of the MSCI ESG Indexes. The range covers approaches that perform a best-in-class selection of MSCI ESG Ratings and result in market-capitalization weights (the MSCI ESG Leaders and MSCI SRI Indexes); approaches that reflect MSCI ESG Ratings and rating changes by tilting the market-capitalization weights of the benchmark's components toward better-rated companies and rating upgrades (MSCI ESG Universal Index); and approaches that use optimization techniques that focus on higher MSCI ESG Ratings and change the weights away from market-capitalization weights (MSCI ESG Focus Index).

Exhibit 3: Standard MSCI ESG Indexes and construction methodology

Index	Index construction
MSCI ESG Screened	Market-capitalization-weighted
MSCI ESG Universal	Market-capitalization-weight tilt from 0.5 to 2.0 depending on: • MSCI ESG Rating • MSCI ESG Rating change (upgrade, neutral or downgrade)
MSCI ESG Focus	Optimized index-level ESG score under tracking-error and sector constraints
MSCI ESG Leaders	Market-capitalization-weighted Best-in-class selection of top 50% companies in terms of free-float market capitalization per GICS sector and subregion (to avoid regional or sector biases) depending on: • MSCI ESG Rating • MSCI ESG Rating change (upgrade, neutral or downgrade) • MSCI ESG Scores
MSCI SRI	Market-capitalization-weighted Best-in-class selection of top-25% companies in terms of free-float market capitalization per GICS sector and subregion (to avoid regional or sector biases) depending on: • MSCI ESG Rating • MSCI ESG Rating change (upgrade, neutral or downgrade) • MSCI ESG Scores

Source: MSCI

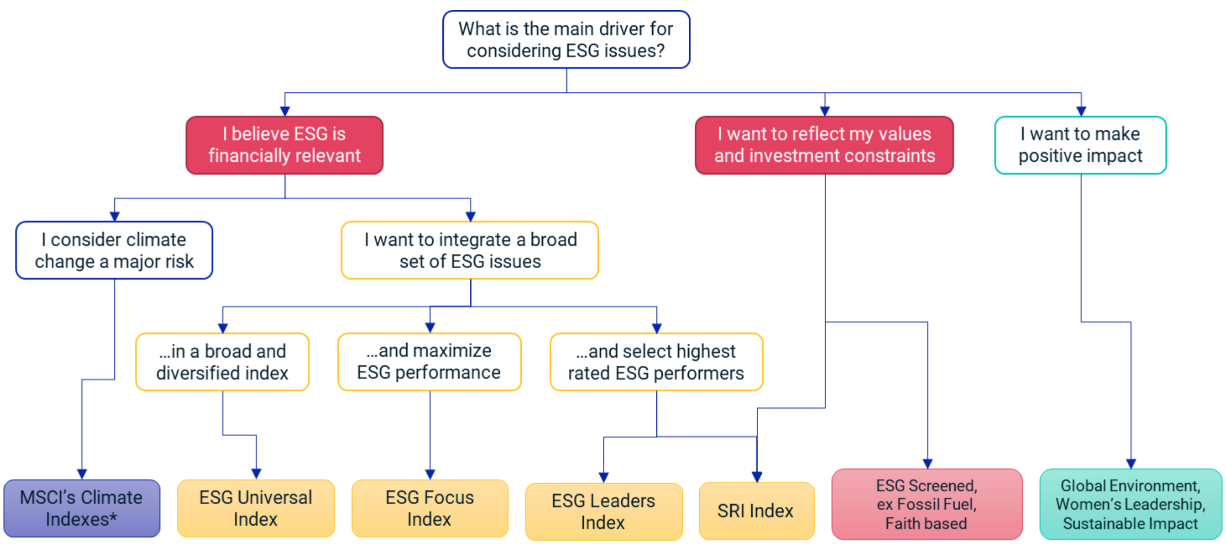
It should be noted that MSCI's range of methodologies for ESG indexes goes beyond the indexes discussed in this paper and includes indexes that relate to impact investing and addressing climate-transition and physical risks. There is also an increasing number of investors who use customized MSCI indexes to combine ESG exposure with a climate-risk overlay and/or an overlay in equity style factors.

The different MSCI ESG Index methodologies reflect different investor preferences, which may be assessed using the following questions:

- **Objective**: What is my ESG-related investment objective? Do I want to reflect values or investment constraints by exclusionary screens only, or do I want to combine ESG-rating integration with exclusions?
- **Index methodology**: Do I want to use sophisticated portfolio-optimization techniques to manage the trade-off between ESG integration and other variables (such as tracking error and country and sector deviations) efficiently? Or do I prefer simpler and more-transparent index methodologies based on component selection or component reweighting?
- **Breadth**: Do I prefer a broad ESG benchmark that keeps almost the full opportunity set of the benchmark in the index portfolio, or do I wish to focus my investments on a smaller number of companies with the highest MSCI ESG Ratings?

These questions, reflecting different investor preferences, may be displayed in the form of a decision tree (Exhibit 4) that leads investors in a systematic way to the ESG-index approach that may be best-suited to their needs. At a top level, investors may first want to decide their investment objective — e.g., whether they want to focus on a pure exclusionary screening approach or want to follow financial objectives by integrating MSCI ESG Ratings. They may then want to decide on the index methodology they want to use and the desired index breadth.

Exhibit 4: Decision tree to choose an MSCI ESG Index based on investors' preferences



*Refer to *"Understanding MSCI Climate Indexes: Methodologies, Facts and Figures"* for further information on MSCI Climate Indexes.*
Source: MSCI

ESG characteristics

As highlighted, the different standard MSCI ESG Indexes address different types of investor preferences in terms of values- and constraints-based exclusions on the one hand and integration of financial objectives on the other. To better understand how these indexes reflect values-based and financial objectives, we will take a closer look at their profiles along two dimensions: the exclusions[4] (in terms of number of exclusions from the underlying MSCI ACWI Index universe and the related benchmark weights of these exclusions) as a measure for values-based considerations; and investment constraints and the index-level ESG score as a measure for financially motivated objectives. We use the number of exclusions based on business involvement and controversies (and the related benchmark weight) as a measure for values-based considerations, since it demonstrates the reduction in the benchmarks' opportunity set that is not driven by the financial objective of integrating MSCI ESG Ratings.

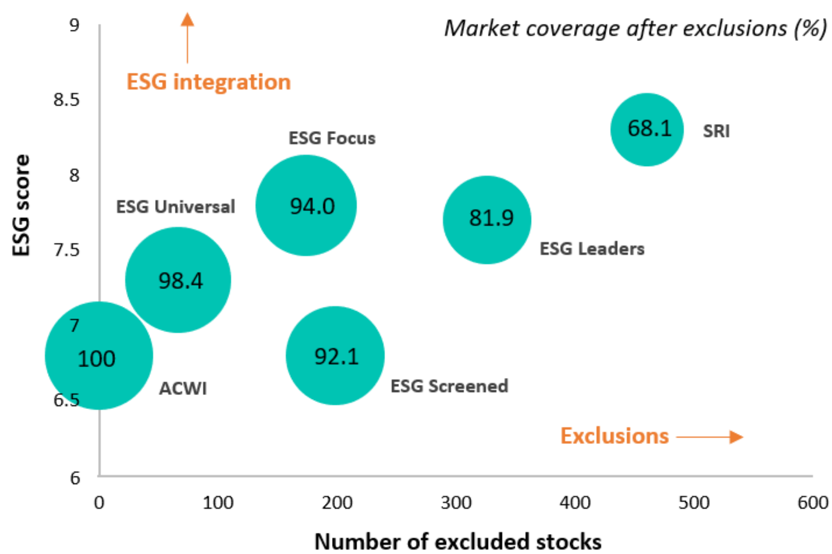
Exhibit 5 shows this two-dimensional ESG-quality[5] versus exclusions profile for these indexes. We observe that for all standard MSCI ESG Indexes, except the purely exclusion-based MSCI ESG Screened Index, the integration of financially relevant ESG factors is intertwined with values-/constraints-based considerations — i.e., these indexes showed a level of ESG integration along both dimensions compared to the benchmark during the study period, which is what they were designed to achieve.

