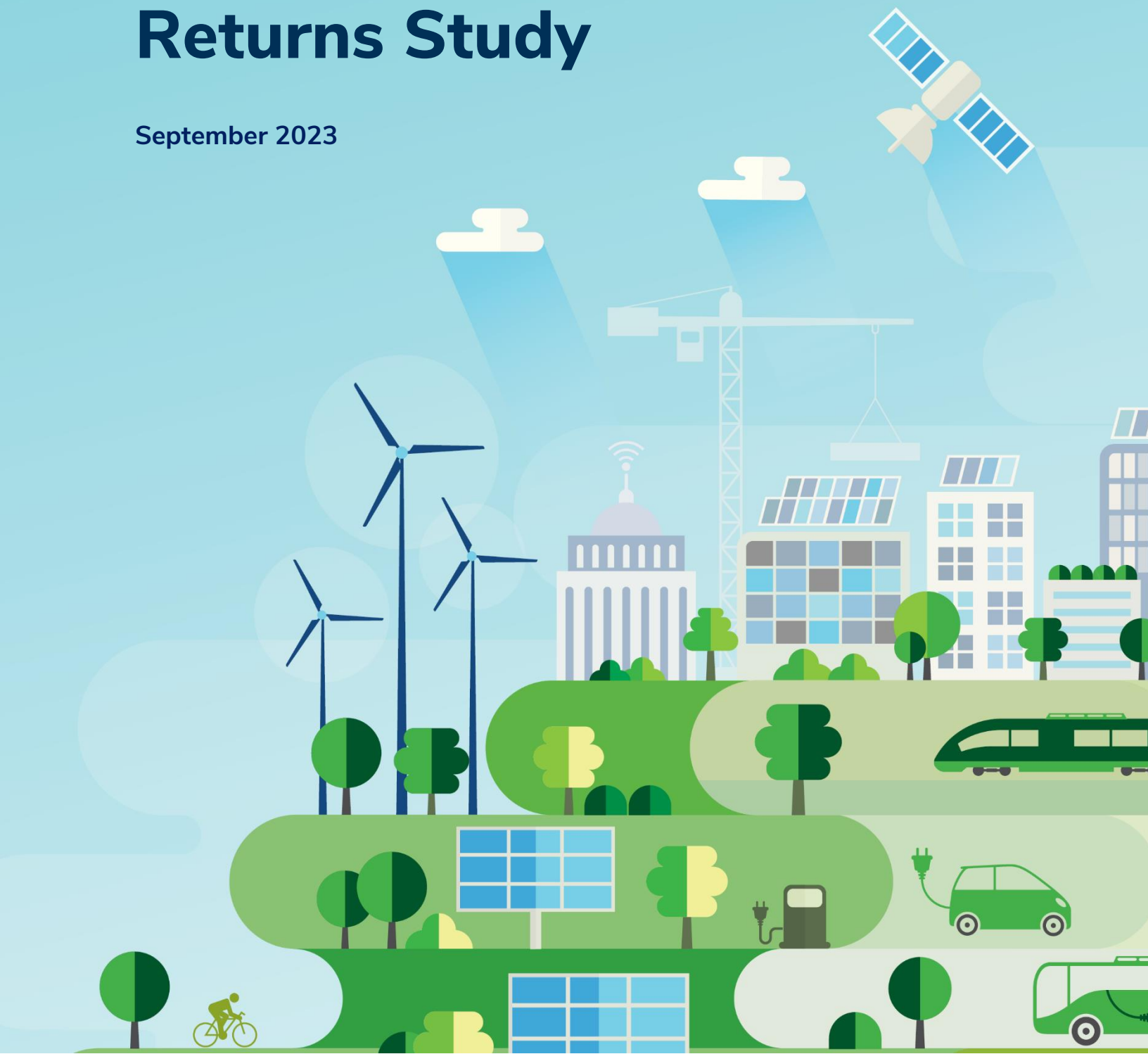
KROLL

ESG and Global Investor Returns Study

September 2023



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Introduction

Kroll is pleased to present our inaugural ESG and Global Investor Returns Study[1,2] Our study examines, globally, the relationship between historical returns of publicly traded companies and their ESG ratings. Our goal was to determine whether companies with better ESG ratings outperform those with worse ratings.

As the relevance of ESG investing has increased for individual investors, asset managers, corporations, regulators and other stakeholders, so has the confusion and lack of clarity about the role of ESG in evaluating investment decisions. The cost of undertaking such strategies, or simply the disagreement with ESG principles, had led to a politization of ESG investing. Yet, ESG investing is simply trying to consider risks and opportunities that may arise from various environmental, social or governance trends. Investors look at all kinds of risks and opportunities as part of their investment decision-making, with ESG factors being just another facet of that evaluation process. Based on global regulatory and financial reporting developments and investment allocation trends, ESG investing is likely to remain an important driver of investment decisions.

To address many of the questions raised by ESG investing, we believe a natural starting point is a quantitative approach that compares stock market return data with ESG company ratings. This allows us to determine whether a relationship exists between ESG ratings and company returns. Our study relies on ESG company ratings published by MSCI.[3]

> **“Our study shows that companies with better ESG ratings generally outperformed those with lower ratings over the 2013-2021 period.”**

We examined over 13,000 companies across a variety of geographies and industries around the globe. We investigated the relationship between a company’s total stock returns (dividends plus capital appreciation) and its MSCI ESG rating over the 2013–2021 period. Specifically, we built investment portfolios comprised of companies rated under each of MSCI’s seven individual ESG rating categories (AAA, AA, A, BBB, BB, B and CCC) and aggregate ratings (Leaders, Average and Laggards) to examine whether an investment strategy focused on companies with better ratings would result in a superior return performance.

Our study is unique due to its comprehensive nature: we examine the correlation between company ESG ratings and returns for four geographic regions (World, North America, Western Europe and Asia) and 12 countries/markets

1 ESG stands for environmental, social, and governance.

2 ESG investing is the consideration of environmental, social, and governance factors alongside financial factors in the investment decision-making process. See, for example: https://www.msci.com/esg-101-what-is-esg.

3 MSCI Inc. is the world’s leading provider of ESG company ratings.

(Australia, Brazil, Canada, China, France, Germany, Hong Kong Special Administrative Region of the People's Republic of China (Hong Kong SAR), India, Japan, South Korea, the United Kingdom (UK) and the U.S.). In addition, within some of these geographies, we further scrutinize the results for 11 industries (as defined by the Global Industry Classification Standard (GICS®) structure): Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Communications Services, Utilities and Real Estate.[4]

The idea behind ESG investing is that if significant capital flows into companies that are considered "good" ESG citizens, they should be able to raise capital at a lower cost (when compared to "bad" ESG citizens).[5] From an investor perspective, a lower cost of capital means that investors should expect lower returns from good ESG companies. In practice, however, expected returns do not always equal realized returns.

Key Insights:

Globally, ESG Leaders earned an average annual return of **12.9%**, compared to an average **8.6%** annual return earned by Laggard companies. This represents an approximately 50% premium in terms of relative performance by top-rated ESG companies.

In the United States, the country with the largest number of rated companies, the ESG Leaders earned an average annual return of **20.3%**, compared to a **13.9%** average annual return earned by Laggard companies. Similar to the findings globally, the relative performance by top-rated ESG companies was nearly 50% stronger than their lower-rated counterparts.

The positive relative performance of ESG Leaders vs. Laggards was generally consistent across **all major geographic regions** and **for most industries**, with some exceptions.

European companies are further along in their ESG journey, according to MSCI. For example, in December 2021, nearly a third of Western European companies were rated as ESG Leaders. In contrast, only 10% of North America and 6% of Asia companies had a Leader rating.

Globally, **Leaders outperformed Laggards** in all industries analyzed, except for Consumer Staples and Health Care. This contradicts the claim by some market analysts that the outperformance of ESG investments (when present) is attributable to the overweighting of Information Technology stocks.

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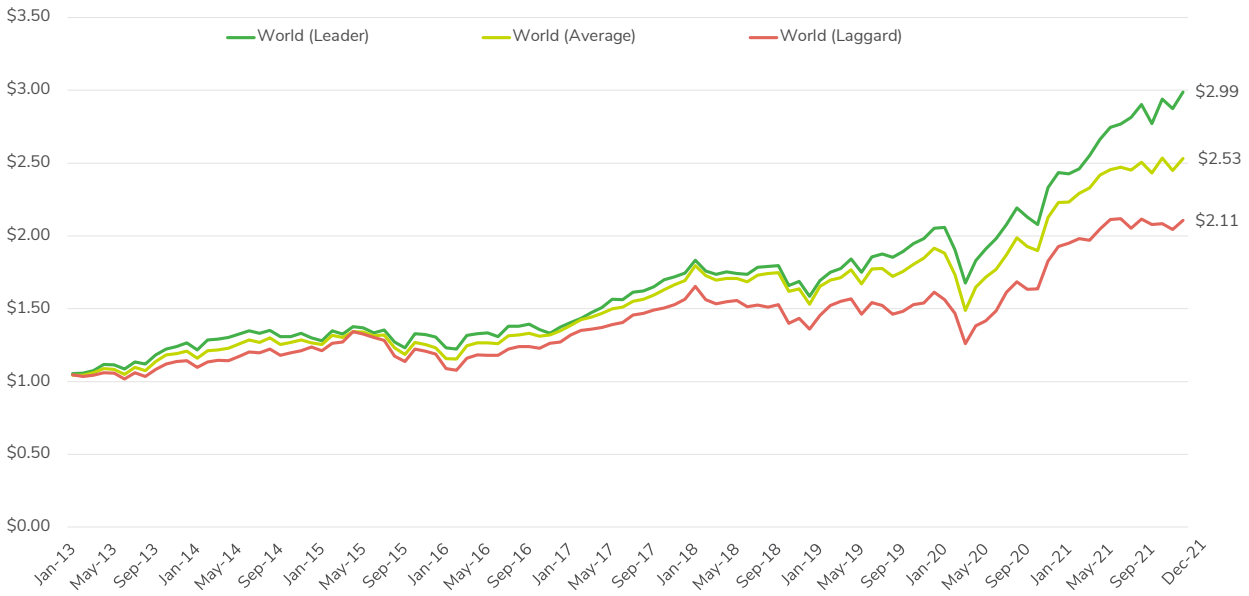
[4] The Kroll ESG and Global Investment Returns Study relies upon the GICS® structure as of the end of calendar year 2021 for industry classification purposesEffective March 17, 2023 (after market close), some subindustry groups were reclassified from Information Technology to Financials. Our study does not incorporate these most recent GICS® changes.

[5] To be clear, the ESG ratings issued by MSCI and other mainstream ratings providers do not measure a company's impact on the environment or society, but rather how material ESG factors can affect its financial performance.

Global Performance of ESG Ratings Portfolios: Cumulative Return in 2013-2021 Horizon
($1 Invested in December 2012)



Our study findings can help companies, investors, asset managers, regulators, and other interested stakeholders when considering investments and ESG initiatives across geographies and industries, or when developing ESG policies and deciding on appropriate ESG-related disclosures.

Kroll continues to watch this space. Knowing that more scrutiny is being placed on what constitutes an ESG-focused investment, capital allocations may change the relationship observed in our study. In future research, we will investigate if these historical relationships between ESG ratings and returns can be used to adjust a company's forward-looking cost of capital estimates.

Thank you for reviewing the results of our study. If you have any questions, feel free to reach out to our Kroll team.

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Background

ESG and Related Terminology[6]

Climate and broader ESG-related issues are increasingly prominent considerations for investors and regulators. Many questions have arisen about what qualifies an initiative or an investment to be labeled as climate, ESG-, or sustainability-focused. Accusations of "greenwashing" have increased significantly in recent years.

Part of the issue is the lack of consistency and standardization for what these terms mean. Exhibit 1 highlights some of the terminology used in ESG investing. Some of these terms are often used interchangeably, but they do not always mean the same thing. Lines may also become more blurred as regulators begin introducing mandatory disclosure requirements for sustainability.

Exhibit 1: Flavors of "Sustainable" Investing – Terminology Background

Socially Responsible Investing (SRI)

- Began in the 1960s, although it traces its roots back to the 18th century.
- Gained traction in the 1980s when many mutual funds were founded to cater to the concerns of socially responsible investors.
- Typically used in the context of public (listed) companies.
- Investing strategy that entails screening investments to exclude businesses that conflict with the investor's values (sometimes called "ethical investing").
- Original "sin stocks" subject to exclusion included alcohol, tobacco, weapons and gambling.
- In recent times, the selection may be based on a wider range of social and environmental criteria (e.g., no "fossil fuel" stocks), and may include positive screening.

ESG Investing

- ESG term coined in 2004.
- Emerged as a joint effort by the United Nations (UN) Global Compact and the Swiss Government, later joined by the International Finance Corporation (IFC).
- ESG is an investment framework. In their decision-making, market participants consider the ways in which ESG risks and opportunities can have a material impact on a company's financial performance, both positive and negative.

[6] For the various sources used to summarize this section, consult the References section at the end of this report.

Climate/ Environmental Investing

- Gained the most traction in recent years, as reports of climate change and global warming have become mainstream.
- Climate is a narrower concept than environmental issues (e.g., natural resources, biodiversity), but the terms are often used interchangeably.
- Climate investing is a style of thematic investing. Thematic investment is a diversification tool that seeks to deliver long-term value through future trends in themes such as technology, climate, energy or health care.
- Environment is one pillar in ESG, but often gets the most attention. It is often confused with ESG, even though ESG is the broader concept. Even academics sometimes claim they are researching ESG investing, even when using only environmental data or related concepts in their research papers, labeling companies "green" or "brown" based on their environmental credentials.

Impact Investing

- Coined in 2007 when the Rockefeller Foundation and other private investors got together.
- Led to the creation of the Global Impact Investing Network (GIIN).
- Originally used in the context of private investments, but it is expanding to public companies.
- Impact investments are those made with the intention of generating positive, measurable social and environmental impact alongside a financial return.
- Impact funds report not just on their financial performance (returns), but also on quantifiable metrics that generate a positive environmental and/or social impact (e.g., how many schools were built in a specific geographic area).

Sustainable Investing

- Has become a "catch-all" for a company's efforts to "do better" or "do good."
- Based on three pillars of sustainability: economic growth, environmental protection and social progress.
- Also referred to as "people, planet, and profits" or "people, planet, and prosperity" (aka the "Three 'Ps' of Sustainability" or the "Triple Bottom Line").
- The UN created its Sustainable Development Goals (UN SDG) in 2015 with this Triple Bottom Line in mind.
- The perspective taken is different from ESG investing. Sustainable investing focuses on how a company (or an investment) impacts the world. A sustainable portfolio is about intentionally including companies that are making a "positive" difference in the world.
- Sustainable investing is a broader concept than other investment styles and includes SRI and climate/environmental (although the terms are often used interchangeably).
- Sustainable investing is synonymous with "values-based investing." Values-based investing is an investment approach that reflects an investor's personal values by avoiding or increasing exposure to specific companies, industries or business practices. It encompasses SRI, ESG and certain thematic and impact investing.[7]

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[7] Not to be confused with "value" investing, an investment style usually contrasted with "growth" investing. Value and growth risk factors were first introduced by the seminal work of Nobel Prize in Economics laureate Eugene Fama and his co-author Kenneth French. These academics showed that expected stock returns could be explained not just by a stock's exposure to "market" risk but also "value" and "size". See Fama, Eugene F., and Kenneth R. French. "The Cross-Section of Expected Stock Returns." *The Journal of Finance*, 47, no. 2 (1992): 427–65. https://doi.org/10.2307/2329112.

A Brief History

A Brief History

SRI was a precursor to modern ESG investing in the U.S. and can be traced back to the early 18th century. At the time, Methodists in America protested investing in companies that had interests in the manufacturing of liquor or tobacco products or condoned gambling. In the mid-18th century, the Quaker Philadelphia Yearly Meeting prohibited members from participating in the slave trade. Ethical investing outside of the U.S. can be traced back even further to religious teachings within Judaism, Islam and other religions.[8]

- SRI gained prominence in the U.S. in the 1960s, during the Vietnam War. Anti-war protests and growing civil rights movements contributed to increased scrutiny of business practices that contributed to war efforts, as well as those that negatively affected marginalized groups in the U.S. The 1970s were marked by continued pushes for progress in sustainable investing, notably related to environmental issues. Prominent U.S. legislation passed during these two decades included the Clean Air Act, the Clean Water Act and the Endangered Species Act, as well as the Occupational Safety and Health Act, aimed at protecting the health and safety of workers.

- The 1980s saw continued interest in sustainable business practices, fueled in part by prominent environmental disasters and social events. The Exxon Valdez oil spill of 1989 sparked the creation of the Coalition of Environmentally Responsible Companies (Ceres), a nonprofit organization that aims to "encourage individual and collective actions that help stabilize the climate, protect water and natural resources, build a just and inclusive economy, and accelerate sustainable capital markets."[9]

- In 1990, the Domini 400 Social Index, today known as the MSCI KLD 400 Social Index, was created.[10] This was one of the first SRI indexes, and the objective was to provide a benchmark for investing in companies with strong sustainability profiles, while avoiding companies incompatible with certain values.[11]

- In 1997, Ceres, in collaboration with the Tellus Institute and with involvement of the UN Environment Programme, launched what became known as the Global Reporting Initiative (GRI). The aim was to create the first accountability mechanism to ensure companies adhere to responsible environmental conduct principles. This was later broadened to provide guidelines for participating companies and organizations when reporting their social, economic and governance issues. These guidelines were transitioned into voluntary sustainability reporting standards in 2016.[12]

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8 For additional sources also used to support this section, consult the References at the end of this report. This section of our report is not meant to be an exhaustive discussion on the history and creation of ESG investing.

9 CERES. 2019. "About Us." Ceres. 2019. https://www.ceres.org/about-us.

10 Investments, Domini Impact. 2021. "The Original Influencers." Domini. September 24, 2021. Available here: https://domini.com/insights/the-original-influencers/

11 "MSCI KLD 400 Social Index (USD) – Index Factsheet", May 31, 2023. Available here: https://www.msci.com/documents/10199/904492e6-527e-4d64-9904-c710bf1533c6.

12 GRI (Global Reporting Initiative). 2022. "Mission & History." www.globalreporting.org. 2022. Available here: https://www.globalreporting.org/about-gri/mission-history/.

- Also in 1997, under the auspices of the UN Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol was signed.[13,14] This was the first international treaty to set legally binding targets for signatory countries to reduce greenhouse gas emissions. The agreement only entered into force in 2005 and is ratified by 192 parties. It was essentially superseded by the Paris Agreement in 2015.[15]

- The key moment on the path to creating ESG was a speech at the Davos World Economic Forum in 1999 in which Kofi Annan, then-Secretary General of the UN, proposed a new "Global Compact" on human rights, labor and environment.[16] He urged business leaders to join the UN in promoting principles that would provide a foundation for a sustainable global economy.

- The Global Compact was launched in 2000, supported by various UN agencies and transnational nongovernmental organizations.

> **"The term *ESG* was borne out of a number of UN initiatives. In the 1990s, the UN changed its stance towards the corporate sector and established several public-private partnerships to achieve its economic development and social goals."**

13 "Marking the Kyoto Protocol's 25th Anniversary." United Nations Climate Action. To learn more, visit: https://www.un.org/en/climatechange/marking-kyoto-protocol%E2%80%99s-25th-anniversary.

14 The UNFCCC secretariat (UN Climate Change) is the United Nations entity tasked with supporting the global response to the threat of climate change. The secretariat was established in 1992 when countries adopted the UNFCCC. The UNFCCC has near universal membership (198 parties). To learn more, visit: https://unfccc.int/about-us/about-the-secretariat.

15 The 192 parties include 191 states (as defined by the UN) plus the European Union (EU). For the latest status on ratification, visit: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-a&chapter=27&clang=_en.

16 "Secretary-General Proposes Global Compact on Human Rights, Labour, Environment, In Address to World Economic Forum in Davos | UN Press." February 1, 1999. Available here: https://press.un.org/en/1999/19990201.sgsm6881.html.