We also see the product split between indexes that are primarily focused on integrating financially focused ESG factors (the MSCI ESG Universal and MSCI ESG Focus Indexes), indexes that focus solely on exclusions of socially negative activities (MSCI ESG Screened Index) and indexes that reach a significant level of ESG integration along both dimensions (the MSCI ESG Leaders and MSCI SRI Indexes).

[4] The exclusions count shown in Exhibit 5 only counts exclusions based on business-involvement and controversy screens. The exclusion count does not include stocks that are not selected from the benchmark universe due to the ESG-ratings integration methodology — i.e., the optimization in the MSCI ESG Focus Index or the best-in-class selection in the MSCI ESG Leaders and MSCI ESG SRI Indexes.

[5] The ESG quality of an index is defined as the index-weighted average ESG score of its constituents.

Exhibit 5: ESG quality of constituents versus number of exclusions



Data as of March 31, 2023. Bubble sizes represent market coverage after exclusions but before the integration of MSCI ESG Ratings. The chart shows the number of stocks excluded from each index as part of the first step in the index methodology — i.e., the exclusionary screen (x-axis) and resulting market-capitalization coverage (bubble size). The y-axis shows the average ESG score after the second step of the index methodology — i.e., the integration of MSCI ESG Ratings. Note that the MSCI ESG Screened Index is the only one that does not integrate MSCI ESG Ratings. Source: MSCI

To probe deeper into the ESG characteristics of these indexes, Exhibit 6 compares the exposure of each index to MSCI's ESG leaders (AAA- and AA-rated companies), ESG average (A-, BBB- and BB-rated companies) and ESG laggards (B- and CCC-rated companies). The result is quite intuitive: At the lower end of the ESG quality scale, the MSCI ACWI Index was predominately invested in ESG-average companies. By contrast, at the upper end of the ESG scale the MSCI SRI Index was mainly invested in ESG leaders and showed no exposure to ESG laggards. The other MSCI ESG Indexes showed ESG exposures between these two extremes.

The indexes reflect different ways investors may wish to treat low-ESG-quality companies: Some investors may want to divest entirely from companies with low MSCI ESG Ratings, which can be achieved by a best-in-class selection (the MSCI ESG Leaders and MSCI SRI Indexes). On the other hand, some investors may prefer to reduce their exposure (MSCI ESG Universal Index) and to engage with companies with low ESG quality.

Next, we take a closer look at the values and constraints profiles of these indexes with a focus on their exposure to tobacco production, controversial weapons and red- and orange-flag controversies (Exhibit 6). The results are quite intuitive and in line with the exclusionary screens explained in Exhibit A2 in the appendix: All standard MSCI ESG Indexes showed a considerable reduction in exposure to related companies, with the MSCI SRI Index showing the strongest exposure reduction to all the aforementioned activities.

Exhibit 6: ESG profile overview

Metrics	MSCI ACWI	MSCI ESG Screened	MSCI ESG Universal	MSCI ESG Focus	MSCI ESG Leaders	MSCI SRI
ESG quality: Exposure in %						
ESG Leaders (AAA-AA)	41.9	43.1	56.7	65.5	63.2	79.4
ESG Average (A-BB)	55.0	54.0	42.3	33.7	36.8	20.6
ESG Laggards (B-CCC)	3.1	2.9	1.0	0.8	0.0	0.0
Values & constraints profile: Exposure in %						
Tobacco involvement	0.9	0.0	0.7	0.2	0.4	0.0
Ties to controversial weapons	0.6	0.0	0.0	0.0	0.0	0.0
Orange flag controversies	32.2	31.7	29.2	28.4	23.7	14.0
Red flag controversies	0.7	0.0	0.0	0.0	0.0	0.0

Data as of April 28, 2023. Metrics for orange- and red-flag controversies highlight the cumulative weight of constituents involved in controversies with orange and red flags, respectively. The tobacco-involvement metric highlights the cumulative weight of constituents classified as tobacco producers and/or that derive revenue from the distribution, retail or supply of tobacco-related products. The scope of screen may vary across indexes. Please refer to respective methodology documents for a detailed explanation of the values-based screens and constraints. Source: MSCI

Climate characteristics

Assessing carbon risks in investment portfolios has become increasingly important in recent years. While MSCI ESG Indexes are not explicitly designed for and thus do not target an improved carbon footprint, standard MSCI ESG Indexes address some climate investing objectives by excluding companies with exposure to thermal-coal power and fossil-fuel extraction and reserves.

All MSCI ESG Indexes except the MSCI ESG Universal Index[6] apply fossil-fuel screens (fossil-fuel extraction/reserves or thermal-coal power) at varying levels of involvement to reduce their exposure to potential stranded assets (Exhibit A2 in the appendix). Furthermore, MSCI ESG Indexes integrate financially relevant climate risk and opportunities by integrating MSCI ESG Ratings, which consider climate change as one of the financially relevant ESG risks under the methodology's environmental pillar.

As a result, all MSCI ESG Indexes have shown an overall improved carbon profile at a global level in our study (Exhibit 7). As stated, while most MSCI ESG Indexes are not designed for and thus do not target an improved carbon footprint, the MSCI ESG Screened Index does target a minimum 30% reduction in emissions intensity relative to the parent index.

[6] MSCI ESG Universal Indexes are designed as broad indexes with minimal exclusions and thus do not apply fossil-fuel screens.

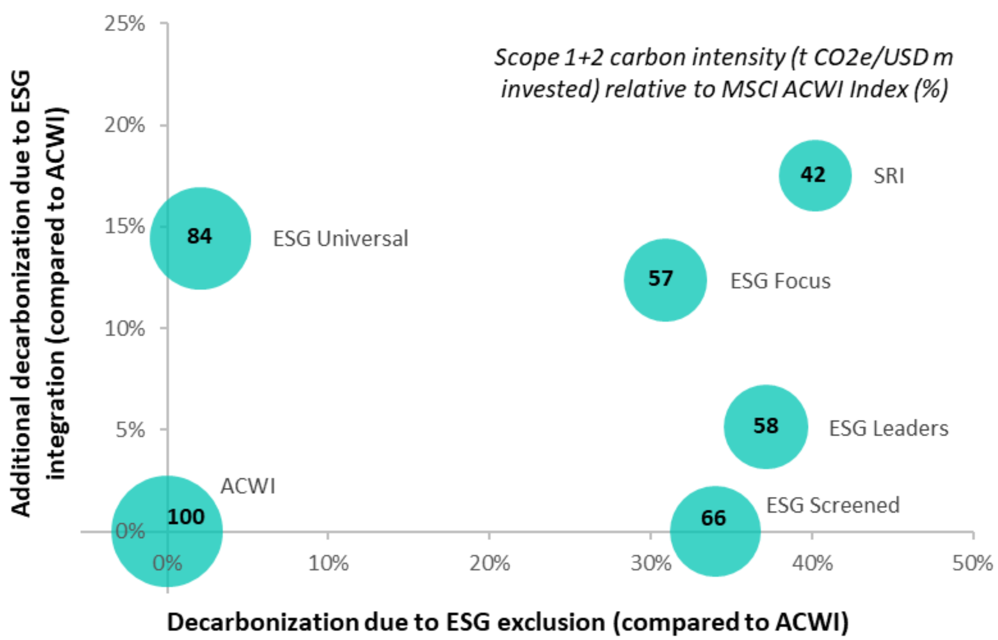
Exhibit 7: Climate profile of MSCI ESG Indexes