> **In January 2004, Kofi Annan invited several of the world's leading financial institutions to join a new initiative titled "Who Cares Wins." Out of this initiative came a seminal report using the new term *ESG*.**[17]

Additional reports have been published under this initiative, including a 2005 report issued by the UN Environment Programme Finance Initiative (UNEP FI) Asset Management Working Group.[18] This is informally known as the Freshfields Report, as it was based on the analysis undertaken by law firm Freshfields Bruckhaus Deringer at the request of this working group. The report outlined the legal framework in Australia, Canada, France, Germany, Italy, Japan, Spain, the UK and the U.S. that could be used by institutional investors to integrate ESG issues in their investment decisions.

The combination of both initiatives ("Who Cares Wins" and the Freshfields Report) is seen as the foundation of the UN-backed Principles of Responsible Investment (PRI) in 2006.[19] The PRI is an independent group that encourages investors to use responsible investment to enhance returns and better manage risks, garnering over 5,300 signatories in mid-2023.[20] At the end of 2021, the 3,800+ PRI signatories of record represented USD 121 trillion of assets under management.[21]

The 2000s and 2010s saw further development of corporate sustainability frameworks across the globe. In 2011, the Sustainability Accounting Standards Board (SASB) was founded. It guides disclosures of financially material information related to sustainability.[22] The SASB has now been integrated into the International Sustainability Standards Board (ISSB), as discussed in "Overview of ESG Investing and Future Trends."

In 2015, countries signed the Paris Agreement, another legally binding climate treaty sponsored by the UNFCCC, effectively replacing the Kyoto Protocol.[23] The Paris Agreement was reached at the UN Climate Change Conference (COP21) in Paris and entered into force in November 2016. Its predecessor, the Kyoto Protocol, required that only developed countries reduce emissions, while the Paris Agreement called on all countries to set emissions targets. The Paris Agreement was ratified by 194 parties. A key objective is to substantially reduce global greenhouse gas emissions, such that the

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17 "Who Cares Wins – Connecting Financial Markets to a Changing World." The UN Global Compact, June 2004. Available here: https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_report_whocareswins__wci__1319579355342

18 Asset Management Working Group of the UNEP Finance Initiative. October 2005. "A legal framework for the integration of environmental, social and governance issues into institutional investment." UNEP Finance Initiative. October 2005. Available here: https://www.unepfi.org/fileadmin/documents/freshfields_legal_resp_20051123.pdf.

19 See PRI's website section "About the PRI," available here: https://www.unpri.org/about-us/about-the-pri.

20 The latest number of signatories is available here: https://www.unpri.org/signatories/signatory-resources/signatory-directory. Accessed on June 12, 2023.

21 See data in graph "PRI growth 2006–2021." in "About the PRI." Available here: https://www.unpri.org/about-us/about-the-pri. Accessed on June 12, 2023.

22 See SASB's website section "About Us," available here: https://sasb.org/about/.

23 "The Paris Agreement." United Nations Climate Action. To learn more, visit: https://www.un.org/en/climatechange/paris-agreement.

> global temperature increase in the 21st century is limited to 2 degrees Celsius (2.0 C).[24] At the same time, the agreement calls for efforts to limit the temperature increase even further to 1.5 C. The UN argues that to keep global warming to no more than 1.5 C, global emissions need to be reduced by 45% by 2030 and reach net zero by 2050.[25] This has led to the proliferation of the term *net zero* in the media and by a variety of stakeholders.

Although only a few years into our current decade, the 2020s have already seen marked growth in sustainable investing initiatives. Some asset managers and private equity firms have taken a prominent role in the discussion. Notably, in his 2020 letter to CEOs, BlackRock CEO Larry Fink stressed the importance of sustainable investment to companies' long-term prospects. It also included a prominent section titled "Climate Risk is Investment Risk.".[26] Fink's 2021 letter showed continued focus on sustainable investment issues, with an emphasis on the transition to an economy with net-zero carbon emissions, as well as increased use of data and disclosure related to sustainable investing activities.[27] His 2022 letter continued to address the theme of sustainable investing, arguing that global energy transition will be one of the most important factors affecting capital allocation decisions in the years ahead. However, he acknowledged the politically charged nature surrounding ESG investing.[28] At a recent conference, he stated that he will no longer be using the term ESG, because it has been politically weaponized, even though he will continue to pursue related sustainability principles.[29]

Indeed, the topic of ESG has recently become the focus of political wrangling, particularly in the U.S. This polarization has led to legislative proposals both for and against including ESG in investment mandates. While political uncertainty may shift investment decisions in the short-term, the broader shift towards a greener global economy means that global investors will continue to be interested in ESG-focused investment opportunities as part of their asset allocation decisions. However, the term itself may be replaced by alternative labels.[30] Time will tell which labels will ultimately prevail.

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[24] The 194 parties include 193 states (as defined by the UN) plus the EU. For the latest status on ratification, visit: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=_en.

[25] "For a livable climate: Net-zero commitments must be backed by credible action." United Nations Climate Action. To learn more, visit: https://www.un.org/en/climatechange/net-zero-coalition. The Intergovernmental Panel on Climate Change (IPCC) is the UN body that assesses the science related to climate change. To learn more, visit: https://www.ipcc.ch/.

[26] "Larry Fink's 2020 Letter To CEOs: A Fundamental Reshaping of Finance,", available here: https://www.blackrock.com/corporate/investor-relations/2020-larry-fink-ceo-letter.

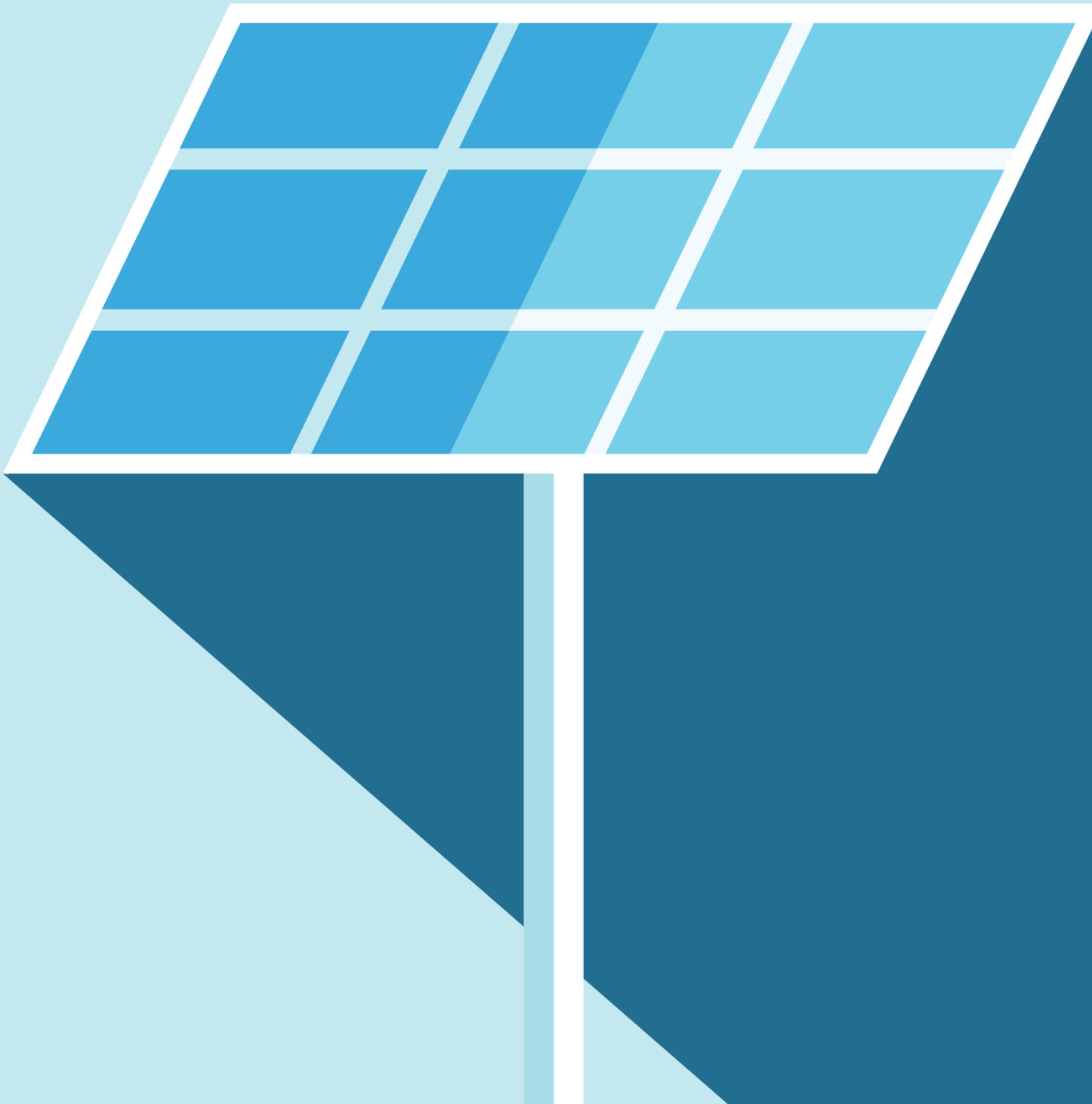
[27] "Larry Fink's 2021 Letter To CEOs," available here: https://www.blackrock.com/corporate/investor-relations/2021-larry-fink-ceo-letter.

[28] "Larry Fink's 2022 Letter To CEOs: The Power of Capitalism," available here: https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter.

[29] Binnie, Isle, "BlackRock's Fink says he's stopped using 'weaponised' term ESG", Reuters, June 26, 2023. Available here: https://www.reuters.com/business/environment/blackrocks-fink-says-hes-stopped-using-weaponised-term-esg-2023-06-26/#:~:text=%22I%20don't%20use%20the,far%20right%2C%22%20Fink%20said.

[30] For example, see Forte, Peyton and Isabelle Lee, "To Sidestep 'Weaponized' ESG, Do-Good Funds Embrace a New Label." Bloomberg. June 28, 2023. Available here: https://www.bloomberg.com/news/articles/2023-06-28/to-sidestep-weaponized-esg-do-good-funds-embrace-a-new-label?sref=SfSK7hYQ.

Overview of ESG Investing and Future Trends



Overview of ESG Investing and Future Trends

Various studies have tried to quantify the magnitude of capital investments made in ESG and sustainability-related themes. This section outlines the trends in ESG investing and regulatory developments that may impact the future and magnitude of such investments.[31]

Is Investment in Sustainability Material?

Exhibit 2 shows the proportion of sustainable investing assets relative to total assets under management (AUM) in the period of 2016–2020, according to a study from the Global Sustainable Investment Alliance[32]:

Exhibit 2: Global Sustainable Investments vs. Total AUM (in USD billions)

Region	2016	2018	2020
Europe*	12,040	14,075	12,017
U.S.	8,723	11,995	17,081
Canada	1,086	1,699	2,423
Australasia	516	734	906
Japan	474	2,180	2,874
Total Sustainable Investments	22,839	30,683	35,301
Total AUM of Regions Analyzed	81,948	91,828	98,416
Sustainable Investments/Total AUM (%)	27.9%	33.4%	35.9%

*In 2020, Europe data includes Austria, Belgium, Bulgaria, Denmark, France, Germany, Greece, Italy, Spain, Netherlands, Poland, Portugal, Slovenia, Sweden, the UK, Norway, Switzerland and Liechtenstein.

According to this study, over a third of investment assets in developed markets were categorized as sustainable, reaching a total of USD 35.3 trillion globally in 2020. In the U.S., sustainable investments stood at USD 17.1 trillion in 2020, overtaking Europe's share. For perspective, according to the World Bank, the total market capitalization of the U.S. stock market was USD 40.7 trillion in 2020.[33]

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31 There are additional sources also used to support this section in the References listed at the end of this report. This section of our report in not meant to be an exhaustive discussion on ESG-related regulatory and investing trends.

32 "Global Sustainable Investment Review 2020," released in July 2021. Available here: http://www.gsi-alliance.org/wp-content/uploads/2021/08/GSIR-20201.pdf.

33 Source: https://data.worldbank.org/indicator/CM.MKT.LCAP.CD?locations=US. As of April 17, 2023, the Dow Jones U.S. Total Stock Market Index, which excludes over-the-counter stocks, had a total market capitalization of USD 41.5 trillion. Source: https://www.spglobal.com/spdji/en/indices/equity/dow-jones-us-total-stock-market-index/#overview, accessed on April 18, 2023.

The Global Sustainable Investment Alliance study is the most extensive one in capturing global private and public investments in sustainability, but it is only updated every two years. Since then, many questions have arisen on what qualifies an initiative or an investment to be labeled as climate-, ESG-, or sustainability-focused. Accusations of greenwashing have risen significantly, and various reports have highlighted the issue for several industries.[34]

Russia's war on Ukraine in February 2022 exacerbated some of the concerns about what constitutes an ESG-focused investment.

Part of the issue is the lack of consistency and standardization about what these terms mean. Also, the voluntary nature of much of the reporting means that many companies and funds selectively disclose information that portrays them more favorably. According to the Carrots & Sticks project, in 2020 there were over 600 sustainability reporting provisions globally, with almost 60% being mandatory and with the balance being voluntary.[35] However, 40% of all provisions were issued in Europe.

Financial Reporting and Regulatory Trends

The recent proliferation of ESG and climate-focused investment products and rising greenwashing concerns has led to a global regulatory shift toward requiring companies and investment funds and advisors to report on climate and other ESG issues. This impetus also led to the creation of the ISSB in November 2021, following a widespread support during the UN COP26 in Glasgow.[36] The ISSB was created by the International Financial Reporting Standard (IFRS) Foundation, which also oversees the International Accounting Standards Board (IASB)—the body responsible for developing the IFRS currently used by 168 jurisdictions.[37]

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[34] For an example, see "Feeding Us Greenwash – An analysis of misleading claims in the food sector," Changing Markets Foundation, March 2023. Available here: http://changingmarkets.org/wp-content/uploads/2023/03/Feeding-Us-Greenwash-web.pdf.

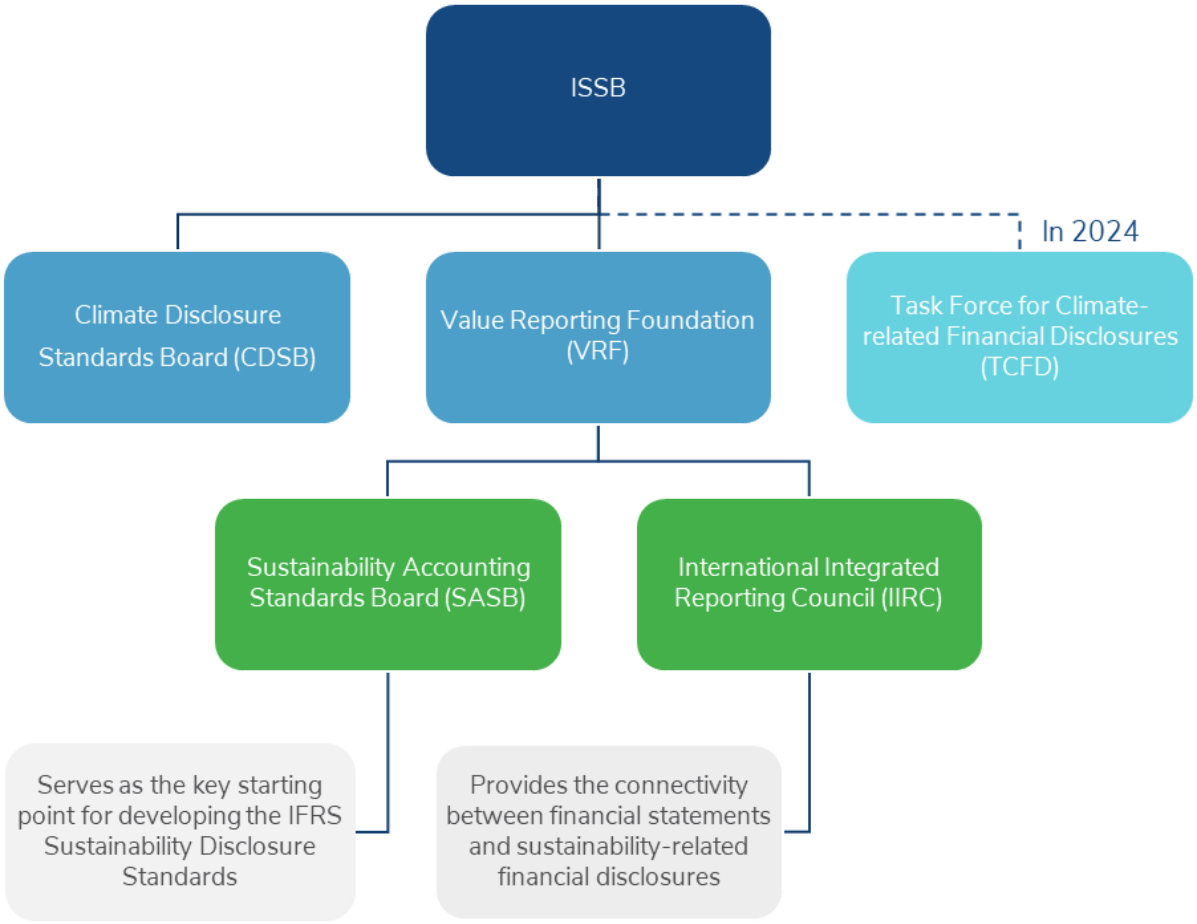
[35] Analysis by Kroll of Figure 9, "Carrots & Sticks – Sustainability Reporting Policy: Global trends in disclosure as the ESG agenda goes mainstream," July 2020. Available here: https://www.carrotsandsticks.net/media/zirbzabv/carrots-and-sticks-2020-june2020.pdf.

[35] See "About the International Sustainability Standards Board." Available here: https://www.ifrs.org/groups/international-sustainability-standards-board/#about.

[37] See "Who uses IFRS Accounting Standards?", IFRS Foundation. Available here: https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/.

The ISSB's objective is to deliver a comprehensive global baseline of sustainability-related (climate and other ESG) disclosure standards. These standards provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities, allowing them to make more informed investment decisions. To accelerate the process of issuing global standards, the IFRS Foundation integrated other independent organizations that had previously been producing voluntary climate or, more broadly, ESG and sustainability disclosure standards (see Exhibit 3): (1) the CDSB and (2) the VRF. The VRF itself was comprised of (1) the SASB and (2) the IIRC. The VRF's SASB Standards served as a key starting point for the development of the IFRS Sustainability Disclosure Standards, while the Integrated Reporting Framework provides the connectivity between financial statements and sustainability-related financial disclosures.[38]

Exhibit 3: Structure of the ISSB



[38] "IFRS Foundation completes consolidation with Value Reporting Foundation," August 1, 2022. Available here: https://www.ifrs.org/news-and-events/news/2022/08/ifrs-foundation-completes-consolidation-with-value-reporting-foundation/.

More recently, an agreement has been reached to transfer the monitoring of the Task Force for Climate-related Financial Disclosures (TCFD) to the ISSB starting in 2024.[39] The TCFD was created by the Financial Stability Board (FSB) in in 2015, with the goal of identifying the information needed by investors, lenders and insurance underwriters to appropriately assess and price climate-related risks and opportunities. In 2017, the TCFD published its final climate-related financial disclosure recommendations.[40] Over time, the TCFD improved its framework to help public companies and other organizations to disclose climate-related risks and opportunities through their existing reporting processes. This framework has been used as the basis (at least in part) for many of the voluntary and mandatory disclosures standards around climate, including in the work of the ISSB.[41]

Many countries have also begun the process of either proposing or adopting new rules on ESG-related disclosures made by companies. The Carrots & Sticks database was expanded in 2023 to cover 130 countries. At the time of writing, the number of sustainability reporting provisions had increased to over 2,400, with 55% being voluntary in nature.[42]

Three major regulatory initiatives have the potential to significantly impact the data that corporations will soon need to collect and disclose on ESG issues. As illustrated in Exhibit 4, proposals and final standards by the following three bodies have a (potentially) global reach: the ISSB, the EU and the U.S. Securities and Exchange Commission (SEC). The green boxes in Exhibit 4 display the relevant standards and outstanding proposals by the three organizations. The ISSB standards were finalized in June 2023, while the EU's European Sustainability Reporting Standards (ESRS) were adopted by the EU Commission in July.[43,44] The SEC proposal could be published in final form in the fall of 2023.[45]

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39 "IFRS Foundation welcomes culmination of TCFD work and transfer of TCFD monitoring responsibilities to ISSB from 2024", July 10, 2023. Available here: https://www.ifrs.org/news-and-events/news/2023/07/foundation-welcomes-tcfd-responsibilities-from-2024/.