Metrics	MSCI ACWI	MSCI ESG Screened	MSCI ESG Universal	MSCI ESG Focus	MSCI ESG Leaders	MSCI SRI
Carbon emissions (t CO2e/USD m invested)	97	64	81	55	56	41
Weighted average carbon intensity (t CO2e/USD m sales)	151	103	134	90	93	84
Potential carbon emissions (t CO2e/USD m invested)	1689	477	1207	1186	320	0
Low carbon transition score	6.1	6.3	6.2	6.2	6.3	6.5
Low carbon transition management score (% top quartile)	66.9	68.5	70.4	74.3	74.9	78.1
Clean technologies solutions revenue (weighted average %)	5.3	5.4	5.7	6.4	7.6	10.7
Green-/fossil-fuel-based net revenue exposure	2.3	8.7	2.7	3.6	11.4	121.3

Data as of April 28, 2023. Source: MSCI

It is interesting to note that the improvement in carbon footprint was due to both exclusionary screens and (where applicable) the integration of MSCI ESG Ratings, as shown in Exhibit 8 below.

Exhibit 8: Decarbonization versus parent index through exclusions and MSCI ESG Ratings



Data as of April 28, 2023. Bubble sizes represent Scope 1+2 carbon intensity — as measured by tons of CO2 equivalent (t CO2e) per USD 1 million invested — relative to the MSCI ACWI Index. Source: MSCI ESG Research

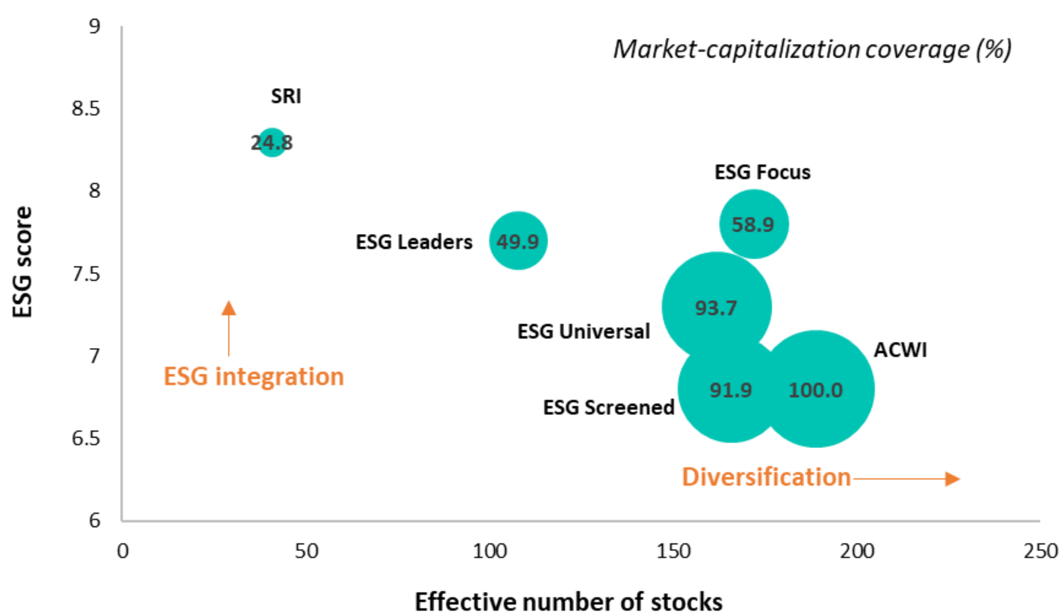
Index characteristics

In the following section we look at the potential trade-off between ESG quality and diversification, as well as the ESG-quality-versus-tracking-error profile of the different indexes.[7]

Exhibit 9 shows the trade-off between the level of ESG quality versus diversification (which we measure as the effective number of stocks[8] in the index), as well as the market-capitalization coverage of the respective indexes. Not surprisingly, the index methodologies with the lowest level of ESG quality (the MSCI ESG Universal and MSCI ESG Screened Indexes) had the broadest and most-diverse portfolios with market-capitalization coverage not far below 100%, whereas the MSCI SRI Index, with its 25% best-in-class selection, marked the other end of the scale with the highest level of ESG quality and the most concentrated portfolio.

In the middle range of this trade-off, we can observe the advantage of using an optimization process in the index construction versus a simple best-in-class selection: The MSCI ESG Focus Index used optimization to achieve a considerably higher level of ESG quality, while maintaining a more diverse portfolio compared to the MSCI ESG Leaders Index, which is based on a 50% best-in-class selection per sector and subregion and is market-capitalization-weighted.

Exhibit 9: ESG quality versus diversification and market coverage (MSCI ACWI Index)



Data as of March 31, 2023. Bubble sizes represent the market coverage of the indexes. Source: MSCI

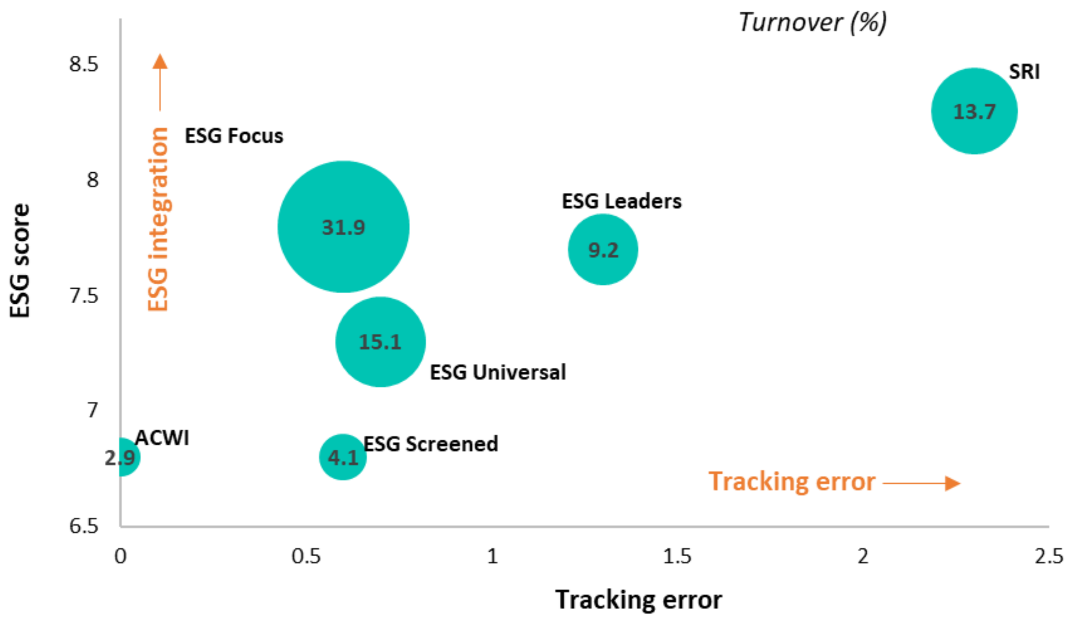
[7] We measure ESG quality as the index-level ESG score.

[8] The effective number of stocks in a portfolio is defined as 1 / Herfindahl index, which is a standard measure for portfolio diversification.

The analysis of ESG quality versus tracking error (in Exhibit 10) shows a similar result: There was a clear trade-off between the two. Again, the MSCI ESG Focus Index showed the advantage of optimization through achieving a higher level of ESG quality per unit of tracking error compared to the MSCI ESG Leaders Index, due to the use of an explicit tracking-error constraint in the optimization process. At the same time, Exhibit 10 shows that using an optimization process led to higher index turnover in the MSCI ESG Focus Index.

All MSCI ESG Indexes showed higher levels of turnover than that of their parent benchmark because they inherit the turnover from the parent — as well as incur turnover due to the change of a stock's ESG characteristics and, in the case of optimized methodologies, a stock's financial characteristics. The MSCI ESG Universal Index showed higher turnover than the MSCI ESG Leaders and MSCI SRI Indexes, because index weights are influenced by both MSCI ESG Ratings and ESG-momentum scores.

Exhibit 10: ESG quality versus tracking error and turnover (MSCI ACWI Index)



Data from Nov. 30, 2012, to March 31, 2023. Bubble sizes represent the turnover of the indexes. Source: MSCI

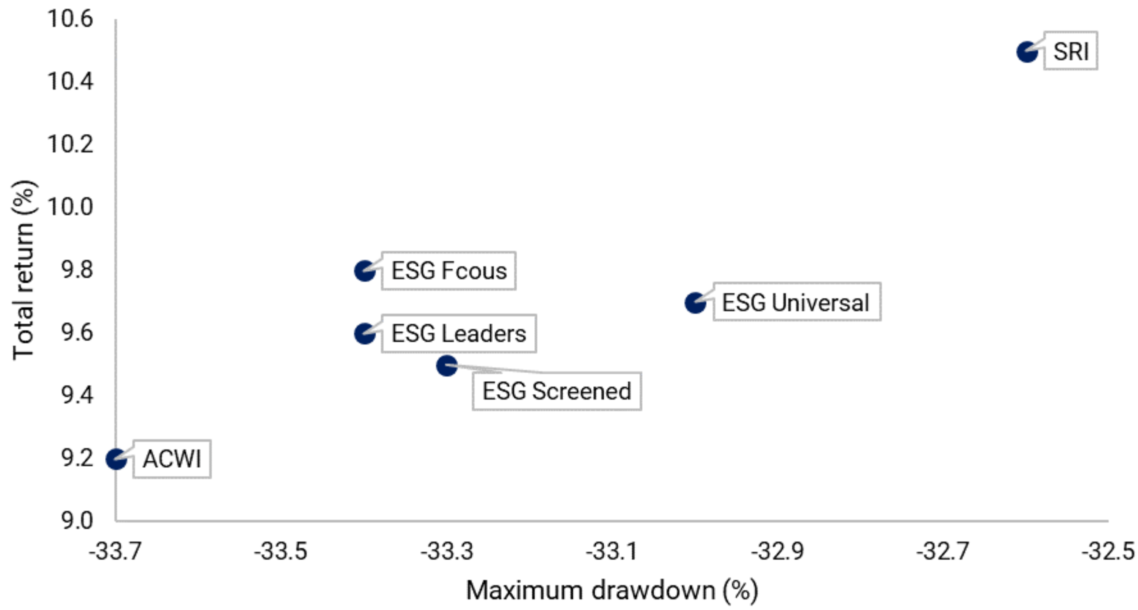
Financial risk profile

Exhibit 11 compares the risk-return profile of these ESG indexes for the live track period of the MSCI ESG Leaders and MSCI SRI Indexes from Nov. 30, 2012, to March 31, 2023. We use maximum drawdowns as a proxy to measure extreme risk to verify the argument, found by academic researchers, that companies with good ESG characteristics show lower levels of idiosyncratic tail risks and are more crisis-resilient when systematic shocks occur (Giese et al. 2019a).

We observe that all ESG indexes exhibited a reduction in drawdown risk over the long term, with the MSCI ACWI SRI Index having provided the highest protection against drawdown risk.

In general, performance figures depended on the respective ESG-integration methodology. Nevertheless, all ESG index methodologies outperformed the market-capitalization-weighted parent index over the analysis period.

Exhibit 11: Risk-return chart of MSCI ESG Indexes



Data from Nov. 30, 2012, to March 31, 2023. Source: MSCI

An important question for indexes combining an exclusionary screen, as the first step, with a methodology to integrate financially driven ESG factors, as a second step, is the financial impact of each step.

This question is also important in verifying two arguments brought forward by both academic researchers and industry practitioners.[9] First, the argument that exclusion screens effectively reduce the opportunity set for investing and therefore constitute a mathematical portfolio constraint, which cannot be beneficial from the perspective of risk-adjusted returns. At best, similar financial results may be expected compared to investing in the full market.

Second, the argument that ESG integration is about incorporating financially relevant information into the portfolio-construction process, which may show a financial benefit (Giese et al. 2019a). These two arguments have also been referred to as “values versus value” in literature on ESG investing.[10]

To assess these two arguments, we split the performance analysis shown in Exhibit 11 into the risk-return implications of applying the index-specific exclusionary screens only (step 1) and the risk-

[9] Hamilton et al. (1993), Luther et al. (1994) and Asness (2017).

[10] Eccles and Strohle (2018) explore the historical origins and recent evolution of various ESG-scoring and -rating approaches, highlighting a distinction between value-driven and values-driven approaches. A common library of ESG data and metrics can be used to reflect either normative preferences (such as scoring companies on contravention of different global norms or involvement in controversial business lines or practices) or financially driven considerations.

return characteristics of the combined methodology (step 1 + step 2). In the following, we focus on those indexes that combine an exclusionary screen with a financially focused ESG-integration step — i.e., the MSCI ESG Universal, ESG Focus, ESG Leaders and SRI Indexes.

Each index is represented twice: first, the exclusions step — and second, the final index, combining exclusions with ESG integration.