40 For additional details on the TCFD history, visit: https://www.fsb-tcfd.org/about/#history.

41 For more information on the TCFD recommendations, visit: https://www.fsb-tcfd.org/recommendations/.

41 "Carrots & Sticks: Sustainability reporting instruments worldwide." Accessed by the authors of this study on May 16, 2023. Available here: https://www.carrotsandsticks.net/reporting-instruments/?.

43 "ISSB issues inaugural global sustainability disclosure standards," June 26, 2023. Available here: https://www.ifrs.org/news-and-events/news/2023/06/issb-issues-ifrs-s1-ifrs-s2/.

44 "European sustainability reporting standards – first set," European Commission. The adopted ESRS still have to be reviewed by the European Parliament. For the latest updates, visit: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13765-European-sustainability-reporting-standards-first-set_en.

45 The SEC's regulatory agenda is released semiannually. The SEC updates the list of rulemakings it plans to consider in the near future vs. the long-term here: https://www.reginfo.gov/public/do/eAgendaMain. According to the SEC's Spring 2023 Unified Agenda of Regulatory and Deregulatory Actions released on June 13, 2023, the SEC expects to issue the final climate disclosure rules sometime in October 2023. For details, visit: https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202304&RIN=3235-AM87.

Exhibit 4: Major Corporate Sustainability Disclosure Initiatives with Potential Global Reach

These regulatory developments may have ramifications on how investors incorporate the effects of ESG in the valuation of various businesses. Companies with operations across multiple countries may be subject to multiple disclosure requirements. The concept of materiality differs between standards and proposals, resulting in the need for a complex data-gathering process that will require technology solutions and a close attention to internal controls. Regarding climate (part of the "E" pillar of ESG), these standards and proposals rely on some elements of the recommendations developed by the TCFD. Companies required to comply with either the ISSB's standards or the EU's CSRD requirements may need to start collecting and reporting data for annual reporting periods starting in 2024, with the first sustainability reports filed in 2025 (various phase-ins are available and applicability will vary by company size, among other factors). Investors will update their valuation models, as more standardized information becomes available, including new assessments on how material risks and opportunities are to the financial performance of a business.

A recent analysis by Bloomberg Law documented the most common ESG frameworks used by U.S. publicly traded companies. Based on data from early 2023, it identified the following reporting frameworks as the most often cited (in decreasing order of usage):[46]

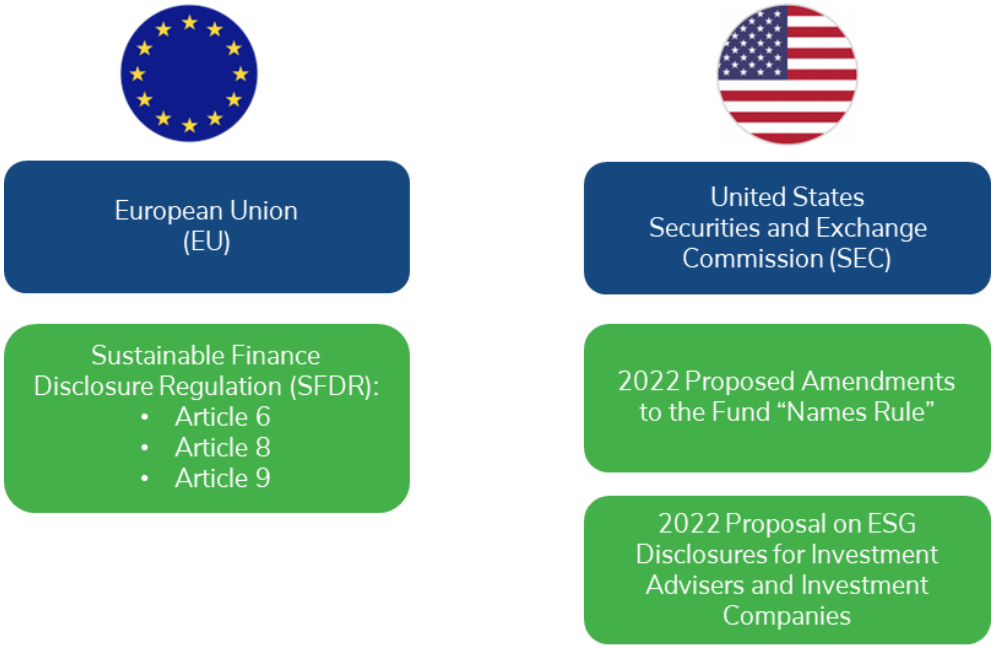
- SASB, which is now part of the ISSB
- TCFD, which will become part of the ISSB in 2024
- Science Based Targets Initiative (SBTi), which is a partnership between the Carbon Disclosure Project (CDP), the UN Global Compact (UNGC), the World Resources Institute and the World Wide Fund for Nature (WWF, formerly World Wildlife Fund)
- GRI
- UN SDG, which are supported by the UNGC
- CDP

[46] Gampher, Abigail, "ANALYSIS: Companies Rely on ESG Frameworks Amid Uncertainty," Bloomberg Law, April 21, 2023. Available here: https://news.bloomberglaw.com/bloomberg-law-analysis/analysis-companies-rely-on-esg-frameworks-amid-uncertainty.

Some of these frameworks are solely focused on climate-related issues (e.g., TCFD, SBTi, CDP), while others have a broader application.

New regulations in the fund space against misleading marketing of investments as sustainable or ESG-focused have been recently proposed or enacted. The most notable of these are those issued by the EU and the SEC (see Exhibit 5).

Exhibit 5: Major Investment Fund Sustainability Disclosure Proposals and Regulations with Potential Global Reach



In 2019, the EU adopted new sustainability disclosure regulations that applied to providers of financial products and financial advisors in the EU. The main (or core) provisions under the SFDR became effective in March 2021 (Level 1 disclosures). Additional enhanced disclosures at both the entity and at the product/fund level became effective in January 2023 (Level 2 disclosures).[47]

[47] "Sustainability-related disclosure in the financial services sector," European Commission. For the latest developments, visit: https://finance.ec.europa.eu/sustainable-finance/disclosures/sustainability-related-disclosure-financial-services-sector_en.

The purpose of the SFDR was to improve transparency in the market for sustainable investment products, in an effort to prevent greenwashing. To improve the quality and comparability among financial products, the SFDR introduced a distinction between types of sustainable investments. Asset managers are required to classify their funds depending on their level of sustainability, which are now known based on the respective articles in the legislation:[48]

- **Article 6:** These funds must either disclose how they integrate financially material ESG risk considerations into the investment decision-making process, or explain why sustainability risks are not relevant. However, these funds do not meet the additional criteria of Article 8 or Article 9 products (i.e., non-sustainable funds).

- **Article 8:** Funds that promote environmental or social characteristics and the underlying investments follow good governance practices (aka light green).

- **Article 9:** Funds that have sustainable investment as their objective and the underlying investments follow good governance practices (aka dark green). These funds should make a positive impact on society or the environment.

In the U.S., the disclosure requirements for investment funds are at a less advanced stage. On May 25, 2022, the SEC proposed changes to its Investment Company Act "Names Rule," which would expand requirements for funds labeled as ESG.[49] Currently, registered investment companies whose names suggest a focus in a particular type of investment are required to adopt a policy to invest at least 80% of the value of their assets in those investments. The objective of the proposed rule is to address fund names that are likely to mislead investors about a fund's investments and risks. Under the new proposal, additional investor protection would be added by extending the 80% investment requirement to more funds. For instance, fund names with terms suggesting that investment decisions incorporate ESG factors would be required to invest at least 80% in assets with characteristics suggested by the fund name.

On that same day, the SEC proposed amendments to existing disclosure rules, with the aim of promoting consistent and comparable ESG disclosures by certain funds and advisors.[50] The proposed amendments seek to categorize certain types of ESG strategies broadly and require funds and advisors to provide more specific disclosures in fund prospectuses, annual reports and advisor brochures based on the ESG strategies they pursue. Final rules under both proposals are expected in late 2023.[51]

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[48] Many articles have been writen that analyze the SFDR fund classification. The following is an example: DLA PIPER, "Comparing ESG disclosure rules for funds in the EU, UK and the US – SFDR, SDR and SEC proposals," October 4, 2022. Available here: https://www.dlapiper.com/en-us/insights/publications/2022/10/comparing-esg-disclosure-rules-for-funds.

[49] SEC Press Release 2022-91, "SEC Proposes Rule Changes to Prevent Misleading of Deceptive Fund Names," May 25, 2022. Available here: https://www.sec.gov/news/press-release/2022-91.

[50] SEC Press Release 2022-92, "SEC Proposes to Enhance Disclosures by Certain Investment Advisers and Investment Companies About ESG Investment Practices," May 25, 2022. Available here: https://www.sec.gov/news/press-release/2022-92. The proposed changes would apply to certain registered investment advisers, advisers exempt from registration, registered investment companies, and business development companies.

[50] For the latest updates, visit (1) Investment company names: https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202304&RIN=3235-AM72; and (2) Enhanced ESG disclosures: https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202304&RIN=3235-AM96.

Rise in Regulatory Enforcement and Litigation

Regulators around the world have begun enforcement actions in this area. For example, in 2021 the SEC's Division of Enforcement created a task force focused on climate and ESG Issues.[52] The objective of this task force is to identify potential violations, including material gaps or misstatements in the disclosure of climate risks (under existing rules) by issuers, as well as disclosure and compliance issues relating to investment advisers' and funds' ESG strategies.[53] While prior to the creation of this taskforce the SEC had already undertaken enforcement actions related to ESG, its very creation foreshadows more enforcement activity in the future. In fact, there are recent reports that the SEC's enforcement division has sent document requests, including subpoenas, to several asset managers relating to their ESG marketing practices.[54]

Litigation initiated by investors and consumers about false ESG claims has also increased.[55]

The combination of new or proposed disclosure rules, more regulatory oversight, enforcement actions and litigation trends has led many funds to remove or change their sustainability or ESG labeling in 2022.[56]

These trends have also led ESG ratings providers to change or remove some of their ratings. For example, in March 2023, MSCI changed its methodology of fund ratings (not to be confused with the company-level ESG ratings used in the Kroll study), which resulted in one-time downgrades for approximately 31,000 funds. According to MSCI estimates, the changes mean that only 0.2% of funds are expected to have a rating of AAA in the future, compared to 19.9% at end of March 2023.[57]

Need for Attestation Will Increase

The future of ESG and sustainability investing will be predicated on investors' confidence in such labels, which will increase the demand for attestation and assurance services dramatically. A recent study prepared by the International Federation of Accountants (IFAC), the Association of International Certified Professional Accountants and the Chartered Institute of Management Accountants (AICPA & CIMA) found that while 95% of large global companies reported ESG information, only 64% obtained assurance/verification over *some* of the information they disclosed in 2021.[58] Moreover, this is a small

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52 "SEC Press Release 2021-42, "SEC Announces Enforcement Task Force Focused on Climate and ESG Issues," March 4, 2021. Available here: https://www.sec.gov/news/press-release/2021-42.

53 More details on the Enforcement Task Force Focused on Climate and ESG Issues and examples of recent SEC actions can be found here: https://www.sec.gov/securities-topics/enforcement-task-force-focused-climate-esg-issues.

54 Temple-West, Patrick and Madison Darbyshire, "SEC lawyers subpoena fund managers over ESG disclosures", August 15, 2023. Available here: https://www.ft.com/content/518387b0-5c4c-4ff7-8221-27be0bb0b8ac.

55 For example, see Gampher, Abigail, "Analysis: New Year, New ESG-Related Litigation?", Bloomberg Law, February 15, 2023. Available here: https://news.bloomberglaw.com/bloomberg-law-analysis/analysis-new-year-new-esg-related-litigation.

56 Fore example, see Morningstar, Inc., "SFDR Article 8 and Article 9 Funds: Q4 2022 in Review – Article 9 fund assets shrink by EUR 175 billion, or 40%, following a wave of downgrades," January 26, 2023.

57 MSCI, "Enhancements to MSCI's Fund ESG Ratings," March 2023. Available here: https://www.msci.com/documents/10199/e147bb2f-3b5b-8314-cdaf-9277b9586d59.

58 This study reviews market practice for the reporting and assurance of ESG or sustainability information of 1,350 companies across 21 jurisdictions for 2021. Source: "The State of Play: Sustainability Disclosure & Assurance 2019–2021 Trends & Analysis," IFAC and AICPA-CIMA, February 2023. Available here: https://www.ifac.org/knowledge-gateway/contributing-global-economy/publications/state-play-sustainability-disclosure-assurance-2019-2021-trends-analysis.

subset of the universe of companies and funds that will see an increased need for such attestation services, which will be required in some degree by the new ESG-related standards and proposals outlined earlier.

In March 2023, the International Foundation of Ethics and Audit (IFEA) was created to support a growing need for assurance services.[59] This new oversight board supports high-quality, international standard-setting in ethics, audit and assurance in the public interest. The IFEA fulfills its mission through its two standard-setting boards, the International Ethics Standards Board for Accountants (IESBA) and the International Auditing and Assurance Standards Board (IAASB), which were both previously part of IFAC.

Both the IESBA and IAASB announced plans to issue public consultations in 2023 on standards related to sustainability ethics and sustainability assurance, respectively, with the intent to finalize these standards in 2024.[60] In early August, the IAASB issued a proposed international standard on sustainability assurance with a comment deadline of December 1, 2023.[61] The IAASB indicated that, if adopted as proposed, this would become the most comprehensive sustainability assurance standard available to all assurance practitioners across the globe. The new standard would apply to information reported about any appropriate sustainability matter and prepared under any suitable framework. It would also apply to both limited and reasonable assurance engagements.[62]

What does this mean for Investors and Other Stakeholders?

The U.S. Sustainable Investment Forum (U.S. SIF) produces a biennial report on U.S. sustainable investing trends. In 2022, the U.S. SIF decided to change its methodology in response to the rapid growth of the field (including regulatory initiatives and accusations of greenwashing), coupled with the lack of information on how institutions are integrating ESG in their investment decisions.[63] The new methodology required more granular information by fund managers, which resulted in a significant decline in AUM considered as being sustainability focused.

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59 "New International Foundation For Ethics And Audit Strengthens Independence of The Standard-Setting System," March 27, 2023. Available here: https://www.ethicsandaudit.org/news-events/2023-03/new-international-foundation-ethics-and-audit-strengthens-independence-standard-setting-system.

60 "IESBA and IAASB Highlight Commitment to Deliver on Recommendations in New IOSCO Report on a Global Assurance Framework for Sustainability-Related Corporate Reporting," March 28, 2023. Available here: https://www.iaasb.org/news-events/2023-03/iesba-and-iaasb-highlight-commitment-deliver-recommendations-new-iosco-report-global-assurance-0. For an updated timeline on the sustainbility assurance project, visit: https://www.iaasb.org/consultations-projects/sustainability-assurance.

61 "Proposed International Standard on Sustainability Assurance 5000, General Requirements For Sustainability Assurance Engagements", August 2, 2023. Available here: https://www.iaasb.org/publications/proposed-international-standard-sustainability-assurance-5000-general-requirements-sustainability.

62 "What You Need to Know About International Standard on Sustainability Assurance 5000", August 14, 2023. Available here: https://www.iaasb.org/news-events/2023-08/what-you-need-know-about-international-standard-sustainability-assurance-5000.

63 U.S. SIF, "2022 Report on US Sustainable Investing Trends – Executive Summary." Available here: https://www.ussif.org//Files/Trends/2022/Trends%202022%20Executive%20Summary.pdf.

Exhibit 6 shows the evolution of U.S. investments in sustainable funds from 2016 to 2022. As a result of the methodology change, U.S. SIF cut the size of sustainability-related AUM by more than half from 2020 to 2022. Note that the U.S. data in this exhibit overlaps with some of the data in Exhibit 2.

Exhibit 6: U.S. Sustainable AUM vs. Total AUM (in USD trillions) [64]

	2016	2018	2020	2022
Total U.S. Sustainable Investments	8.7	12.0	17.1	8.4
Total U.S. AUM	40.3	46.6	51.4	66.6
Sustainable Investments/Total AUM (%)*	21.6%	25.7%	33.2%	12.6%

*Differences due to rounding. Source: U.S. SIF Foundation. Analysis by Kroll.

It could be argued that the new U.S. SIF methodology is too stringent and, as fund managers provide more detailed information, the proportion of sustainable fund investments will rise again, although perhaps not the levels reported in 2020.

Regardless, as standard-setting efforts, regulatory and enforcement actions, and litigation trends evolve, we will see major changes in the quantum of ESG investing. While this has become a prominent topic of discussion among corporations, investors and other stakeholders, many questions remain.

How does investing in companies with a greater focus on ESG affect investment returns, which has implications on capital allocation decisions and ramifications to asset managers' fiduciary duty?

What is the role of ESG in investment valuation, business decisions and corporate finance theory and practice?

Our study aims to start answering the first question and understanding the second. ESG investing has changed a lot since its start. Even so, a thorough understanding of the impact of using an ESG framework on stock returns is a logical starting point for investors, regulators, and other stakeholders to begin evaluating the role that ESG plays in investment decisions. In addition, in a world where the topic of ESG has become politicized, corporate decision-makers will have to show a linkage between economic returns and ESG initiatives. Our study may help in that conversation.

[64] Refer to the individual trend reports from 2016 through 2020, available here: https://www.ussif.org/currentandpast.

Academic Research and Sustainability

Academic Research and Sustainability

The impact of ESG investing on both cost of capital and portfolio returns is ambiguous, and the debate in academia is still ongoing.[65] Academic research on ESG can be categorized into two types of studies: corporate and investor. Corporate studies analyze how adopting ESG investing principles impacts the firm's financial performance. From a corporate manager's perspective, this can be summarized by the impact of ESG policies on the firm's cash flows and cost of capital. Investor studies refer to the market performance of ESG funds, portfolios, or indexes versus traditional ones, from the perspective of an asset manager.[66]

Differentiating between governance and other areas of ESG (i.e., environmental and social) is important in academic literature. Governance has been a significant topic as far back as the 1970s, when researchers identified the agency problem and how it affects financial decision-making.[67] Many theories in corporate finance and portfolio management are based on corporate governance. Until very recently less interest had been shown in the other two components of ESG.

In a study published in 2017, the authors analyzed the content of 20,725 articles in 21 finance journals and found that only 12 articles related to climate change were published during the 1998–2015 period. In addition, none of these papers were published in the three leading journals of finance.[68] However, more recently there has been an uptick in academic research and financial journals publishing special issues highlighting research on sustainability.[69]

Confusion does exist even when reviewing research conducted by different academics. Generally, researchers have started to designate green firms (and assets) as those with good ESG credentials, while brown firms (and assets) are those with poor ESG credentials. Unfortunately, sometimes that designation is viewed through a lens of overall ESG ratings, while others are based on a firm's (or asset's) specific environmental rating. A company that scores well on the environmental front can have a poor score in social or governance factors, making it more difficult to compare and understand the results of research studies.

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65 Larcker, David F., Brian Tayan, and Edward M. Watts. 2022. "Seven myths of ESG." *European Financial Management* 28 (4): 869–882.

66 This section is not meant to provide an exhaustive academic literature review of reseearch on the topics of ESG and sustainable investing.

67 Jenson, Michael C., and William H. Meckling. 1976. "Theory of the firm: Managerial behavior, agency costs and ownership structure." *Journal of Financial Economic* 3 (4): 305–360.

68 Diaz-Rainey, Ivan, Becky Robertson, and Charlie Wilson. 2017. "Stranded research? Leading finance journals are silent on climate change." *Climatic Change* 143: 243–260. The leading three journals of finance are: *Journal of Finance*, *Journal of Financial Economics*, and *Review of Financial Studies*.

69 The first paper on climate finance and how to mitigate the risk of climate change on economies appeared in the early 1970s. For more details, please refer to: Giglio, Stefano, Bryan Kelly, and Johannes Stroebel. 2021. "Climate finance." *Annual Review of Financial Economics* 13: 15–36.

Corporate Manager View

In Theory

In theory, investors are only concerned with the risk-reward trade-off when allocating their resources; hence, all investors hold the market portfolio: the best diversified portfolio in the market. This assumption ignores an investor's preference for certain types of stocks, or exclusion of other stocks, based on the perceived ethical standards of the firm.[70]

Diversity of investors' tastes is not a new topic in financial academic literature.[71] Academic research has been pushing against some of the potential flaws of these assumptions since the early development of modern finance theory. However, these studies were not necessarily specific to sustainability. As the topic of sustainable investment developed and more investors started to express interest, research followed. In 2001, a published study developed an equilibrium model specific to green investments that implied that when fewer investors hold the stock of a firm, the opportunities for risk diversification are reduced; hence, the firm's cost of capital will be higher.[72] This marked the beginning of the development of theory regarding sustainability and ethical investment.

Can We Talk About an ESG Risk Premium?

To include corporate sustainability within asset pricing models, researchers proposed alternatives to the traditional asset pricing models (i.e., the Capital Asset Pricing Model (CAPM)). The question that academic studies are trying to answer is: how do ESG scores affect asset pricing? First, do ESG scores provide information about the short- or long-term risks facing the firm? Second, does firm exclusion affect asset pricing? We will discuss herein some of the models that are trying to incorporate these concepts into asset pricing; however, this discussion is not extensive nor comprehensive. The academic literature is still expanding and exploring new ways to understand and incorporate sustainability into asset pricing.

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70 Milton Friedman outlined the view of traditional finance theory in his famous article on corporate social responsibility. Friedman, Milton. 1970. "The Social Responsibility Of Business Is to Increase Its Profits." *The New York Times*, September 13, 1970, https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html.

71 Professor Robert Merton has one of the most cited papers from this period. Merton, Robert C. 1987. "A Simple Model of Capital Market Equilibrium with Incomplete Information." *Journal of Finance* 42 (3: 483–510.

72 Heinkel, Robert, Alan Kraus, and Josef Zechner. 2001. "The effect of green investment on corporate behavior." *Journal of financial and quantitative analysis* 36 (4): 431–449. The authors did not differentiate between SRI and green investment when developing their model.

The first model we will discuss is the ESG-adjusted CAPM.[73] In this model, the authors assume that ESG scores influence the cost of equity in two ways: first, by providing information about a company's fundamentals, and second, by influencing investors' preferences and asset allocation choices. The findings suggest that higher governance scores predict strong company fundamentals and lower preference from investors, leading to relatively cheap valuations and positive returns. On the contrary, higher environmental and social scores are weak predictors of future company performance but generate higher demand from investors, which could help explain higher valuations of stocks that score well on these metrics.

The second model is a two-factor model including the market and a "green factor."[74,75] These researchers call green assets those that are focused on ESG issues and brown assets those that do not have an ESG focus. They found that in equilibrium, green assets have a lower expected return associated with a negative alpha, while brown assets have a higher expected return associated with a positive alpha. However, changing expectations from customers and investors in favor of ESG can lead to outperformance of green stocks. This study provides a tangible way to measure the exposure of different stocks to an ESG factor and shows that green and brown stocks have opposite exposure to a green factor.

The third model is labeled Sustainable CAPM (S-CAPM). This model separates the effects of sustainability into two components: neglected stock and taste premia.[76] The author thinks of the taste premium as a function of sustainable investors' desire to hold green assets (i.e., those that integrate environmental issues). He found that whether stocks are excluded or integrated through certain measures of ESG, sustainable investing can contribute to an increase in the cost of capital for the least ethical or the environmentally riskiest companies. Focusing on U.S. stocks, he also found that the integration of environmental criteria by green investors impacts industries differently, with an annual taste premium ranging from -1.12% for the most ESG-overweighted industries to +0.14% for the most ESG-underweighted industries, while the average annual exclusion effect of sin stocks was 2.79%.[77]

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73 Pedersen, Lasse Heje, Shaun Fitzgibbons, and Lukasz Pomorski. 2021. "Responsible investing: The ESG-efficient frontier." *Journal of Financial Economics* 142 (2): 572–597.

74 Pástor, Ľuboš, Robert F. Stambaugh, and Lucian A. Taylor. 2021. "Sustainable investing in equilibrium." *Journal of Financial Economics* 142 (2): 550–571.

75 A simple version of the ESG factor is a green-minus-brown portfolio return, where both green and brown portfolios are weighted by ESG characteristics.

76 Zerbib, Olivier David. 2022. "A Sustainable Capital Asset Pricing Model (S-CAPM): Evidence from Environmental Integration and Sin Stock Exclusion." *Review of Finance* 26 (6): 1345–1388.

77 Sin stocks are shares of companies that operate in industries considered unethical. For example: gambling, alcohol, tobacco, sex-related industries, and weapons manufacturers.

Empirical Findings

Empirical findings show mixed results on the relationship between sustainability and cost of capital. Some studies that show a positive relationship between sustainability and cost of capital. Others support the theory of a negative to nonexistent relationship.

The first studies in this area were focused on corporate social responsibility (CSR), a precursor to ESG. One of the first studies on cost of capital and CSR suggests that company investment in improving responsible employee relations, environmental policies and product strategies contributes substantially to reducing the company's cost of equity.[78] The authors expanded their work to an international setting but narrowed their focus to corporate environmental responsibility (CER) measures. In a sample of 2,107 firms from 30 countries, they reached a similar conclusion in that companies with higher CER exhibited a lower cost of equity.[79]

These results are not consistent throughout all studies. In a study by different authors that covered 39 countries, the authors found that the strength of the relationship between cost of capital and CSR depends on the level of investor protection in that country.[80] Specifically, countries where investor protection is strong, the results suggested that the cost of equity fell when a company invested in CSR. Conversely, in countries where investor protection is poor, investing in CSR led to a rise in the cost of equity.

Other studies look at the perception of societal harm from companies as it relates to the cost of capital. There has been an increase in societal norms against funding operations that promote vices, and some institutional investors are willing to pay a financial cost for abstaining from investing in these vices.[81] A well-cited study finds that sin stocks have higher expected returns than otherwise comparable stocks, consistent with these stocks being neglected by norm-constrained investors and companies facing greater litigation risk due to changing social norms.[82] They refer to this as the "sin premium."[83]

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78 El Ghoul, Sadok, Omrane Guedhami, Chuck CY Kwok, and Dev R. Mishra. 2011. "Does corporate social responsibility affect the cost of capital?" *Journal of banking & finance* 35 (9): 2388–2406.

79 El Ghoul, Sadok, Omrane Guedhami, Hakkon Kim, and Kwangwoo Park. 2018. "Corporate environmental responsibility and the cost of capital: International evidence." *Journal of Business Ethics* 149: 335–361.

80 Breuer, Wolfgang, Torbjörn Müller, David Rosenbach, and Astrid Salzmann. 2018. "Corporate social responsibility, investor protection, and cost of equity: A cross-country comparison." *Journal of Banking & Finance* 96: 34–55.

81 The same argument can be applied to companies operating in industries that are perceived as harmful to the environment.

82 Hong, Harrison, and Marcin Kacperczyk. 2009. "The price of sin: The effects of social norms on markets." *Journal of Financial Economics* 93 (1): 15–36.

83 In the same vein, the argument can also apply to polluting firms. In the U.S. market, companies with higher carbon dioxide emission (CO_2) earn higher returns, controlling for size, book-to-market, and other return predictors; Bolton, Patrick, and Marcin Kacperczyk. 2021. "Do investors care about carbon risk?" *Journal of Financial Economics* 142 (2): 517–549.

However, others show that the sin premium disappears when controlling for additional risk factors of these companies (i.e., profitability and investment risk factors).[84] Other studies conclude that at the current level of socially conscious capital, there is no impact on the cost of capital. The authors conclude that exclusion of stocks (through divesting bad ESG stocks) does not drive investor flows enough to make a difference. Instead, they recommend more involvement in management decision-making for a larger impact on long-term cost of capital.[85]

In a sample of European firms in 17 countries that are members of the STOXX® Europe 600 index, other authors explore the relationship between ESG scores and cost of capital. They found that ESG scores do not have a significant impact on the cost of equity and betas unless the company is domiciled in a country with a weaker legal environment; in which case, a higher ESG score is associated with a lower cost of capital. The ESG score does have a significant positive impact on the cost of debt according to the authors. This can be explained by the fact that firms that have a high ESG score can obtain significantly more leverage. The "G" component is more important in this case, where firms with higher governance scores can improve their cost of capital, especially in countries with weaker legal systems. For context, these authors scored Finland the best in terms of legal environment, followed by Norway, Switzerland, and Denmark. The countries having the weakest legal environment scores were Italy, Poland, and Luxembourg.[86]

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84 Blitz, David, and Frank J. Fabozzi. 2017. "Sin stocks revisited: Resolving the sin stock anomaly." *The Journal of Portfolio Management* 44 (1): 105–111.

85 Berk, Jonathan, and Jules H. van Binsbergen. "The impact of impact investing." August 2021. Stanford Graduate School of Business Research Paper, Law & Economics Center at George Mason University Antonin Scalia Law School Research Paper Series No. 22-008. Available at SSRN: https://ssrn.com/abstract=3909166.

86 Priem, Randy, and Andrea Gabellone. November 2022. "The Impact of a Firm's ESG Score on Its Cost of Capital: Can a High ESG Score Serve as a Substitute for a Weaker Legal Environment?" Available at SSRN: https://ssrn.com/abstract=4286057.

For the Asset Manager

In Theory

We have seen more interest in portfolio performance measurement of ESG investing after the exceptional performance of ESG-related assets over the last few years. As outlined in prior sections, SRI was the first form in the evolution towards ESG investing and integration. In its original form, SRI entailed excluding certain types of investments considered sin stocks from portfolio allocation decisions (i.e., negative screening). Nowadays, SRI can also take the form of positive screening (e.g., investing in environmentally friendly stocks).

In theory, limiting investments to sustainable assets versus all available assets lowers performance. Asset exclusion lowers the benefits of diversification and leads to a constrained efficient frontier. In addition, the efficient market hypothesis predicts that SRI portfolios (and sustainable funds, by extension) cannot produce abnormal returns, since investors can always replicate these screening strategies based on public information.[87]

Some research papers found that underperformance by ESG funds is due to higher costs of holding such funds. The authors show that ESG funds appear to underperform financially, relative to other funds within the same asset manager and investment year, and charge higher fees. They also find that the underlying investments in these ESG funds perform worse when it comes to their E and "S" credentials relative to non-ESG funds by the same issuers. According to these authors, on average, ESG funds pick companies with worse employee treatment and environmental practices than non-ESG funds, precisely the opposite of the stated objective.[88]

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87 Kim, Chang-Soo. 2019. "Can socially responsible investments be compatible with financial performance? A meta-analysis." *Asia-Pacific Journal of Financial Studies* 48 (1): 30–64.

88 Raghunandan, Aneesh, and Shiva Rajgopal. 2022. "Do ESG funds make stakeholder-friendly investments?" *Review of Accounting Studies* 27 (3): 822–863.

A recent research paper tries to solve the disparate results between studies, some finding a "carbon premium" (i.e., higher performance by green stocks (in this case, green stocks are defined as being more climate-friendly) relative to brown stocks, while others find the exact opposite). Using carbon dioxide (CO_2) emissions reported by companies to measure their level of "greenness," the authors found that green stocks across G-7 countries have generally provided higher returns than brown stocks for much of the past decade. However, they found that brown stocks outperformed green ones during the energy crisis of 2022.[89]

Transition Period

The last few years marked a period of transition where investors moved to more sustainable portfolios, either to reduce ESG-related risks or to gain nonfinancial utility from holding green assets (either ESG-focused or environmentally friendly investments). Because of this change in allocation towards green assets, these assets might earn excess returns. So, the results of the empirical studies may be dependent on what period is studied.[90] Hence, we observe contrasting evidence for the relationship between ESG ratings and returns during this transition period to a new equilibrium.

Some research has found that over the 2016–2021 period, the performance of sustainability-focused mutual funds was mainly due to the flow of funds into these assets leading to upward price pressures and causing high realized returns, which did not reflect expected returns.[91] The study argued that for every dollar flowing from the market portfolio into sustainability-focused mutual funds, the aggregate value of green stocks increased by USD 0.40. In the absence of flow-driven price pressure, sustainable funds would have underperformed the market from 2016 to 2021, according to this author.

In another study, the authors found that investors value sustainability itself positively (i.e., for nonfinancial utility). Morningstar, Inc. first published mutual fund sustainability ratings back in March 2016 for 20,000+ U.S. funds. Mutual funds categorized as low-sustainability saw an outflow of USD 12 billion, while funds holding assets categorized as high-sustainability saw net inflows of more than USD 24 billion over an 11-month period after the ratings were originally issued. Experimental evidence suggests that sustainability is viewed as positively predicting future performance; however, the authors found no evidence that high-sustainability funds outperformed low-sustainability funds.[92]

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89 Bauer, Michael, Daniel Huber, Glenn D. Rudebusch, and Ole Wilms. 2022. "Where is the Carbon Premium? Global Performance of Green and Brown Stocks." *Journal of Climate Finance* 1, 100006. The Group of Seven (G-7) is an intergovernmental political forum consisting of Canada, France, Germany, Italy, Japan, the UK, and the U.S.; additionally, the EU is a "non-enumerated member."

90 Cornell, Bradford. 2021. "ESG preferences, risk and return." *European Financial Management* 27 (1): 12–19.

91 van der Beck, Philippe. 2021. "Flow-driven ESG returns." Swiss Finance Institute Research Paper No. 21-71. Available here: https://ssrn.com/abstract=3929359.

92 Hartzmark, Samuel M., and Abigail B. Sussman. 2019. "Do investors value sustainability? A natural experiment examining ranking and fund flows." *The Journal of Finance* 74 (6): 2789–2837.

Divergence Between Ratings

Transitioning from a traditional investment profile into a more sustainable investment profile is complicated by the significant divergence in the ratings assigned by different ESG ratings agencies. Numerous ESG ratings providers use varying different methodologies, as discussed earlier.[93] The sheer number of rating agencies is not an issue, but their divergence in rating the same companies is problematic.[94] This level of divergence is not observed when credit rating agencies issue a debt rating for the same company, and, unlike ESG ratings, the correlation between interagency debt ratings is quite high.

This diversion not only confuses investors, but it also makes it difficult to correctly identify green versus brown firms, according to another study. First, ESG rating uncertainty reduces investor demand for stocks, especially for ESG-sensitive investors (i.e., norm-constrained institutions) in their ESG investments (e.g., green stocks). Second, brown stocks outperform green stocks *only* when rating uncertainty is low, and the negative return predictability of ESG ratings does not hold for the remaining firms. Third, ESG rating uncertainty could increase the cost of capital for green companies.[95] ESG uncertainty affects the risk-return trade-off. ESG disagreement is associated with higher return volatility, larger absolute price movements and a lower likelihood of issuing external financing.[96]

Looking at individual ESG ratings for companies in the S&P 500 index, other authors find that stock returns are positively related to ESG rating disagreement. They argue that this suggests there is a risk premium for firms with higher ESG rating disagreement, especially in the environmental dimension.[97] Studies focusing on the source of disagreement find that there is a rater effect, where more than half of the ESG rating divergence can be attributed to ESG ratings agencies measuring different values for the same category.[98]

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93 Also, see Li, Feifei, and Ari Polychronopoulos. January 2020. "What a difference an ESG ratings provider makes." *Research Affiliates*. Available here: https://www.researchaffiliates.com/publications/articles/what-a-difference-an-esg-ratings-provider-makes. The authors identified 70 different providers of ESG ratings as of the end of 2019, excluding the multitude of investment banks, government organizations, and research institutions that conduct ESG-related research which can be used to create customized ratings.

94 Dimson, Elroy, Paul Marsh, and Mike Staunton. 2020. "Divergent ESG ratings." *The Journal of Portfolio Management* 47 (1): 75–87.

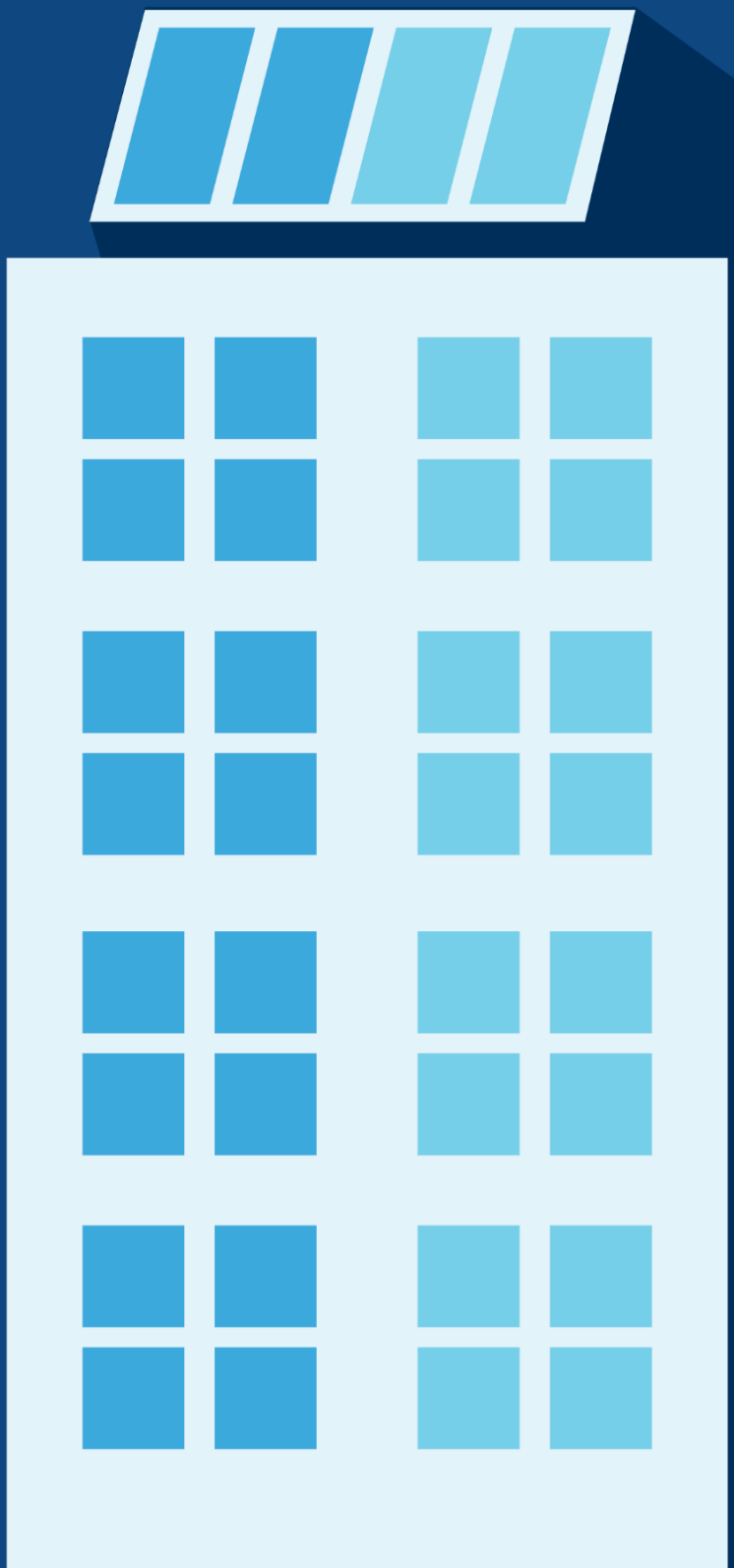
95 Avramov, Doron, Si Cheng, Abraham Lioui, and Andrea Tarelli. 2022. "Sustainable investing with ESG rating uncertainty." *Journal of Financial Economics* 145 (2): 642–664.