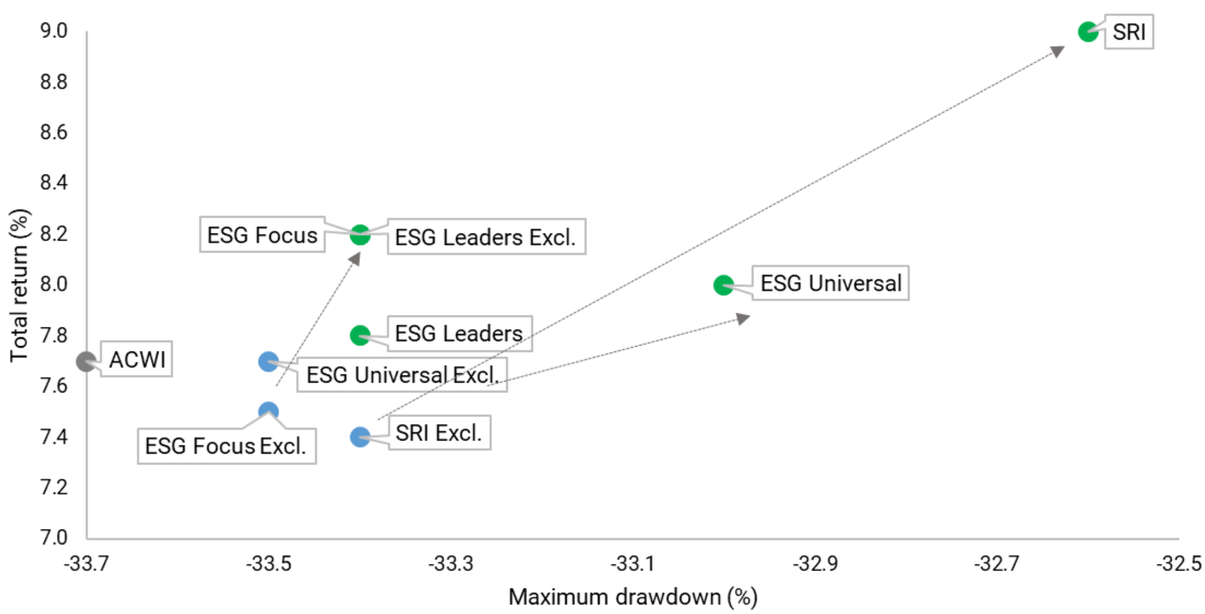
Exhibit 12 shows that the application of exclusionary screens reduced the maximum drawdowns for all indexes. The findings were in line with expectations as these screens are designed to address the headline ESG and climate risks (such as severe ESG controversies and risk of asset stranding). Excluding companies exposed to such activities should reduce tail risk or extreme risk, which is captured in the maximum drawdown metrics. The level of risk reduction was largest in the case of the MSCI ESG Leaders and MSCI SRI Indexes, where the screens were the strongest (i.e., they resulted in more exclusions).

Since values-based exclusions result in implicit industry and factor exposures, the performance impact of screening was determined by those exposures. Except for exclusions from the MSCI ESG Leaders Index, the active performance was either zero or negative.

The integration of financially focused risk factors, in the second step, had a favorable impact on the performance of most ESG indexes. The stronger the magnitude of ESG integration, the higher performance impact, with the MSCI ACWI SRI Index exhibiting the highest performance improvement after ESG integration (1.35% annually).

ESG integration further reduced the drawdown risk for the MSCI ACWI ESG Universal, MSCI ESG Focus and MSCI ACWI SRI Indexes. The MSCI ESG Leaders Index was an exception where best-in-class ESG selection did not impact the drawdown risk substantially.

Exhibit 12: Risk-return contributions from both ESG-integration steps



Data from Nov. 28, 2014, to March 31, 2023. Exclusionary-screen-only indexes are represented by blue dots and the final ESG indexes are represented by green dots. Source: MSCI

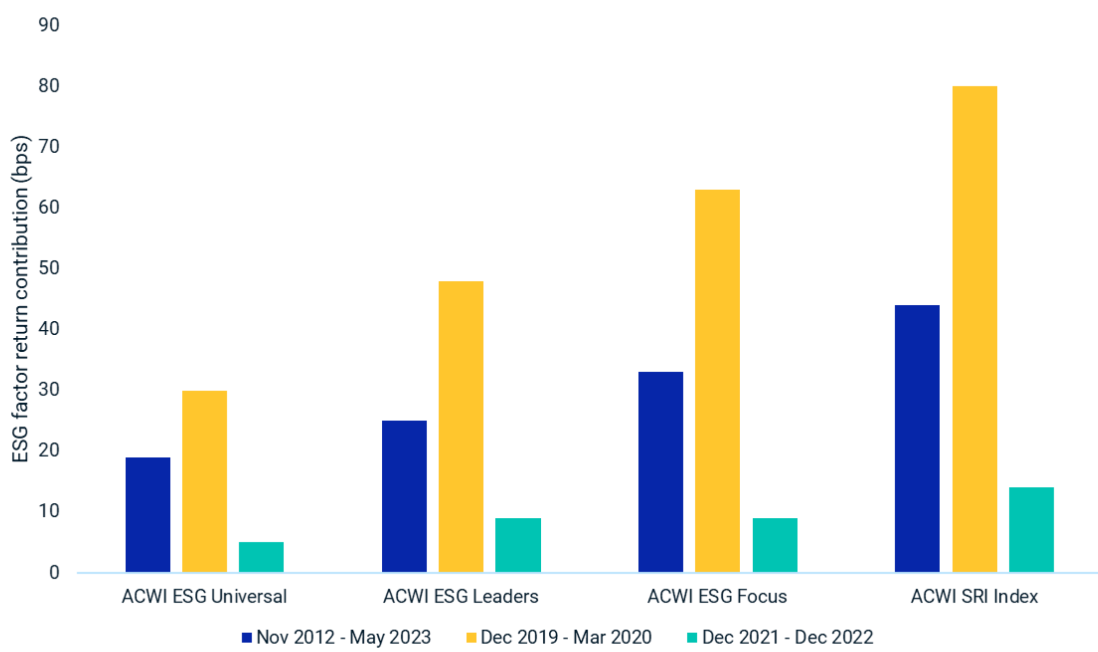
MSCI ESG Indexes during the financial market crisis

A common question for investors is whether ESG integration helps in risk mitigation. While the MSCI ESG Indexes have a relatively short common history (from November 2012 onward), some of the recent equity-market stress during crises like the COVID-19 outbreak and Russia-Ukraine war provide an opportunity to evaluate how these indexes performed versus the parent index.

Our previous research (Giese et al. 2019a) examined whether companies with high MSCI ESG Ratings were less exposed to systematic risks and therefore more resilient to shocks during our study period. The COVID-19 outbreak — which led to a very short-term market crisis that was limited in scope — was the first real-world test, since the 2008 global financial crisis, of the resilience of companies with high MSCI ESG Ratings. Similarly, the Russia-Ukraine war led to an energy crisis and a sharp outperformance of the energy sector, raising questions about ESG integration's impact on financial performance.

To gain insight into the performance of the MSCI ESG Indexes, we broke down their active returns relative to those of the MSCI ACWI Index using the MSCI EFMGEMLT risk model.[11] We evaluated the active performance contribution of ESG as a factor over the parent index's full history (November 2013 to May 2023), since the start of the COVID-19 crisis (Q1 2020) and during the energy crisis spurred by the Russia-Ukraine war (2022).

Exhibit 13: ESG factor contribution to MSCI ESG Indexes' returns



[11] MSCI EFMGEMLT refers to the MSCI Emerging and Frontier Markets and Global Equity Model for Long Term Investors.