96 Christensen, Dane M., George Serafeim, and Anywhere Sikochi. 2022. "Why is corporate virtue in the eye of the beholder? The case of ESG ratings." *The Accounting Review* 97 (1): 147–175.

97 Gibson Brandon, Rajna, Philipp Krueger, and Peter Steffen Schmidt. 2021. "ESG rating disagreement and stock returns." *Financial Analysts Journal* 77 (4): 104–127.

98 Berg, Florian, Julian F. Koelbel, and Roberto Rigobon. 2022. "Aggregate confusion: The divergence of ESG ratings." *Review of Finance* 26 (6): 1315-1344.

ESG and Global Investment Returns Study Results



ESG and Global Investment Returns Study Results

Methodology Overview

This section provides a brief overview of the methodology for the Kroll ESG and Global Investment Returns Study ("ESG Returns Study"). The full methodology can be found in Appendix 1.

Introduction

Our objective with this inaugural study was to ascertain whether a relationship exists between a company's equity returns and its ESG rating. The ratings are used as a proxy of where a company is in its journey to address risks stemming from ESG factors.

When estimating the value of a company or an investment, practitioners often make arbitrary or subjective adjustments to discount rates (cost of capital) to capture different sources of risk. That can lead to under- or overvaluation of an investment, particularly if not supported by theory or by empirical evidence.

From an asset pricing perspective, we try to quantify expected risk: can an investor expect different returns to compensate for different ESG risks? Taking a systematic risk perspective (i.e., based on CAPM and other asset pricing/risk models), the answer is not clear. As discussed in the previous section, some academics will argue that ESG is a source of systematic risk (which should have a corresponding impact on cost of capital), while others will argue that relationship is absent. Of course, this presumes that ESG sources of risk are being fully captured in the projected cash flows—in that case, only systematic risks should be reflected in the cost of capital. What if they are partly (or totally) missing from the projected cash flows? Can an adjustment be made to the discount rate to account for these ESG risks (or opportunities) that is supportable?

One thing is certain: material flows of capital into or away from certain themes or types of investment will have an impact on realized returns. That can lead to a gap between the returns that were expected (ex-ante) versus what was realized (ex-post) for a given investment strategy. This is no different than what we observe for other types of risk (e.g., equity risk premium, size premium).

In this first edition of our study, we wanted to ascertain whether there is empirical evidence that supports the relationship between equity returns earned by a company and its ESG rating. The Kroll ESG Returns Study is different from other studies owing to its sheer comprehensiveness: we examine the correlation between company ESG ratings and returns for four geographic regions (World, North America, Western Europe and Asia) and 12 countries/markets (Australia, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Japan, South Korea, the UK and the U.S.). In addition, within some of these geographies, we further scrutinize the results for 11 industries (as defined by the GICS® structure): Energy, Materials,

Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Communications Services, Utilities and Real Estate.[99]

We plan on extending this study to analyze whether some of the results observed were due to certain firm characteristics (e.g., size) or if the relationship observed in the 2013–2021 period can be expected to continue in the future.

Foundation of the ESG Returns Study – Selecting a Source for ESG Ratings

According to an analysis of SustainAbility, an ERM Group company, there were 600+ ESG ratings and rankings providers globally as of 2018. SustainAbility claimed that the number of providers had grown through the date of the report (March 2020).[100] The analysis did not specify how many providers supplied data to corporates versus funds, nor did it distinguish between ratings versus rankings. In addition, it appears that this figure does not distinguish between providers that focus exclusively on one of the pillars of ESG (e.g., environmental ratings) versus broader composite ratings. Nonetheless, the number of providers is clearly rather large, making it difficult to find a consensus between them. To be fair, some of these have been acquired and folded into existing ratings businesses, so there could be some overlap. In fact, in a 2023 update to its survey, SustainAbility acknowledges that "[t]he ESG rating landscape has undergone significant shifts and consolidation," but it no longer provides an estimate of number of providers.[101]

In early 2021, we conducted an analysis of main providers of corporate ESG ratings to decide on which source to use for our analysis. We interviewed researchers at some of these providers to better understand their rating methodology. Ultimately, our decision tried to balance some of the following key elements:

1. **Coverage period:** a longer period of ratings availability was preferred, so that the returns over time were more meaningful.

2. **Coverage depth:** the largest possible number of companies with an ESG rating that were publicly traded in global markets (while also maximizing the coverage period (see above)).

3. **Frequency of re-rating:** ESG ratings should not be the same for an entire year for all companies in the rating universe. While we acknowledge there is an element of stability in ratings, if an ESG-related event is material to a company (e.g., controversy), its rating should be changed without having to wait for the next annual review period.

4. **Composite ESG ratings:** The ratings provider must publish composite ESG ratings (i.e., aggregating the ratings of each of the three pillars: environmental, social and governance).

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99 The Kroll ESG Returns Study relies upon the GICS® structure as of the end of calendar year 2021 for industry classification purposes. In 1999, MSCI and S&P Dow Jones Indices introduced the GICS®, consisting of 10 industry sectors, which was expanded to 11 in September 2016 to include Real Estate. Effective March 17, 2023 (after market close), *[continued on next page]* some subindustry groups were reclassified from Information Technology to Financials. The ESG Returns Study does not incorporate these most recent GICS® changes.

100 SustainAbility, "Rate the Raters 2020: Investor Survey and Interview Results," March 2020. Available here: https://www.sustainability.com/globalassets/sustainability.com/thinking/pdfs/sustainability-ratetheraters2020-report.pdf.

101 SustainAbility, "Rate the Raters 2023: ESG Ratings at a Crossroads," March 2023. Available here: https://www.sustainability.com/globalassets/sustainability.com/thinking/pdfs/2023/rate-the-raters-report-april-2023.pdf.

5. **Rating methodology:** The rating conclusion for a company must be independent of whether or not the company filled out an ESG survey by the ratings provider.

Based on the combination of these factors, we decided that MSCI was the best source of ESG ratings to use for the ESG Returns Study.[102]

Background on MSCI ESG Ratings

According to MSCI, its ESG ratings "aim to measure a company's management of financially relevant ESG risks and opportunities. [MSCI] use[s] a rules-based methodology to identify industry Leaders and Laggards according to their exposure to ESG risks and how well they manage those risks relative to peers."[103] While individual investors may use MSCI ESG ratings to make investment decisions based on personal values or in the pursuit of impact investing, MSCI is clear in stating that its ratings are designed to enhance long-term returns and manage ESG financial risks of an investment.[104] In other words, MSCI ESG ratings support ESG integration into investment decisions.

MSCI's ESG ratings trace their origin back to MSCI's acquisition of RiskMetrics in 2010.[105] RiskMetrics itself had grown through a series of acquisitions, most notably Innovest in February 2009 and KLD in November 2009.[106] KLD and Innovest combined became what is known today as MSCI ESG ratings. According to researchers Robert G. Eccles et al, Innovest's methodology strongly influenced MSCI ESG research.[107] These co-authors report that MSCI decided against a merger of the then-existing ESG methodologies of KLD and Innovest, opting instead to keep the latter's Intangible Value Assessment (IVA) as the core methodology on which to build what today is known as MSCI ESG ratings. Some components of KLD were used to enhance the IVA-based ratings.

Nevertheless, the IVA ratings methodology (and the successor MSCI ratings) underwent significant changes, making comparisons across time less meaningful.[108] Because of this, as well as the significant increase in coverage starting in 2012 (and more so in 2013), our analysis only captures MSCI ESG ratings from 2013 onward. For perspective, Exhibit 7 shows the monthly average number of issuers that are included in MSCI's ESG ratings database for the period of 2007–2021.[109]

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102 Our decision was made in mid-2021. Subsequent to our decision, ratings coverage and methodologies may have changed for the providers we analyzed.

103 "What is an MSCI ESG Rating?" Available here: https://www.msci.com/our-solutions/esg-investing/esg-ratings.

104 "What MSCI's ESG Ratings are and are not." Available here: https://www.msci.com/our-solutions/esg-investing/esg-ratings/what-esg-ratings-are-and-are-not.

105 "MSCI Buys RiskMetrics," Integrity Research Associates, March 1, 2010. Available here: https://www.integrity-research.com/msci-buys-riskmetrics/.

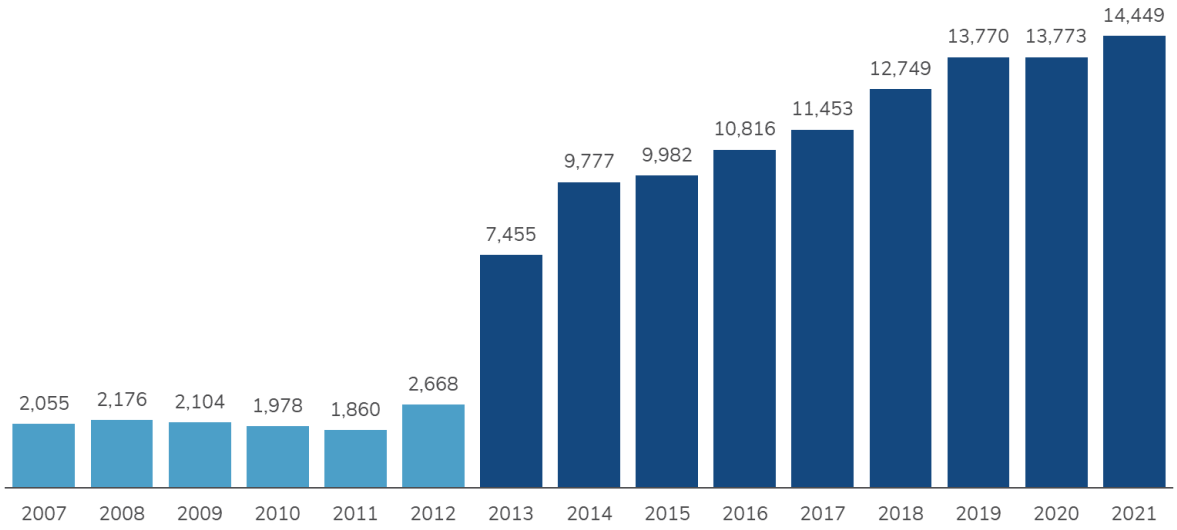
105 KLD Research & Analytics, Inc. was formerly known as Kinder, Lydenberg, Domini & Co, named after its founders in 1988. KLD was a major provider in the SRI index business. Innovest Strategic Value Advisors, Inc. was another major ESG research provider. Other companies acquired by RiskMetrics included Centre for Financial Research and Analysis (CFRA) and Institutional Shareholder Services (ISS), Inc., but both were disposed by MSCI in 2013.

107 Eccles, Robert G. and Lee, Linda-Eling and Stroehle, Judith, "The Social Origins of ESG?: An Analysis of Innovest and KLD," August 20, 2019. Available at SSRN: https://ssrn.com/abstract=3318225. These authors also indicated that even though MSCI still provides KLD assessments, due to the changes in data collection, this "new" KLD data (post-MSCI acquisition) is not directly comparable with historical KLD data from before 2010.

108 "Intangible Value Assessment (IVA) Rating History 2007–2012 – Updated September 2012," MSCI ESG Research.

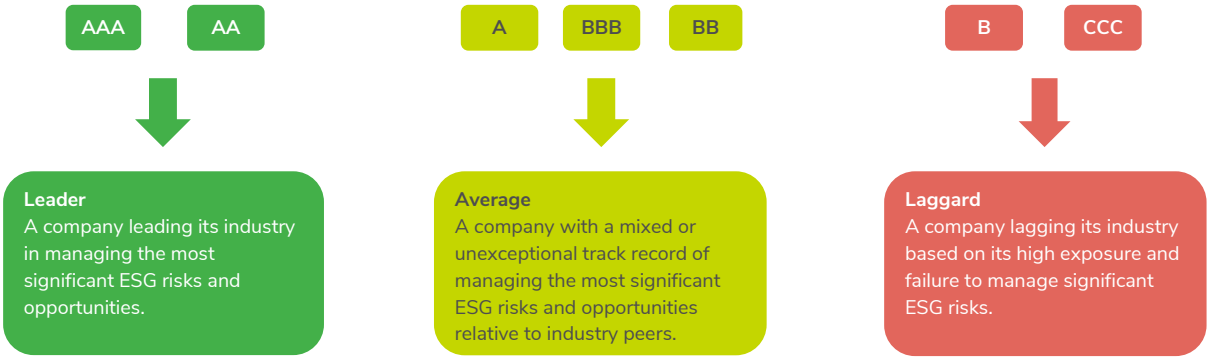
109 "MSCI ESG Ratings Time Series 2007–Present," MSCI ESG Research LLC, April 2023.

Exhibit 7: Monthly Average Number of Issuers Included in the MSCI ESG Ratings Time Series



MSCI ESG ratings are further categorized from Leader (AAA, AA), to Average (A, BBB, BB), to Laggard (B, CCC), as shown in Exhibit 8. As previously mentioned, MSCI uses a rules-based methodology to identify industry Leaders and Laggards according to their exposure to ESG risks and opportunities and how these are managed compared to peers. In other words, the MSCI ESG ratings are not absolute. Rather, companies in each industry are ranked relative to each other based on how ESG risks and opportunities affect their respective bottom lines. In addition, MSCI generally ranks companies on a bell-shaped curve, which results in a much smaller proportion of companies rated at each end of the rating scale (i.e., as either AAA or CCC (the "tail" ends of the curve)).[110]

Exhibit 8: Classification of MSCI ESG Ratings by Letter Grade and as Leader, Average and Laggard



[110] Source: "What is an MSCI ESG Rating?" and "How does MSCI ESG Ratings work?", both accessed on June 29, 2023. Available here: https://www.msci.com/our-solutions/esg-investing/esg-ratings.

Different ESG risks and opportunities can impact different industries (e.g., water usage may not be material for some industries), but corporate governance is considered by MSCI to be of universal importance, and therefore examined for all industries. Exhibit 9 outlines the methodological framework that MSCI uses under each of the three pillars: E, S and G. There were 10 "themes," and 35 "key issues" at the end of 2021. Within each of these key issues, various metrics will be used to measure a company's exposure or handling of those issues.[111]

Exhibit 9: MSCI ESG Key Issues Framework

Environment Pillar

Climate Change	Natural Capital	Pollution and Waste	Environmental Opportunities
– Carbon Emissions	– Water Stress	– Toxic Emissions and Waste	– Opportunities in Clean Tech
– Product Carbon Footprint	– Biodiversity and Land Use	– Packaging Material and Waste	– Opportunities in Green Building
– Financing Environmental Impact	– Raw Material Sourcing	– Electronic Waste	– Opportunities in Renewable Energy
– Climate Change Vulnerability			

Social Pillar

Human Capital	Product Liability	Stakeholder Opposition	Social Opportunities
– Labor Management	– Product Safety and Quality	– Controversial Sourcing	– Access to Communications
– Health and Safety	– Chemical Safety	– Community Relations	– Access to Finance
– Human Capital Development	– Consumer Financial Protection		– Access to Health Care
– Supply Chain Labor Standards	– Privacy and Data Security		– Opportunities in Nutrition and Health
	– Responsible Investment		
	– Health and Demographic Risk		

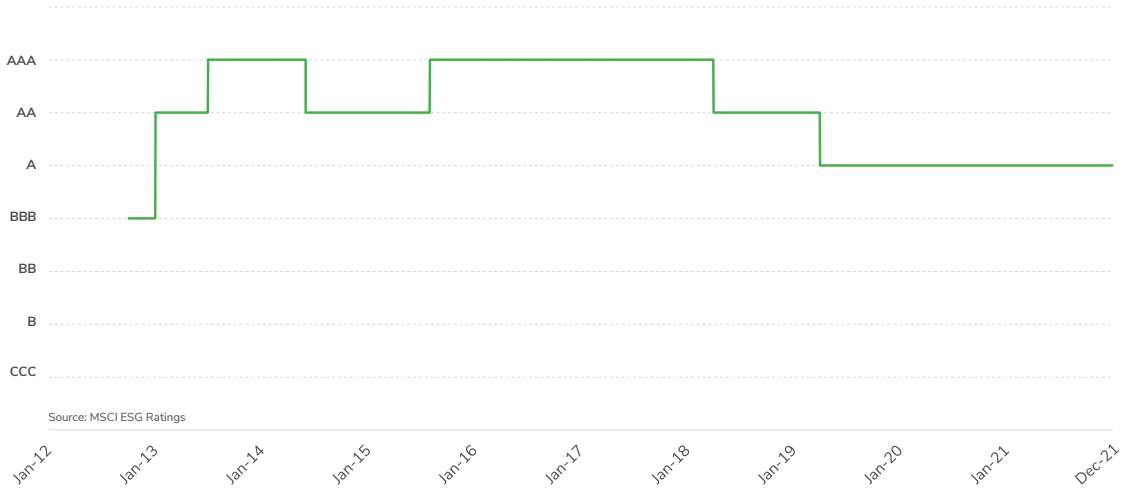
Governance Pillar

Corporate Governance	Corporate Behavior		
– Ownership and Control	– Business Ethics		
– Board	– Tax Transparency		
– Pay			
– Accounting			

While a naïve review of MSCI ESG ratings might overly focus on environmental issues (the E pillar), that is not how MSCI determines an individual company's composite (or overall) ESG rating. For example, one may be tempted to think that a company such as Tesla, a leader in the electric vehicle market, would earn a top AAA rating due to its superior environmental credentials in its industry segment. However, when the other two pillars (social and governance) are considered, Tesla is not always classified at the top of the rankings, as illustrated in Exhibit 10. The Kroll ESG Returns Study examined the relationship of composite (or overall) ESG ratings and stock returns, rather than focusing on just one of the pillars within ESG.

[111] Source: "ESG Ratings Methodology," MSCI ESG Research LLC, December 2021. MSCI changes its ESG key issues from time to time. The current key issues may differ from those prevailing back in 2021.

Exhibit 10: Tesla MSCI ESG Ratings Over Time (2012–2021)



According to MSCI, to arrive at a final ESG rating, the weighted average of individual environmental and social key issue scores and the governance pillar score is calculated and then normalized relative to the ESG rating of industry peers. After MSCI committee-level overrides are factored in (if any), each company's numerical Final Industry-Adjusted Score corresponds to a letter rating between best (AAA) and worst (CCC).

Universe of Companies in the ESG Returns Study

The time horizon used in this study is January 2013–December 2021 (i.e., 108 months or 9 years). To be included in the study, a company needed to have publicly traded common shares (i.e., private companies, as well as preferred and other hybrid securities were eliminated in our screening process). In addition, a company needed to have a minimum of one month of market capitalization ("market cap") data in the December 2012–November 2021 period and one month of total returns in the January 2013–December 2021 period. Overall, there were over 13,000 companies that met the screening criteria and were included in the analysis over the study period. However, the actual number of companies in each month varied by year and by region, as illustrated in Exhibit 11. Coverage increased significantly over time, as MSCI expanded the universe of companies for which it issued an ESG rating. For a more complete description of the procedures undertaken to arrive at the final data set, refer to Appendix 1.

Exhibit 11: Number of Companies Included in the Study – Summary Statistics

	Jan 2013	Dec 2021	January 2013–December 2021			
Regions	Nr. of Cos.	Nr. of Cos.	Average	Median	Max	Min
World	4,759	10,670	7,512	7,151	10,698	4,759
North America	2,305	3,033	2,723	2,742	3,062	2,305
Asia	1,111	4,197	2,233	1,794	4,202	1,111
Western Europe	688	1,929	1,432	1,572	1,934	687

General Procedures to Calculate Returns by ESG Rating

We built investment portfolios comprised of companies rated under each of MSCI's seven individual ESG rating categories (i.e., AAA, AA, A, BBB, BB, B and CCC) and aggregate ratings (i.e., Leaders, Average and Laggards) for each geographic region and country/market. These portfolios were rebalanced monthly.

We then constructed indexes to calculate the ending value of each portfolio at the end of December 2021, if USD 1 had been invested at the beginning of the study period (i.e., December 2012). The indexes used in this ESG Returns Study were created by Kroll using market-capitalization-weighted ("cap-weighted") index construction techniques like those used to create the S&P 500 Index and other well-known indexes, including the MSCI USA Index. Total returns (i.e., dividend plus capital appreciation) for each portfolio were calculated in U.S. dollars to allow for comparison across geographies. The total return over the full study period was then annualized by computing the compound annual growth rate of each portfolio.