The chart shows the active return (over the MSCI ACWI Index) contribution to the MSCI ACWI ESG Indexes from the ESG factor. The risk model is EFMGEMLT. Source: MSCI

As seen in Exhibit 13, ESG positively contributed to performance of the MSCI ESG Indexes not only during the full history but during the two specific crisis periods we evaluated. While the scale of performance contribution was smaller during 2022, it was nevertheless positive in nature.

As noted in Giese et al. 2019b, performance characteristics of the MSCI ESG Indexes may differ across regions. The appendix of this report contains summary tables for performance and risk characteristics of MSCI's global and regional ESG indexes.

Conclusion

MSCI has developed a range of ESG indexes to address the preferences of various investors. At the top level, these indexes can be classified along two dimensions or investment objectives:

1. The extent and nature of exclusions that reflect investors' values and investment constraints, which we measured as the number of companies and their weight excluded within the MSCI ACWI Index, based on index-specific exclusion criteria; and
2. The extent of integration of financially focused ESG scores and data, which we measured as the improvement in the index-weighted ESG score.

A third investment approach not elaborated on in this paper is impact investing, which focuses on driving positive social change through investing.

The MSCI ESG Screened Index only applies exclusions, whereas the MSCI ESG Focus Index has a strong profile of integrating ESG quality with relatively few exclusions. The MSCI ESG Leaders and MSCI ESG SRI Indexes are more narrow strategies with a broad set of exclusions and high levels of ESG quality.

It is important to emphasize that all MSCI indexes that implemented some level of financially focused ESG integration displayed a clear reduction in risks during our study period, especially drawdown risks compared to the parent index, with higher levels of ESG quality having shown stronger reduction in risks. All indexes showed better performance figures than their parent index during the study period.

When integrating ESG considerations we observed an apparent trade-off between ESG integration on the one hand and tracking error and index diversification on the other. This is where the MSCI ESG Focus Index showed the advantage of using an optimization technique, compared to simple index-construction methodologies, by achieving a better trade-off.

Looking at financial risk and performance results, we observed that exclusions showed a slightly positive effect on the risk characteristics of the indexes during the study period. Integrating MSCI ESG Ratings showed a clear reduction in financial risk measures across all integration methodologies and a slight improvement in returns (after controlling for other factor contributions) during the study period.

References

Alighanbari, M., Doole, S., and Melas D. (2017). "Managing Risks Beyond Volatility." *Journal of Index Investing*, Vol. 8, No. 2, pp. 68-76.

Asness, C. (2017). "Virtue is its Own Reward: Or, One Man's Ceiling is Another Man's Floor." AQR research report, May 2017.

Eccles, R. and Stroehle J. (2018). "Exploring Social Origins in the Construction of ESG Measures."

Giese, G., Lee, L.-E., Melas, D., Nagy, Z., and Nishikawa, L. (2019a). "Foundations of ESG Investing: How ESG Affects Equity Valuation, Risk and Performance." *Journal of Portfolio Management,* Vol. 45, No. 5, pp. 69-83.

Giese, G., Lee, L.-E., Melas, D., Nagy, Z., and Nishikawa, L. (2018), "Foundations of ESG Investing Part 2: Integrating ESG into Benchmarks." MSCI Research Insight, May 2018.

Giese G., Lee L.-E., Melas, D., Nagy, Z., and Nishikawa, L. (2018b), "Foundations of ESG Investing Part 4: Integrating ESG into factor strategies and active portfolios." MSCI Research Insight, May 2018.

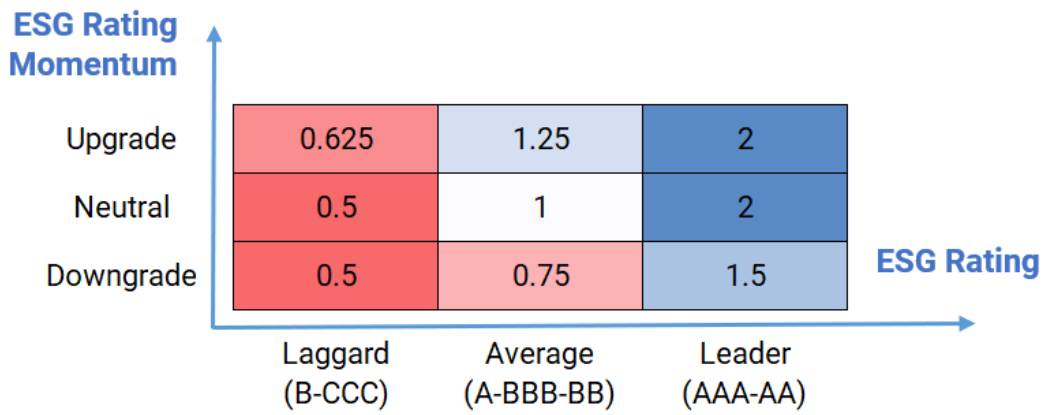
Giese, G., Lee, L.-E., Melas, D., Nagy, Z., and Nishikawa, L. (2019b). "Performance and Risk Analysis of Index-Based ESG Portfolios." *Journal of Index Investing*, Vol. 9. No 4, pp. 46-57.

Hamilton, S., Jo, H., and Statman, M. (1993). "Doing Well While Doing Good? The Investment Performance of Socially Responsible Mutual Funds." *Financial Analysts Journal*, Vol. 49, No. 6, pp. 62-66.

Luther, R. and J. Matatko. (1994). "The Performance of Ethical Unit Trusts: Choosing an Appropriate Benchmark." *British Accounting Review*, Vol. 26, pp. 77-89.

Appendix

Exhibit A1: Combining MSCI ESG Ratings and ESG-rating momentum into a scaling factor



The chart illustrates how MSCI ESG Ratings and MSCI ESG Rating changes are used to calculate a combined ESG score.

Exhibit A2: Exclusion screens in standard MSCI ESG Indexes

Screen	MSCI ESG Screened	MSCI ESG Universal	MSCI ESG Focus	MSCI ESG Leaders	MSCI SRI
Environmental					
Fossil-fuel extraction (thermal coal and oil sands)	√		√	√	√
Fossil-fuel reserves					√
Nuclear power	√			√	√
Thermal coal power	√		√	√	√
Social					
Adult entertainment					√
Alcohol				√	√
Civilian firearms	√			√	√
Controversial weapons	√	√	√	√	√
Conventional weapons				√	√
Gambling				√	√
Genetically modified organisms					√
Nuclear weapons	√			√	√
Tobacco	√		√	√	√
Governance					
Red-flag controversies	√	√	√	√	√
UN Global Impact	√				

Revenue thresholds and scope of exclusion screens may vary among above indexes. Please refer to respective methodology documents for a detailed explanation of the screens and, where applicable, revenue thresholds applied.