For more detailed procedures, refer to Appendix 1.

Study Results – Highlights

Key Findings

- Global portfolios of companies with higher ESG ratings earned a better annual compound return, when compared to portfolios of worse-rated companies over the 2013–2021 period.
- This relationship generally holds for the major geographic regions and for most countries/markets in the study. Specifically, with the notable exceptions of Brazil and Germany, 10 out of the 12 countries/markets analyzed individually saw companies rated as ESG Leaders outperform Laggards (Australia, Canada, China, France, Hong Kong SAR, India, Japan, South Korea, the UK and the U.S.).
- In the case of Brazil, only companies considered Laggards from an ESG rating perspective managed to earn a positive annual return during this period (in USD terms). In Germany, while all companies saw a positive annual return, the performance of lower-rated companies far outweighed that of the leading ESG companies.
- In the U.S., the country with the largest number of rated companies, the ESG Leaders earned an annual compound return of 20.3%, compared to the 13.9% annual compound return earned by Laggard companies. This represents an almost 50% premium in terms of relative performance by leading ESG companies.
- Industries within the World portfolio also saw ESG Leaders generally outperform Laggards, except for Consumer Staples and Health Care. When industries were analyzed within regions or individual countries/markets, the relationship between returns and ESG ratings was less pronounced. In some cases, a pattern is not even discernable, meaning that ESG does not seem to be a driver of investment decisions for those country/industry combinations.
- Focusing on U.S. industries, companies with the best ESG ratings do not always come out on top. For example, U.S. ESG Leaders outperformed Average- and Laggard-rated companies in only five of the 11 industries examined (see Exhibit 12). In the case of U.S. Consumer Discretionary, Consumer Staples and Industrials, companies with an Average rating outperformed both Leaders and Laggards, although the latter still did worse than leading ESG companies. On the other hand, U.S. Laggards in the Energy, Health Care and Communications Services sectors significantly outperformed their better-rated counterparts.

Exhibit 12: Companies with the Best ESG Ratings Do Not Always Come Out on Top (U.S. Company Results)

Industries where **Leaders** outperformed Average- and Laggard-rated companies

- GICS 15 - Materials
- GICS 40 - Financials
- GICS 45 - Information Technology
- GICS 55 - Utilities
- GICS 60 - Real Estate

Industries where **Average**-rated companies outperformed Leader- and Laggard-rated companies, but Leaders still outperformed Laggard-rated companies

- GICS 20 - Industrials
- GICS 25 - Consumer Discretionary
- GICS 30 - Consumer Staples

Industries where **Laggard**-rated companies outperformed Leader- and Average-rated companies

- GICS 10 - Energy
- GICS 35 - Health Care
- GICS 50 - Communication Services

Caveats

- As more scrutiny is placed on what constitutes an ESG-focused investment, capital allocations may change the relationship observed in our study.
- Because there are fewer companies with an ESG rating in some countries/industries, the results are not as meaningful as those for broader geographic regions. This is also the case with the even more granular results for the seven individual ESG rating categories (i.e., AAA, AA, A, BBB, BB, B and CCC).
- The study only covered companies that had an ESG rating assigned by MSCI. It did not cover the entire universe of publicly traded companies around the world.
- Our analysis relies on ESG rating assessments made by MSCI. Using other ESG rating providers as a source could have resulted in different outcomes.

Results by Rating and Industry Shown in the Study

The sheer volume of data from the results obtained for the various combinations of geographic regions, countries, industries and ratings led us to limit the discussion contained in this static version of the ESG Returns Study. Specifically, we elected to display the overall results for the World, North America, Western Europe, and Asia regions, but not for individual countries/markets. Instead, we provided some highlights of individual countries/markets within each respective geographic region, when appropriate. Because there was insufficient data to create a Latin America region, Brazil results were highlighted only as part of the key findings above. Australia was the other major economy not discussed as part of a geographic region. Had we attempted to create an Oceania region, it would be overwhelmingly comprised of Australian companies, which render the regional results meaningless. Furthermore, industry results were only displayed in some cases, when discussing certain patterns observed within the World portfolio. Readers of the ESG Returns Study have the ability to analyze the results for a variety of regions, countries/markets and industries, by accessing the dynamic version of our report.[112]

[112] Full interactive report available here: www.kroll.com/esg-global-investor-returns-study.

Global Results by Rating and Industry

World Portfolio by ESG Rating

As illustrated below in Exhibit 13, our study reveals that companies with a Leader ESG rating earned a significantly higher cumulative total return than companies with a Laggard rating over the 2013–2021 period. We also show a comparison to the cumulative (total) returns earned by MSCI ACWI IMI Index; a typical benchmark used for global stock markets. Although the comparison is not completely on an apples-to-apples basis (as the companies included in the ESG Returns Study overlap but are not the same as those in the index owned by MSCI), companies with the highest ESG ratings also outperformed the MSCI ACWI IMI Index during this period.

Exhibit 13: World – Aggregate MSCI Ratings (Leader, Average, Laggard) vs. MSCI ACWI IMI Index Cumulative Return (USD 1 Invested in December 2012)
January 2013–December 2021

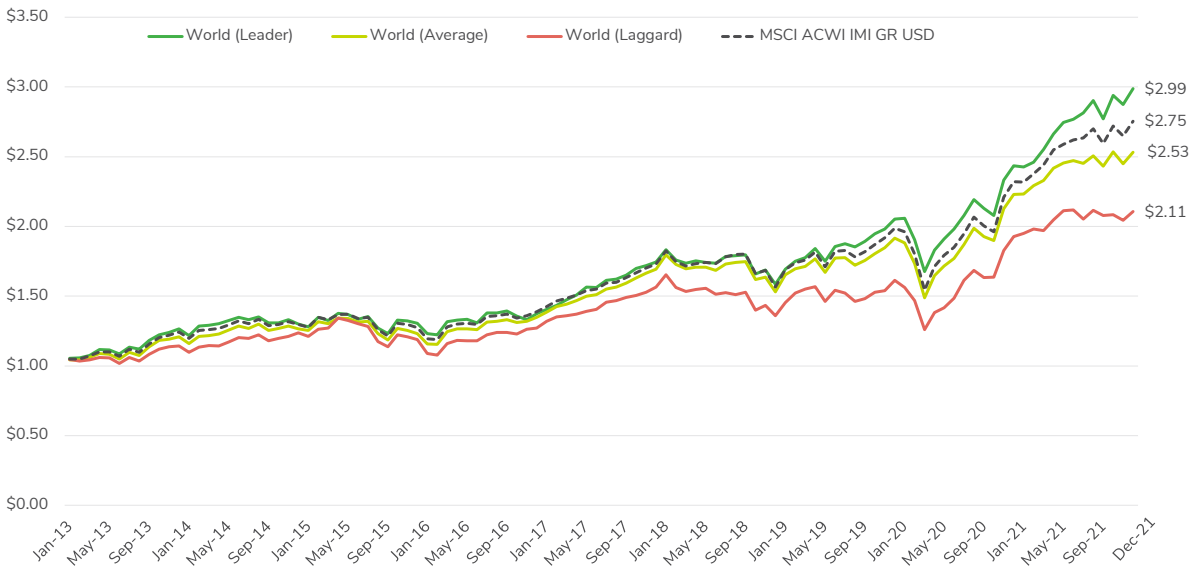
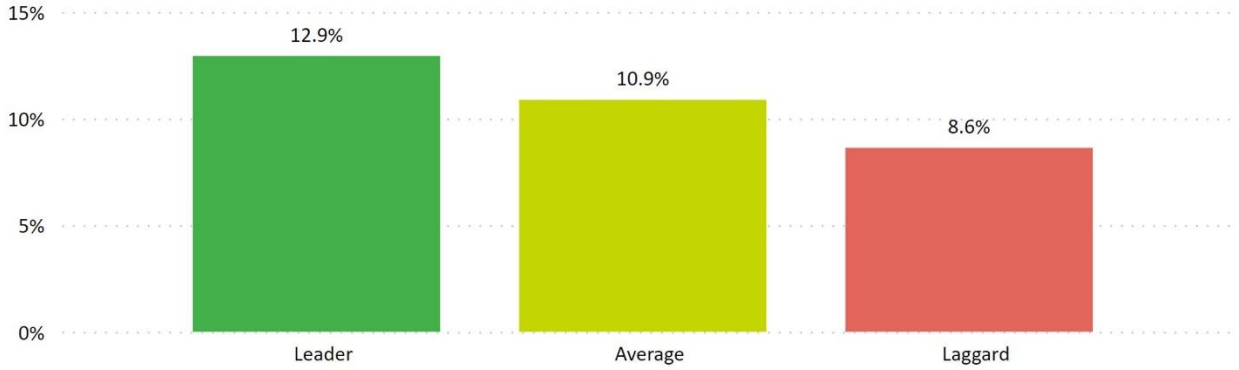


Exhibit 14 converts the data for the World's Leader, Average and Laggard portfolios into compound annual returns for the 2013–2021 period, as it is more intuitive to analyze.[113] The World's ESG Leaders earned an annual return of 12.9%, which compares to an 8.6% annual return earned by Laggard companies. This represents an approximately 50% premium (= 12.9% / 8.6% – 1) in terms of relative performance by ESG Leader companies.

Exhibit 14: World – Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021



Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	941	1,486
Average	4,780	6,621
Laggard	1,791	2,563
Total	7,512	10,670

[113] For avoidance of doubt, all returns reported in the ESG Returns Study are compound annual returns (also known as geometric average returns).

This relationship also holds at a more granular rating level. As Exhibit 15 demonstrates, when analyzing the results for the seven ESG rating categories (AAA, AA, A, BBB, BB, B and CCC), companies with a better (higher) rating have generally outperformed those companies with worse (lower) ratings, although the relationship is not completely linear.

Exhibit 15: World – Compound Annual Return by Individual ESG Rating
January 2013–December 2021

Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
AAA	198	245
AA	743	1,241
A	1,270	1,981
BBB	1,747	2,411
BB	1,764	2,229
B	1,390	1,845
CCC	401	718
Total*	7,512	10,670

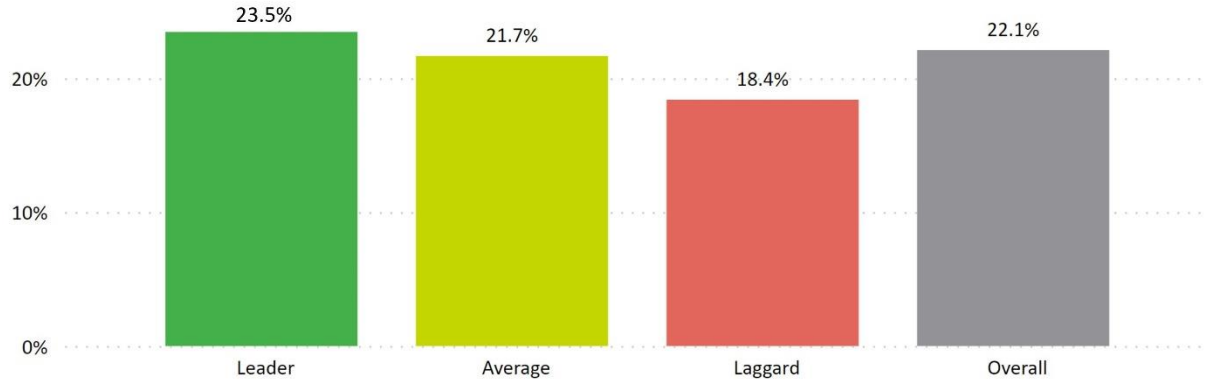
* Differences due to rounding.

World Portfolio by Industry

The full interactive report containing additional data for the various industries analyzed, can be found **here**.

Exhibit 16 shows an example of how global companies performed over the study period based on their aggregate rating. Specifically, Information Technology companies enjoying a Leader rating earned a higher average return (23.5%) than those with a Laggard rating (18.4%). This compares to the overall Information Technology performance of 22.1% annual average return.

Exhibit 16: World – Information Technology Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021



Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	80	134
Average	553	733
Laggard	181	341
Total	815	1,208

* Differences due to rounding.

Some market analysts claim that ESG investing's outperformance in some periods is attributable to the overweighting of technology stocks.[114] Prior to the 2022 rout in tech stocks (which was primarily attributable to a significant rise in global interest rates), Information Technology had been generally outperforming other industries globally. However, we find that the outperformance by the best ESG-rated companies is not limited to the tech space. Exhibit 17 shows an example of how highly rated companies in other industries have also outperformed their peers globally.

[114] For example, see Wenzel, Fernanda, "Behind the buzz of ESG investing, a focus on tech giants and no regulation," Mongabay, April 30, 2021. Available here: https://news.mongabay.com/2021/04/behind-the-buzz-of-esg-investing-a-focus-on-tech-giants-and-no-regulation/. Also, see "Tech Stocks Slump is Triggering the Withdrawn of ESG Funds: Here's Why," SG Analytics, May 26, 2022. Available here: https://us.sganalytics.com/blog/tech-stocks-slump-triggering-withdrawn-of-esg-funds/.

In this case, Leaders in Communication Services have earned 9.2% on average during the 2013–2021 period, which compares to 7.5% for Laggard companies (a relative premium of approximately 23%, or 9.2% / 7.5% – 1).

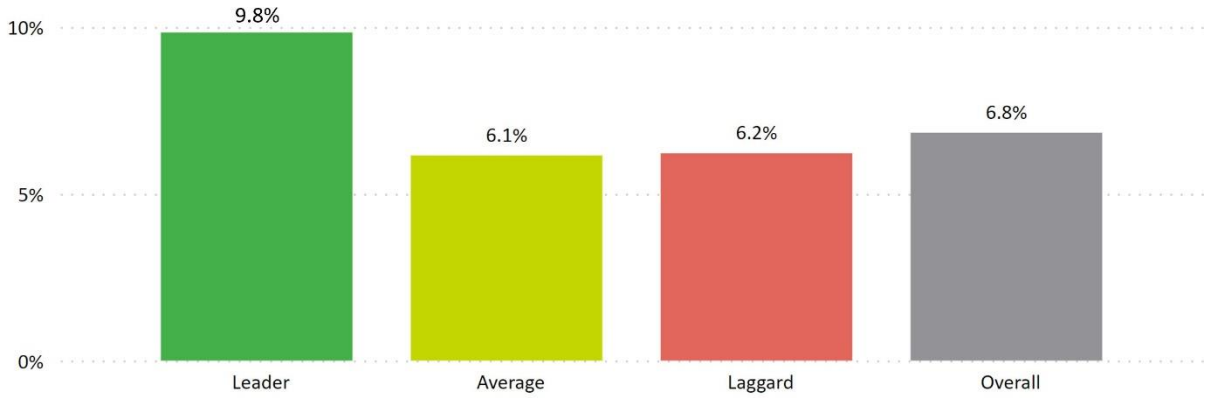
Exhibit 17: World – Communication Services Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021

Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	52	68
Average	225	340
Laggard	85	135
Total	361	543

* Differences due to rounding.

Having said that, the relationship is not always linear between ratings and return performance. As shown in Exhibit 18, Real Estate companies with an ESG Leader rating earned a higher average return (9.8%) than those with a Laggard rating (6.2%). However, companies with an Average ESG rating earned essentially the same average return (6.1%) as Laggards. This is an example of an industry where there is no discernable difference in returns between different ESG ratings, except for the outperformance of top-rated companies.

Exhibit 18: World – Real Estate Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021



Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	52	76
Average	287	466
Laggard	167	232
Total	506	774

Finally, Exhibit 19 illustrates one of the two industries globally where companies with the worst ESG ratings outperformed their better-rated counterparts. In this case, Laggard companies in Consumer Staples (the other example being in Health Care) earned a higher average return (10.9%) than the average return achieved by both Average (8.2%) and Leader (7.4%) companies in the 2013–2021 period.

Exhibit 19: World – Consumer Staples Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021

Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	71	114
Average	297	411
Laggard	115	178
Total	483	703

* Differences due to rounding.

Highlights by Geographic Region

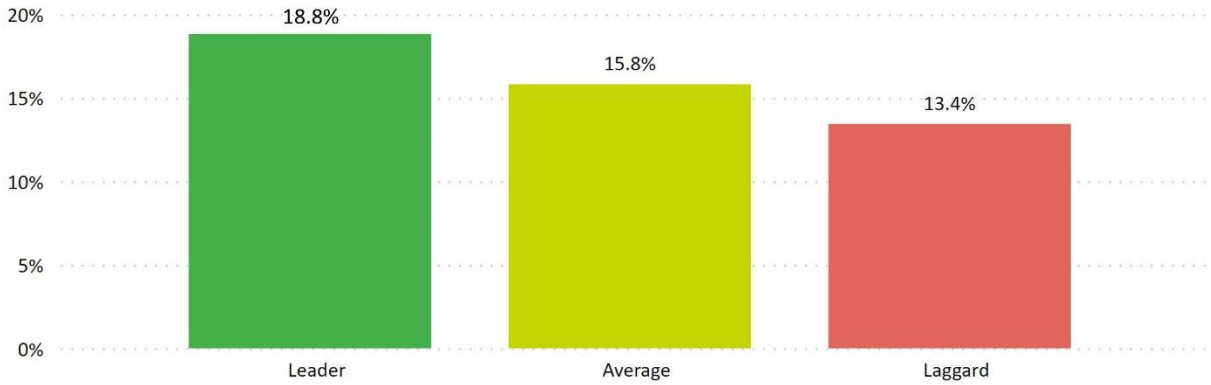
The full interactive report containing additional data for various geographies and industries analyzed can be found **here**. Some of the figures cited can only be found in the full interactive report.

The following are selected highlights of the results obtained for North America, Western Europe, and Asia.

North America

- The North America region encompasses Canada and the U.S., but the results are significantly skewed towards the performance of U.S. companies. This is a result of data availability: as discussed in Appendix 1, almost 89% of the observations in North America are from U.S.-based companies.
- North American companies with better (higher) ESG ratings earned a higher annual average return, when compared to portfolios of worse (lower) rated companies during the 2013–2021 period (see Exhibit 20). This was the case both in Canada and in the U.S.
- U.S. ESG Leaders outperformed Laggards by a relative premium of 46% (= 20.3% / 13.9% – 1). In Canada, companies with a Leader rating earned almost triple (9.2%) the average return achieved by Laggards (3.2%). Nevertheless, the relatively small number of Canadian Laggard companies may have distorted the results. In general, the proportion of ESG Leaders is higher in Canada than in the U.S. at 18% versus 9%, respectively.
- North America industry performance followed the aggregate trend, with better-rated companies generally outperforming worse-rated ones. Health Care was a notable exception, where Laggards earned a significantly higher return than companies with better ratings. Laggard companies in Energy also outperformed, but this was an industry with a very small number of companies rated as Leader, which may have skewed the results.
- The relationship between ESG ratings and performance is not linear when reviewing individual industries within North America. For example, there were four industries where companies with an Average rating outperformed both Leaders and Laggards: Consumer Discretionary, Consumer Staples, Financials and Industrials. In all these instances, however, Leaders still outperformed Laggards.

Exhibit 20: North America Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021



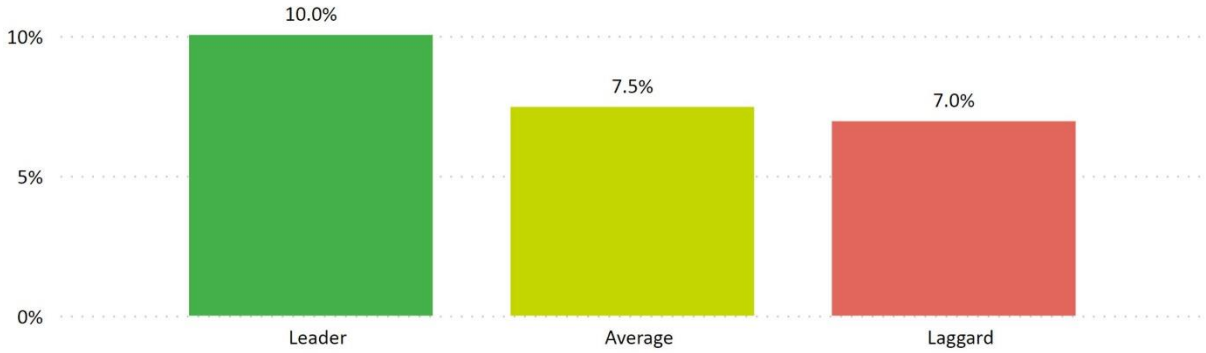
Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	181	312
Average	1,904	2,198
Laggard	639	523
Total	2,723	3,033

* Differences due to rounding.