Exhibit A3: Profile of global MSCI ESG Indexes

	MSCI ACWI	MSCI ACWI ESG Screened	MSCI ACWI ESG Universal	MSCI ACWI ESG Focus	MSCI ACWI ESG Leaders	MSCI ACWI SRI
Key Metrics						
Total Return (%)	9.2	9.5	9.7	9.8	9.6	10.5
Total Risk (%)	14.3	14.4	14.2	14.4	14.1	14.4
Return / Risk	0.65	0.66	0.68	0.68	0.68	0.73
Sharpe Ratio	0.59	0.6	0.63	0.62	0.62	0.67
Tracking Error (%)	0	0.6	0.7	0.6	1.3	2.3
Historical Beta	1	1.01	1	1.01	0.98	0.99
Number of Constituents	2676	2502	2465	525	1193	573
Turnover (%)	2.9	4.1	15.1	31.9	9.2	13.7
ESG Integration						
ESG Score	6.8	6.8	7.3	7.8	7.6	8.3
ESG Leaders (AAA-AA) (%)	41.7	42.9	56.6	65.5	62.8	78.9
ESG Laggards (B-CCC) (%)	3	2.8	1	0.7	0	0
Index ESG Rating	A	A	AA	AA	AA	AA
Values and Norms						
Tobacco Involvement (%)	0.9	0	0.7	0.2	0.4	0
Civilian Firearms Producers (%)	0.1	0	0.2	0.1	0.3	0
Ties to Controversial Weapons (%)	0.6	0	0	0	0	0
Global Compact Compliance Violation (%)	0.7	0	0	0	0	0
Red Flag Controversies (%)	0.8	0.1	0	0	0	0
Orange Flag Controversies (%)	31.9	31.5	29	28.2	23.9	14.4
Climate Metrics						
Carbon Intensity to EVIC - Scope 1 + 2 + 3	394	291	331	352	258	240
Carbon Intensity to EVIC - Scope 1 + 2	56	41	48	35	35	28
Potential Carbon Emissions (t CO2e/$M Invested)	1689	494	1207	1186	320	0
Fossil Fuel Reserves (%)	6.3	3.3	5.2	5.4	2.5	0
Green Revenues (wtd Avg %)	5.3	5.6	5.7	6.4	7.6	10.7
Green/fossil Fuel-Based Net Revenue Ratio	1.3	3.3	1.5	1.8	4.8	17.1
Companies with SBTi-Approved Targets (%)	37.1	38.2	41.2	40.1	43.4	44.2
Implied Temperature Rise	2.6	2.3	2.4	2.5	2.3	2.4

Data from May 31, 2012 to March 31, 2023. Source: MSCI

Exhibit A4: Profile of developed-market MSCI ESG Indexes

	MSCI World	MSCI World ESG Screened	MSCI World ESG Universal	MSCI World ESG Focus	MSCI World ESG Leaders	MSCI World SRI
Key Metrics						
Total Return (%)	10.9	11.2	11	11	11	11.7
Total Risk (%)	14.2	14.3	14.1	14.3	14.1	14.2
Return / Risk	0.77	0.78	0.78	0.77	0.78	0.82
Sharpe Ratio	0.71	0.73	0.73	0.71	0.73	0.76
Tracking Error (%)	0	0.6	0.7	0.7	1.3	2.4
Historical Beta	1	1.01	0.99	1.01	0.98	0.99
Number of Constituents	1613	1509	1521	493	784	395
Turnover (%)	2.5	3.6	14.7	28.4	8.7	13.7
ESG Integration						
ESG Score	6.9	7	7.4	7.8	7.8	8.4
ESG Leaders (AAA-AA) (%)	44.5	45.8	58.8	66.3	66.5	81
ESG Laggards (B-CCC) (%)	1.5	1.5	0.5	0.7	0	0
Index ESG Rating	A	A	AA	AA	AA	AA
Values and Norms						
Tobacco Involvement (%)	0.9	0	0.7	0.2	0.5	0
Civilian Firearms Producers (%)	0.2	0	0.2	0.2	0.3	0
Ties to Controversial Weapons (%)	0.7	0	0	0	0	0
Global Compact Compliance Violation (%)	0.6	0	0	0	0	0
Red Flag Controversies (%)	0.6	0	0	0	0	0
Orange Flag Controversies (%)	34	33.6	30.5	30.3	25.5	15.7
Climate Metrics						
Carbon Intensity to EVIC - Scope 1 + 2 + 3	360	265	316	340	247	232
Carbon Intensity to EVIC - Scope 1 + 2	46	33	42	33	29	24
Potential Carbon Emissions (t CO2e/$M Invested)	1262	442	1012	1179	306	0
Fossil Fuel Reserves (%)	6.3	3.1	5.2	5.2	2.2	0
Green Revenues (wtd Avg %)	5.4	5.7	5.8	6.5	7.9	11.2
Green/fossil Fuel-Based Net Revenue Ratio	1.3	3.8	1.5	1.8	5.2	18.3
Companies with SBTi-Approved Targets (%)	40.7	42	44.2	42.9	47.6	48.1
Implied Temperature Rise	2.5	2.2	2.4	2.4	2.3	2.3

Data from May 31, 2012, to March 31, 2023. Source: MSCI

Exhibit A5: Profile of USA MSCI ESG Indexes

	MSCI USA	MSCI USA ESG Screened	MSCI USA ESG Universal	MSCI USA ESG Focus	MSCI USA ESG Leaders	MSCI USA SRI
Key Metrics						
Total Return (%)	13.2	13.5	13.5	13.3	13.1	14.3
Total Risk (%)	14.6	14.8	14.5	14.7	14.4	14.8
Return / Risk	0.91	0.92	0.93	0.91	0.91	0.96
Sharpe Ratio	0.85	0.86	0.88	0.85	0.86	0.91
Tracking Error (%)	0	0.6	0.9	0.6	1.9	3.3
Historical Beta	1	1.01	0.99	1	0.98	0.99
Number of Constituents	623	579	590	321	320	154
Turnover (%)	2.6	3.6	14.7	24.8	8.7	14
ESG Integration						
ESG Score	6.6	6.6	7	7.1	7.5	8.3
ESG Leaders (AAA-AA) (%)	35.2	36.1	48	46	58.6	75.8
ESG Laggards (B-CCC) (%)	1.8	1.9	0.7	1.4	0	0
Index ESG Rating	A	A	A	A	AA	AA
Values and Norms						
Tobacco Involvement (%)	0.7	0	0.7	0.1	0.2	0
Civilian Firearms Producers (%)	0	0	0	0	0	0
Ties to Controversial Weapons (%)	1	0	0	0	0	0
Global Compact Compliance Violation (%)	0	0	0	0	0	0
Red Flag Controversies (%)	0	0	0	0	0	0
Orange Flag Controversies (%)	38.4	38.6	34.2	36.5	28.2	16.1
Climate Metrics						
Carbon Intensity to EVIC - Scope 1 + 2 + 3	245	182	234	231	186	211
Carbon Intensity to EVIC - Scope 1 + 2	34	20	33	26	19	19
Potential Carbon Emissions (t CO2e/$M Invested)	680	0	643	0	0	0
Fossil Fuel Reserves (%)	5.3	1.7	4.6	2	0.7	0
Green Revenues (wtd Avg %)	5.9	6.2	6.3	6.4	9.5	14.8
Green/fossil Fuel-Based Net Revenue Ratio	1.4	9.5	1.7	4.7	12.1	20.9
Companies with SBTi-Approved Targets (%)	38.4	40.8	39.1	40.8	46.5	46.3
Implied Temperature Rise	2.4	2.1	2.4	2.4	2.3	2.5