Western Europe

- European companies with better (higher) ESG ratings earned a higher annual average return, when compared to portfolios of worse (lower) rated companies during the 2013–2021 period (see Exhibit 21).
- European companies are further along in their ESG journey, according to MSCI. European companies were generally better rated by MSCI than in other regions. For example, in December 2021, nearly a third of Western European companies were rated as ESG Leaders and only 6% (= 122 / 1,929) were considered Laggards. In contrast, only 10% of North America and 6% of Asia companies enjoyed a Leader rating. North America and Asia also saw a greater proportion of Laggards, at 17% and 38%, respectively.
- Industry performance followed the aggregate trend, with better-rated companies generally outperforming lower-rated ones. Information Technology was a notable exception, where Laggards earned a significantly higher return than companies with better ratings. This contradicts the general perception that most of the positive ESG performance can be attributed to tech companies. Lagging companies in Consumer Staples and Communication Services also outperformed, but these were industries with a very small number of companies in this rating category, which may have distorted the results.
- Only three countries in Western Europe had enough data to be discretely analyzed: France, Germany and the UK. In contrast to the general trend, German companies with lower ESG ratings outperformed those with higher ratings, but again the small number of companies in the Laggard rating category may have distorted the results.
- France and the UK had an impressive number of companies rated as Leaders by MSCI, at 37% and 41%, respectively, as of December 2021.

Exhibit 21: Western Europe Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021



Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	409	655
Average	897	1,152
Laggard	126	122
Total	1,432	1,929

Asia

- Asia companies with better (higher) ESG ratings earned a higher annual average return, when compared to portfolios of worse (lower) rated companies during the 2013–2021 period (see Exhibit 22).
- Asia companies are further behind in their ESG journey when compared to other regions, according to MSCI. Asia companies were generally worse rated by MSCI vis-à-vis other regions. For example, in December 2021, 38% (= 1,591 / 4,197) of Asia companies were rated as ESG Laggards and only 6% (= 266 / 4,197) were considered Leaders. In contrast, North America and Western Europe saw a smaller proportion of Laggards, at 17% and 6%, respectively. It is notable that the number of MSCI ESG-rated companies has increased significantly over the study period (more so than in other regions), with the company count in December 2021 almost double the 2013–2021 average. This may also be partly a function of the increase in publicly traded companies in the Asia region over this period.[115]
- Industry performance in Asia was mixed. While better-rated companies generally outperformed lower-rated ones, that was not the case with Energy, Consumer Staples, Health Care and Utilities. Regarding Energy and Utilities, the very small number of companies in the Leader category may have skewed the results. Information Technology stood out as an outperformer, with Leaders earning more than double the average annual returns realized by Laggards (22.5% versus 10.5% in USD terms).
- There were several markets in Asia with enough data to be discretely analyzed: China, Hong Kong SAR, India, Japan and South Korea.

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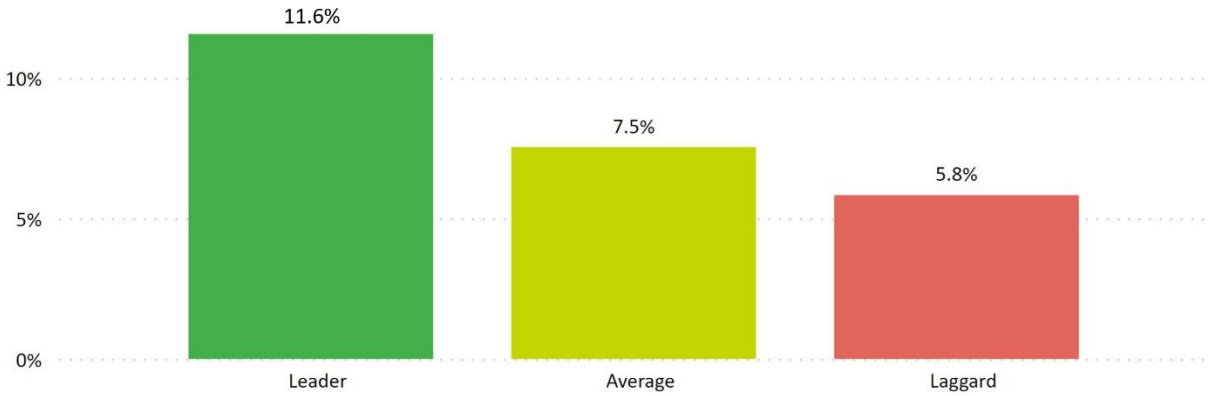
115 For example, see Guptan, Rahul, Kaya Proudian and Jessica Zhou, "Asia-Pacific's IPO market outshines," White & Case, April 27, 2023. Available here: https://www.whitecase.com/insight-our-thinking/global-ipos-asia-pacific-ipo-market-outshines. Also, see Kohli, Akshay, Amit Gandhi, Anand Veeraraghavan, Eugene Khoo, and Nikhil Khaitan, "The 2023 Asia-Pacific Value Creators Report – A Decade of Strong Performance," BCG, April 2023. Available here: https://web-assets.bcg.com/64/d8/8b18f8de4f919a5f8503a7c4044b/bcg-the-2023-asia-pacific-value-creators-report-april-2023.pdf.

- China and South Korea had a disproportionately high number of companies rated in the Laggard category, at respectively 56% and 69% as of December 2021. Nonetheless, Laggard companies still underperformed their better-rated counterparts in both countries.
- Companies with a Leader rating earned higher annual average returns than Laggards in all the other spotlighted markets (Hong Kong SAR, India and Japan).

Exhibit 22: Asia Compound Annual Return by Aggregate ESG Rating
January 2013–December 2021



Rating	Company Count Monthly Average 2013–2021	Company Count December 2021
Leader	181	266
Average	1,283	2,340
Laggard	769	1,591
Total	2,233	4,197

Future Research

In this inaugural version of the Kroll ESG Returns Study, we analyzed the differences in performance of portfolios comprised of companies with different MSCI ESG ratings without controlling for any exogenous factors. Understanding whether having a good or bad ESG rating conveys any information about future company performance will require additional research.

The Relationship Between Company Size, MSCI ESG Ratings and Performance

One potential area of future research is the relationship between company size (as defined by market cap), MSCI ESG ratings, and performance (i.e., returns).[116]

For example, over the January 2013–December 2021 time horizon in the ESG Returns Study, the median (i.e., "typical") monthly market cap of U.S. companies that had an ESG rating of Leader (a category comprised of the two best MSCI ESG ratings, AAA and AA) was over five times the market cap of U.S. companies that had an ESG rating of Laggard (a category comprised of the two worst MSCI ESG ratings, B and CCC).[117]

The study found that Leaders outperformed Laggards in the U.S. by a 20.3% to 13.9% margin, but it is also true that large stocks generally outperformed small stocks over the 2013–2021 period. For example, the Center for Research in Security Prices (CRSP) portfolio 1-2, which represents approximately the top 20% of the U.S. market, outperformed the CRSP portfolio 9-10, which represents approximately the bottom 20% of the market, by a 17.0% to 14.8% margin over the 2013–2021 period.[118] Company size is an example of an exogenous factor that may have contributed to the outperformance of Leaders over Laggards.

Double Sorts

To further explore a potential relationship between company size, ESG ratings and performance, we will create and measure the performance of portfolios based on the double sorting of size and MSCI ESG rating. For example, examination of the performance of portfolios comprised of Leader companies that have been further sorted by size (e.g., Leader companies that are also large, mid-cap, low-cap, or micro-cap companies) might shed light on the relative strength of the size and ESG forces driving returns.

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116 Of the 12 countries examined individually in this study, the U.S. has the largest amount of MSCI ESG data available and is therefore used here for example purposes. The U.S. accounts for 32.2% of all calculation months in this study (Japan is a distant second, at 9.5%).

117 The median monthly market cap of U.S. "Leaders" was USD 7.577 billion, whereas the median monthly market cap of U.S. "Laggards" was USD 1.492 billion.

118 CRSP is an affiliate of the University of Chicago Booth School of Business. CRSP creates decile portfolios for all common stocks listed on the NYSE, NYSE MKT, and NASDAQ National Market (excluding Unit Investment Trusts, Closed-End Funds, REITs, Americus Trusts, foreign stocks and American Depositary Receipts). Individual decile portfolios are created for each exchange group, the largest being in decile 1 and the smallest in decile 10. In addition to each decile portfolio, returns are calculated for the following: CRSP 1-2, CRSP 3-5, CRSP 6-8, CRSP 9-10, CRSP 6-10 and CRSP 1-10. For more information, visit: https://www.crsp.org/products/documentation/crsp-cap-based-portfolios-0.

Regression Analysis of ESG Rating and Subsequent Return

A big question for investors is whether current ESG ratings can be used to "predict" subsequent returns.

One way of doing this might be to do a multiple regression that uses ratings or ratings categories (e.g., AAA through CCC, or Leader, Average, Laggard) as the independent variables (i.e., the variables doing the predicting), and all possible subsequent 3-, 6-, 9-, and 12-month returns of each of the companies in the study as the dependent variable (i.e., the effect being predicted).

Considering that over 13,000 companies were included in the analysis in this study over a span of 108 months, the number of matched sets of independent variables and dependent variables is easily in the hundreds of thousands. The results of the multiple regression could shed light on whether there is a significant relationship between ESG ratings and subsequent returns.

However, whether investors can make money by using ESG ratings to make investing decisions is not the end of the story, because everything in investing (and analysis in general) is a "compared to what?". The real question, therefore, is whether investors can make more money by using ESG ratings to make investing decisions compared to what they would have made employing alternative methodologies for investing.

Kroll's future analysis will attempt to answer both questions.

Cost of Capital

If a variable does carry information about prospective returns, it can potentially be used in the calculation of cost of capital estimates. Cost of capital is used to discount the expected future economic benefits (or income) associated with the ownership of an investment to their present value. In essence, cost of capital is one of the inputs needed to estimate the value of an investment.

In this inaugural version of the Kroll ESG Returns Study, we reported the initial comparative performance results of portfolios comprised of companies with various combinations of attributes (e.g., region, country, MSCI ESG rating, industry). The returns associated with these portfolios can potentially be used to calculate "betas." Betas measure the systemic risk of a stock (specifically, the tendency of changes in a stock's price to correlate with changes in a specific benchmark market index). Realized performance by ESG rating could then be analyzed after adjusting for the betas of each of the portfolios to arrive at beta-adjusted realized return.

Appendix 1: Study Methodology

Purpose of the Kroll ESG and Global Investment Returns Study

The Kroll ESG and Global Investment Returns Study (the "ESG Returns Study") examines the relationship between historical returns of publicly traded companies and their ESG ratings globally. The purpose of this study is to analyze the differences in performance (if any) of portfolios (i.e., indexes) comprised of companies with different MSCI ESG ratings.

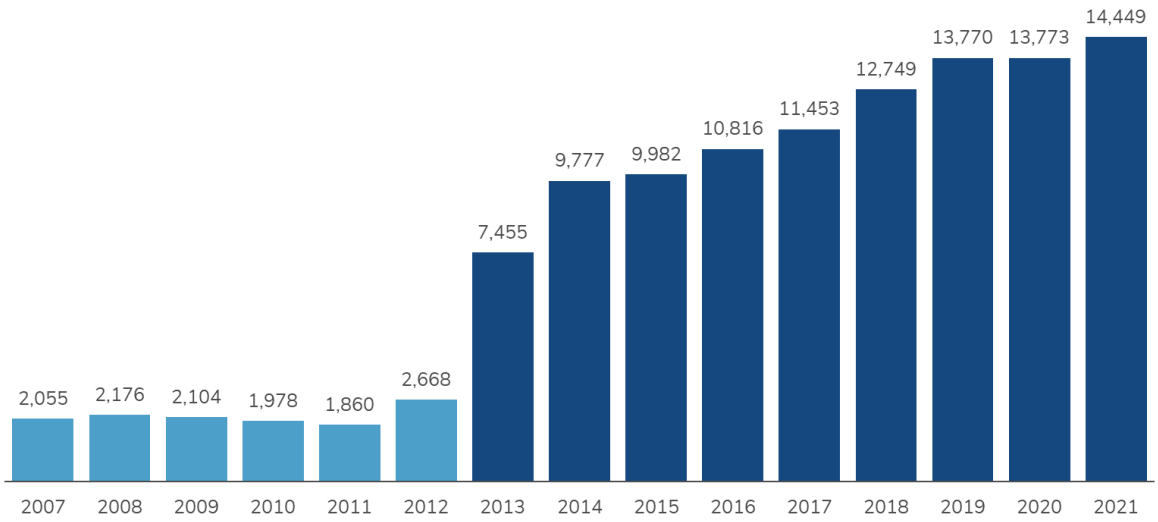
For example, an index can be constructed from companies from a specific country (e.g., the UK) in a specific industry (e.g., GICS 20 – Industrials) with a specific MSCI ESG rating (e.g., AAA, the best rating). The performance of this index can then be compared to the performance of an index constructed of UK companies in GICS 20 – Industrials, but with the worst MSCI ESG rating (CCC).

We examined a universe of over 13,000 companies across a variety of geographies and industries around the globe. Our goal is to ascertain if an investment strategy focused on companies with a better rating would result in a superior return performance.

Time Horizon

The time horizon over which the ESG Returns Study analyzes indexes comprised of companies with different composite MSCI ESG ratings is January 2013–December 2021 (i.e., 108 months or nine years).

Exhibit A1-1: Monthly Average Number of Issuers Included in the MSCI ESG Ratings Time Series



Source: MSCI ESG Research LLC, "MSCI ESG Ratings Time Series 2007-Present," (April 2023).

MSCI has ESG ratings data from January 2007 to the present (monthly), but Kroll selected January 2013 as the start date of its ESG study instead of an earlier date for two main reasons: (i) there was a significant change in MSCI's ESG rating methodology in January 2012[119], and (ii) MSCI's company coverage increased significantly starting in 2013 (see Exhibit A1-1).

Sources of Data

MSCI

The following data fields in the MSCI ESG ratings database were used in our analysis:[120,121,122]

1. **ISSUER_NAME:** The name of a company.
2. **ISSUER_ISIN:** International Securities Identification Number (ISIN). An ISIN is a unique number associated with a security (e.g., a "stock" or a "bond," etc.)
3. **ISSUERID:** Issuer Identifier. The ISSUERID is a unique identifier at the company level. An ISSUERID may have several ISSUER_ISINs associated with it.
4. **ISSUER_CNTRY_DOMICILE:** The country/market with which a company is domiciled per the MSCI Country Classification Standard.[123]
5. **IVA_INDUSTRY:** The industry in which a company operates. Industries in the MSCI ESG framework are defined by the GICS®.[124]
6. **IVA_RATING_DATE:** The date of the most recently completed ESG ratings review and assessment for that issuer by MSCI.
7. **AS_OF_DATE:** The date that new issuer data was collected and published.
8. **IVA_COMPANY_RATING:** The overall ESG rating for a company expressed as rating between best (AAA) and worst (CCC).[125]

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119 Source: MSCI ESG Research LLC, "MSCI ESG Ratings Time Series 2007–Present," (November 2020), page 8.

120 To learn more about MSCI ESG ratings, visit https://www.msci.com/zh/esg-ratings.

121 MSCI provided its ESG data to Kroll in 10 individual Excel spreadsheets: "ESG Ratings Timeseries Expanded 2007 to 2012.xlsx," plus nine additional spreadsheets for each year from 2013 through 2021 (referred to as "the MSCI ESG database" in this study).

122 A total of 240 unique data fields were in the spreadsheets provided to Kroll by MSCI. Some datapoints are available across all years, whereas other data fields are not. The 10 datapoints used in the ESG Returns Study were available across all years.

123 The MSCI Country Classification Standard covers over 35,000 securities across the MSCI Developed, Emerging and Frontier Markets and is updated quarterly. See "MSCI Global Investable Market Indexes Methodology," May 2021, available at: https://www.msci.com/documents/1296102/1330218/MSCI-Country-Classification-Standard-cfs-en.pdf and https://www.msci.com/eqb/methodology/meth_docs/MSCI_GIMIMethodology_May2021.pdf.

124 GICS® is the global industry classification standard jointly developed by MSCI and S&P Global.

125 A complete list of all overall MSCI ESG ratings is as follows, from best to worst: AAA, AA, A, BBB, BB, B and CCC.

Refinitiv:[126,127]

- Monthly market capitalization ("market cap") in U.S. dollars by individual company.
- Monthly total returns in USD by individual company.[128]

Company Set Selection

Screen 1: Market Caps and Total Returns

All securities (at the ISIN level) that did not have at least one month of market cap data from December 2012–November 2021[129] and at least one month of total returns from January 2013–December 2021 were eliminated.

Screen 2: Company Security Type

For purposes of our analysis, we were only focused on the returns realized by common stocks. We used Refinitiv to help us identify the types of securities issued by each company (or issuer), to eliminate those that did not resemble a common stock instrument. Based on our analysis, the securities that were included or excluded in the analysis—identified by their ISIN and listed alphabetically by their Thomson Reuters Classification Scheme (TRCS) code—are listed in Exhibit A1-2.

Exhibit A1-2: Types of Securities Included and Excluded in the ESG Returns Study[130]

Included	
TRCS Code	**Description of TRCS Code**
BDR	Brazilian Depository Receipts
CEDEAR	Argentinian Depository Receipts
CHESS	CHESS Depository Interests
DEPOSITSHS	Depository Shares
FULLPAID	Fully Paid Ordinary Shares
ORD	Ordinary Shares
STAPLED	Stapled Securities
ADR	American Depository Receipts
DEPOSITSHS	Depository Shares

126 Refinitiv, a London Stock Exchange Group (LSEG) business, is one of the world's largest providers of financial markets data and infrastructure. To learn more about Refinitiv, visit: https://www.refinitiv.com/en.

127 The ESG Returns Study uses market cap and total return data expressed in USD, regardless of companies' country trading currency to: (i) simplify the analysis, and (ii) enable the comparison of results across regions and countries.

128 "Total Return" consists of three components: (i) price (i.e., capital appreciation) returns, (ii) income returns (e.g., dividends), and (iii) reinvestment (e.g., of dividends) returns.

129 The ESG Returns Study creates indexes over the time horizon January 2013–December 2021. Market cap data was lagged one month in the formation of indexes to avoid double counting returns; therefore, monthly market caps are needed over the time horizon December 2012–November 2021. See the section entitled "Index Construction Methodology" for more information.

130 Thomson Reuters Classification Scheme (TRCS) is a legacy terminology that Refinitiv still uses. Thomson Reuters and private equity funds affiliated with Blackstone sold Refinitiv to the LSEG plc in January 2021. To learn more about the transaction, visit: https://www.prnewswire.com/news-releases/thomson-reuters-announces-closing-of-sale-of-refinitiv-to-london-stock-exchange-group-301217919.html. The Refinitiv TRCS code for each ISIN was retrieved from the Refinitiv database along with the monthly market caps and monthly total returns. A TRCS code is the identification used for each security as defined by the Thomson Reuters classification system.

Excluded	
TRCS Code	Description of TRCS Code
NA	NA
CAPSEC	Capital Securities (New York Stock Exchange (NYSE))
CEF	Closed-Ended Fund
CPR	Convertible Preference Shares
CRTGUA	Guarantee Certificates
CUM	Cumulative Preference Shares
DEBENT	Debenture
DEFER	Deferred Shares
DRC	Depository Receipt
DVR	Differential Voting Rights Shares
ELN	Equity-linked Note
ENHTRUST	Enhanced Trust Preferred Securities (NYSE)
GENUS	Genussscheine
INVCERT	Investment Certificates
ORDSUBR	Ordinary Subscription Receipts
PART	Participation
PARTPRF	Participating Preference Shares
PREFERRED	Preferred Shares
PRF	Preference Shares
REDEEM	Redeemable Preference Shares
RTS	Rights
SAVE	Savings Shares
UNT	Unit

Source of security descriptions: Refinitiv. Analysis by Kroll.