Data from May 31, 2012, to March 31, 2023. MSCI

Exhibit A6: Profile of Europe MSCI ESG Indexes

	MSCI Europe	MSCI Europe ESG Screened	MSCI Europe ESG Universal	MSCI Europe ESG Leaders	MSCI Europe SRI
Key Metrics					
Total Return (%)	8	8.1	8.7	8.5	9.6
Total Risk (%)	16	16	16	15.8	15.6
Return / Risk	0.5	0.51	0.55	0.54	0.61
Sharpe Ratio	0.45	0.46	0.5	0.49	0.56
Tracking Error (%)	0	0.9	1	1.8	3.1
Historical Beta	1	1	1	0.98	0.96
Number of Constituents	439	413	411	216	115
Turnover (%)	2.2	5	13.9	9.2	12.7
ESG Integration					
ESG Score	7.9	8.1	8.2	8.5	8.9
ESG Leaders (AAA-AA) (%)	71.3	75.1	82.4	85.1	89.2
ESG Laggards (B-CCC) (%)	0.5	0.1	0	0	0
Index ESG Rating	AA	AA	AA	AA	AAA
Values and Norms					
Tobacco Involvement (%)	1.2	0	0.8	0.5	0
Civilian Firearms Producers (%)	0.8	0	1	1.6	0
Ties to Controversial Weapons (%)	0	0	0	0	0
Global Compact Compliance Violation (%)	1	0	0	0	0
Red Flag Controversies (%)	1.1	0.2	0.1	0	0
Orange Flag Controversies (%)	31.4	26.2	29.1	26.1	22.7
Climate Metrics					
Carbon Intensity to EVIC - Scope 1 + 2 + 3	550	362	440	312	211
Carbon Intensity to EVIC - Scope 1 + 2	75	55	63	48	28
Potential Carbon Emissions (t CO2e/$M Invested)	2167	1332	1452	1181	0
Fossil Fuel Reserves (%)	6.8	5.5	5.3	4.1	0
Green Revenues (wtd Avg %)	4.5	4.6	4.5	4.9	4.5
Green/fossil Fuel-Based Net Revenue Ratio	0.9	1.2	1.1	1.5	12.6
Companies with SBTi-Approved Targets (%)	58.2	57.2	60.8	62.3	61.3
Implied Temperature Rise	2.2	1.9	2.1	1.9	1.8

Data from May 31, 2012, to March 31, 2023. Source: MSCI

Exhibit A7: Profile of Pacific MSCI ESG Indexes

	MSCI Pacific	MSCI Pacific ESG Screened	MSCI Pacific ESG Universal	MSCI Pacific ESG Leaders	MSCI Pacific SRI
Key Metrics					
Total Return (%)	6.7	6.8	6.8	6.6	6.8
Total Risk (%)	14	14.1	13.9	14.3	14.3
Return / Risk	0.48	0.48	0.49	0.46	0.47
Sharpe Ratio	0.42	0.42	0.43	0.41	0.42
Tracking Error (%)	0	0.6	0.8	1.7	2.6
Historical Beta	1	1.01	0.99	1.02	1
Number of Constituents	448	423	441	207	105
Turnover (%)	2.4	2.9	12	9.7	17.4
ESG Integration					
ESG Score	7.2	7.3	7.6	8.1	8.6
ESG Leaders (AAA-AA) (%)	49.8	52.9	65.2	76.2	96.8
ESG Laggards (B-CCC) (%)	1.7	1.6	0.7	0	0
Index ESG Rating	AA	AA	AA	AA	AA
Values and Norms					
Tobacco Involvement (%)	1.2	0	0.8	1.3	0
Civilian Firearms Producers (%)	0	0	0	0	0
Ties to Controversial Weapons (%)	0	0	0	0	0
Global Compact Compliance Violation (%)	3.2	0	0	0	0
Red Flag Controversies (%)	3.2	0	0	0	0
Orange Flag Controversies (%)	14	14.6	11.6	10.6	2.8
Climate Metrics					
Carbon Intensity to EVIC - Scope 1 + 2 + 3	690	468	545	468	384
Carbon Intensity to EVIC - Scope 1 + 2	64	51	56	63	44
Potential Carbon Emissions (t CO2e/$M Invested)	1302	500	731	744	0
Fossil Fuel Reserves (%)	10	6.4	7.3	7.8	0
Green Revenues (wtd Avg %)	5	5.2	4.7	4.3	3.7
Green/fossil Fuel-Based Net Revenue Ratio	1.7	2.5	1.6	1.3	8.9
Companies with SBTi-Approved Targets (%)	32	32.8	34.9	37.2	47.5
Implied Temperature Rise	2.9	2.6	2.6	2.5	2.3

Data from May 31, 2012, to March 31, 2023. Source: MSCI

Exhibit A8: Profile of emerging-market MSCI ESG Indexes

	MSCI EM (Emerging Markets)	MSCI EM ESG Screened	MSCI EM (Emerging Markets) ESG Universal	MSCI EM (Emerging Markets) ESG Focus	MSCI EM (Emerging Markets) ESG Leaders	MSCI EM (Emerging Markets) SRI
Key Metrics						
Total Return (%)	2.6	2.7	3	3.2	4.4	4.8
Total Risk (%)	16.8	16.8	16.6	17	17	17.9
Return / Risk	0.16	0.16	0.18	0.19	0.26	0.27
Sharpe Ratio	0.11	0.11	0.13	0.14	0.21	0.22
Tracking Error (%)	0	0.6	1.2	1.3	3.2	5.2
Historical Beta	1	1	0.99	1.01	0.99	1.02
Number of Constituents	1064	993	941	317	408	179
Turnover (%)	6.7	7.5	20.9	28.5	12.2	12.3
ESG Integration						
ESG Score	5.5	5.6	6.1	7	6.5	7.6
ESG Leaders (AAA-AA) (%)	19.5	20	28.5	41	34.1	61.1
ESG Laggards (B-CCC) (%)	15.2	13.1	6.6	0.5	0	0
Index ESG Rating	BBB	BBB	A	A	A	AA
Values and Norms						
Tobacco Involvement (%)	0.4	0	0.7	0.1	0	0
Civilian Firearms Producers (%)	0	0	0	0	0	0
Ties to Controversial Weapons (%)	0.4	0	0	0	0	0
Global Compact Compliance Violation (%)	2.1	0.2	0.1	0	0	0
Red Flag Controversies (%)	2.1	0.2	0.1	0	0	0
Orange Flag Controversies (%)	15	14.9	14.1	14.4	11.5	3.4
Climate Metrics						
Carbon Intensity to EVIC - Scope 1 + 2 + 3	669	464	512	455	346	306
Carbon Intensity to EVIC - Scope 1 + 2	138	101	120	73	83	60
Potential Carbon Emissions (t CO2e/$M Invested)	5173	911	3486	649	426	0
Fossil Fuel Reserves (%)	5.9	4.7	5.8	4.3	4.6	0
Green Revenues (wtd Avg %)	4.6	4.6	4.5	5.7	5.8	6.3
Green/fossil Fuel-Based Net Revenue Ratio	1.4	2	1.5	2.7	2.8	8.4
Companies with SBTi-Approved Targets (%)	7.8	8.1	10.4	11.5	10.8	11
Implied Temperature Rise	3.1	2.9	2.9	2.9	2.6	2.7

Data from May 31, 2012, to March 31, 2023. Source: MSCI

Contact us

msci.com/contact-us

AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
São Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
Tokyo	+ 81 3 5290 1555

* toll-free

About MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.

To learn more, please visit www.msci.com.

The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at: https://www.msci.com/index-regulation.

Notice and disclaimer