Screen 3: Multiple Securities Issues

We identified over 200 cases where multiple ISIN numbers (MSCI ESG datapoint **ISSUER_ISIN**) were associated with the same issuer (i.e., company) identifier (MSCI ESG datapoint **ISSUERID**).[131] Each of these cases was reviewed and resolved individually using information and data from the S&P Capital IQ platform.[132]

[131] These cases were rare in the context of the overall company universe (the approximately 200 cases represented less than 1.5% of the 13,000+ total companies remaining after Screen 1 and Screen 2).

[132] The S&P Capital IQ platform is a product offered by S&P Global Market Intelligence, which is a division of S&P Global.

These cases primarily fell into three categories (from largest number of cases to smallest number of cases):[133]

1) ISINs that had been misidentified during the process of applying Screen 2. For example, securities that passed Screen 2 only because they had been mislabeled by Refinitiv as a common equity, when they were a type of bond or preferred equity. These misidentified securities were deleted.

2) Companies that had issued multiple common equity securities, which needed to be aggregated for purposes of computing market cap. This can happen with dual-class-share structures, for example. In these cases, the monthly market caps of the individual securities were summed, and a weighted average (by market cap) of the total returns of the individual securities was calculated.[134]

3) ADRs and common equities representing the same entity trading concurrently (in different exchanges) or sequentially.[135] To avoid "double counting" of the same company, in these cases a decision was made to determine which security to keep in the analysis (typically, the security with the most history and/or quality of market caps and total returns was kept).

Screen 4: "Staleness" of Ratings

Although MSCI typically does an annual in-depth review of companies, there were a small number of instances in which companies were not reviewed at least annually. To ensure that the ratings used in the ESG Returns Study were not "stale", instances in which the difference between the most recent rating date and the publication date associated with the most recent rating date was greater than 24 months were eliminated.[136]

Applying Screens 1–4 above resulted in a company set of 13,256 companies. Note that not all companies are present in the same month. In other words, there is no single month where all 13,256 companies are included. Even though new companies are added to the dataset over time by MSCI, there will be others that will disappear, either because MSCI ceases to assign an ESG rating or due to a variety of other reasons (e.g., company was acquired, filed for bankruptcy, or taken private).

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133 There was a small number of cases that did not fall into these three categories. For example, there were several cases of duplicate entries. In such instances, one of the occurrences was simply deleted.

134 Cross-checks were done to ensure that the aggregation or sum of the market caps of these securities matched or approximated the monthly total market caps for the overall company reported in S&P *Capital IQ*.

135 Officially, an ADR is a negotiable certificate that evidences an ownership interest in American Depositary Shares (ADSs) which, in turn, represent an interest in the shares of a non-U.S. company that have been deposited with a U.S. bank. It is similar to a stock certificate representing shares of stock. The terms ADR and ADS are often used interchangeably by market participants. As originally created, ADRs are traded in U.S. dollars and cleared through U.S. settlement systems, allowing ADR holders to avoid having to transact in a foreign currency.
Source : https ://www.sec.gov/investor/alerts/adr-bulletin.pdf. Having said that, there are other non-U.S. markets that now may use the term ADR conceptually to designate foreign securities that are traded in the home market in the home (local) currency.

136 This was accomplished by calculating the following: [(MSCI ESG datapoint AS_OF_DATE) – (MSCI ESG datapoint IVA_RATING_DATE)]. AS_OF_DATE and IVA_RATING_DATE represent the publication date and most recent rating date, respectively.

"Calculation Months" Indicate How Much Data is Available

To ascertain whether companies with better MSCI ESG ratings outperform companies with worse MSCI ESG ratings, we needed to construct portfolios that were comprised of companies within each of the ratings categories. To accomplish this, company sets with specific characteristics were identified (monthly), market-cap-weighted monthly indexes were constructed over the January 2013–December 2021 time horizon, and the relative performance of indexes comprised of companies with different characteristics (e.g., geographic area, country/market, industry, MSCI ESG rating) was measured.

The Number of Calculation Months Available Varies

The amount of data available to construct the indexes analyzed in the ESG Returns Study can vary significantly across geographic regions, countries/markets, industries, and ratings. The more granular the analysis, the fewer the number of observations.

For example, North America (defined herein as the U.S. and Canada combined) is one of the geographic regions analyzed. The weight of the contributions of the two countries to the construction of the North American index are not equal: the amount of data available to build the North America index contributed by U.S. companies is over eight times greater than the amount of data contributed by Canadian companies. This is partly a function of the number of publicly traded companies in the U.S. versus Canadian stock exchanges.

This variation in data availability extends to industries and ESG ratings as well. For example, an index comprised of Japanese companies in GICS 30 – Consumer Staples with an MSCI ESG rating of AAA could not be constructed because of lack of data. An index comprised of Japanese companies in GICS 10 – Energy with an MSCI ESG rating of AAA could theoretically be constructed (as some data was available), but the number of observations would not be statistically significant and therefore not presented in the study. The number of Japanese companies and data in GICS 45 – Technology was sufficiently available to construct an index comprised of AAA-rated companies.[137] To provide a way of visualizing where data was plentiful and where data was less so, the concept of calculation month is introduced:[138]

Calculation Month

Any combination of a single company's characteristics (i.e., geographic area / country or market / industry / ESG rating) in month "0" that also has: (i) a market cap in month "0", and (ii) a total return in month "+1" (i.e., the following month).

[137] To learn more about the methodology used to construct indexes in this report, see the section entitled "Index Construction Methodology."

[138] The calculation months reported in the ESG Returns Study are based on the set of companies in the MSCI ESG database that made it through the screens described in "Company Set Selection," and are not intended to be descriptions of the makeup of the entire MSCI ESG database.

In essence, we use the terminology of "number of calculation months" to represent the number of observations in each of the indexes we constructed. The number of calculation months reported in this study is generally expressed as the sum of calculation months available across the 108-month time horizon analyzed in the ESG Returns Study (January 2013–December 2021). This is appropriate for the high-level comparisons made in this section.

In the Study Results section of this report, when analyzing the results from specific indexes, additional statistics about the individual indexes are shown (i.e., for any given index, we show the monthly average number of companies over the January 2013–December 2021 time horizon and the number of companies as of December 2021). These additional statistics are there to help the reader gauge the relative quality of the indexes being compared, and any conclusions that can be drawn from these comparisons from a statistical standpoint.

For example, a comparison of a well-populated index comprised of AAA-rated companies (the best rating) to a well-populated index comprised of CCC-rated companies (the worst rating) might provide some insight into whether companies with better MSCI ESG ratings perform better than companies with worse MSCI ESG ratings. However, if one of the indexes (or both) has a small average number of companies (and a small number of monthly calculation months available to construct it), the confidence in any conclusion about the relative performance of the indexes is necessarily diminished.

Calculation months are arguably a better way of gauging the amount of data that went into building an index than merely counting and averaging the number of companies in it. For example, an index created using data from 10 companies that each had monthly information available for each of the 108 months from January 2013 to December 2021 would have a total of 1,080 calculation months (108 months x 10 companies in each month). Alternatively, an index created using data from 10 companies, some of which came into existence (or disappeared) halfway through the January 2013–December 2021 time horizon, had "spotty" monthly data over the entire time horizon, or were only assigned a rating in the latter part of the time horizon would have fewer calculation months, and would likely not have the same quality as the index that had more data to build it.

The Number of Calculation Months Available Has Increased Over Time

The amount of MSCI ESG data available has significantly increased over time (see previous Exhibit A1-1). Exhibit A1-3 provides statistics on how the number of calculation months available for each of the geographic regions examined in this study changed over between January 2013 and December 2021.

The amount of data available to construct the World company set ("World") portfolio indexes, as measured by the number of calculation months, was 4,759 in January 2013 (the earliest month included in this study). This more than doubled to 10,670 calculation months (an increase of 124%) by December 2021 (the latest month in this study).

Exhibit A1-3: Number of Calculation Months – Monthly Statistics (January 2013–December 2021)

	A	B	(B ÷ A) - 1	January 2013–December 2021			
Regions	**Jan 2013**	**Dec 2021**	**Change (%)**	**Average**	**Median**	**Max**	**Min**
World	4,759	10,670	124%	7,512	7,151	10,698	4,759
North America	2,305	3,033	32%	2,723	2,742	3,062	2,305
Asia	1,111	4,197	278%	2,233	1,794	4,202	1,111
Western Europe	688	1,929	180%	1,432	1,572	1,934	687
Countries	**Jan 2013**	**Dec 2021**	**Change (%)**	**Average**	**Median**	**Max**	**Min**
Australia	204	355	74%	278	274	358	200
Brazil	70	183	161%	108	85	184	70
Canada	118	352	198%	301	310	353	118
China	111	1,043	840%	420	192	1,043	111
France	88	178	102%	150	173	178	87
Germany	75	228	204%	168	189	229	75
Hong Kong SAR	101	304	201%	193	146	309	101
India	103	306	197%	201	176	307	103
Japan	424	1,331	214%	711	681	1,332	424
South Korea	110	520	373%	209	149	522	110
UK	221	487	120%	380	416	489	218
U.S.	2,187	2,681	23%	2,422	2,427	2,718	2,187

Source of underlying data: MSCI ESG database. All calculations by Kroll.

The World, the three geographic regions, and the 12 countries/markets analyzed all showed significant increases in the number of calculation months from January 2013 to December 2021. The largest increase was in China (+840%), and the smallest increase was in the U.S. (+23%).[139] This is primarily due to: 1) more companies outside the U.S. going public over this period (on a relative basis); and 2) MSCI's increased coverage, with more ESG ratings being assigned to non-U.S. companies on a relative basis.

Exhibit A1-3 also provides the average, median, maximum, and minimum number of calculation months available for each of the geographic regions and countries/markets covered in this study. For example, the maximum number of calculation months available in any given month for the China company set over the January 2013–December 2021 time horizon was 1,043, and the minimum was 111.

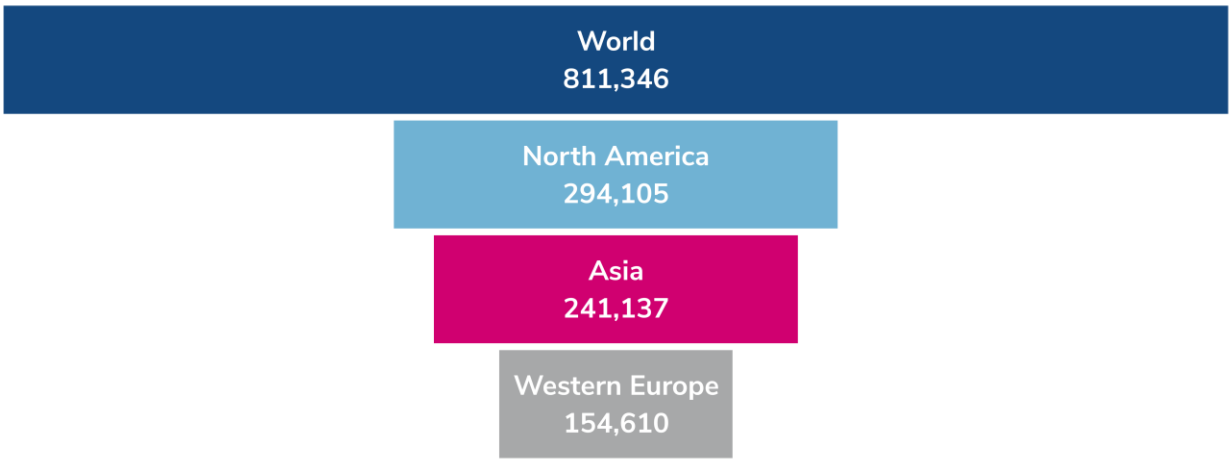
[139] In January 2013, the U.S. accounted for 46.0% of all calculation months as a percentage of the calculation months associated with the World company set. By December 2021, the U.S. accounted for only 25.1% of all calculation months.

Geographic Regions Analyzed

The ESG Returns Study analyzes the relative performance of indexes comprised of companies with different overall MSCI ESG ratings for: (i) the World, (ii) three geographic regions (North America, Asia and Western Europe), and (iii) 12 countries/markets (Australia, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Japan, South Korea, the UK and the U.S.).

In Exhibit A1-4 the total number of calculation months available to construct the study's World, North America, Western Europe and Asia indexes is shown.[140]

Exhibit A1-4: Total Calculation Months for the World, North America, Western Europe and Asia
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

World

The World includes the 13,256 companies that made it through the screening process. There were 118 countries associated with these companies. The full list of these countries/markets is presented in Appendix 2.

The number of calculation months available for each of the 118 countries varies significantly.[141] Exhibit A1-5 illustrates the 16 countries that contributed the most to construct the World index. For example, the U.S. contributed 261,572 calculation months to the construction of the World index, which represented 32.2% (261,572 ÷ 811,346) of total calculation months across all countries, while Germany had only 18,146 calculation months (2.2% of the total).

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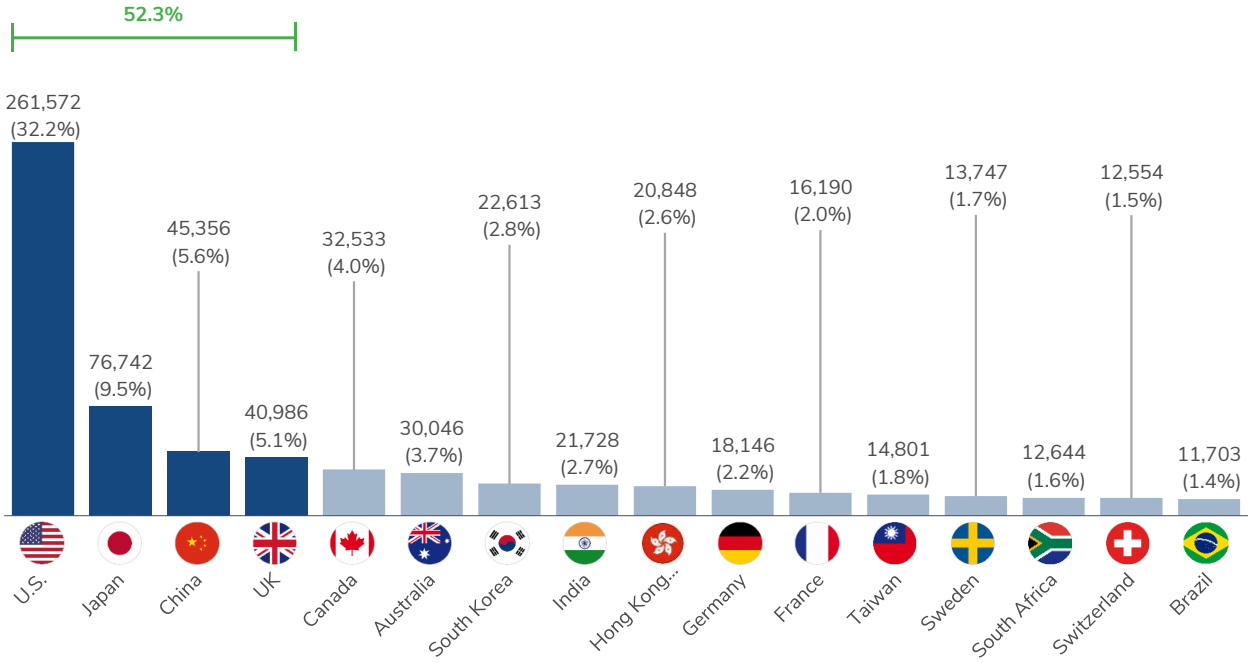
[140] Similar analysis of the 12 individual countries/markets is also presented in the section "12 Individual Countries Included in Analysis."

[141] For more information about calculation months, see the previous section entitled "The Concept of Calculation Months."

Exhibit A1-5: Number of Calculation Months Available for the Top 16 Countries/Markets Included in the World Index in the ESG Returns Study

(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

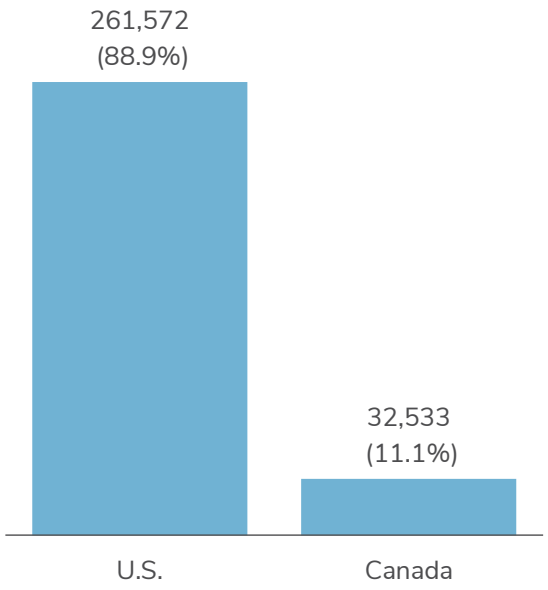
A takeaway from Exhibit A1-5 is that the MSCI ESG data available to construct the indexes presented here was concentrated in just a few countries. For example, 52.3% of all calculation months were associated with just four of the 118 countries included in the World index (the U.S., Japan, China, and the UK).

North America

The "North America" index includes the U.S. and Canada, which have a combined total of 294,105 calculation months (see Exhibit A1-6).

The U.S. contributed 261,572 calculation months to the construction of the index, which represents 88.9% of total calculation months across both countries.

Exhibit A1-6: Number of Calculation Months Available for Construction of the North American Index in the ESG Returns Study
(January 2013–December 2021)



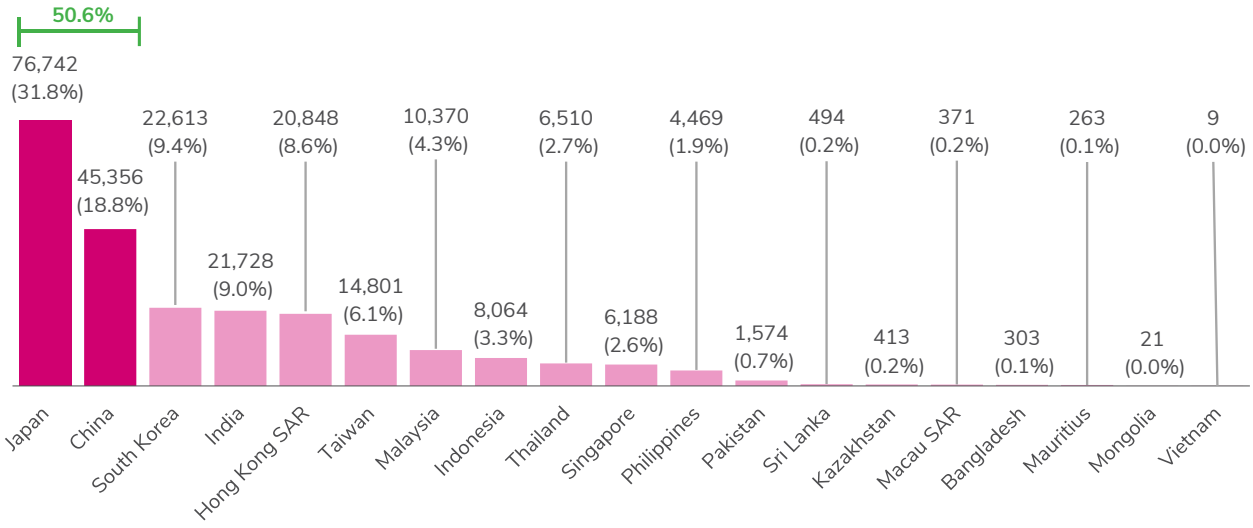
Source of underlying data: MSCI ESG database. All calculations by Kroll.

Asia

The "Asia" index includes 19 countries/markets, which have a combined total of 241,137 calculation months (see Exhibit A1-7). Japan contributed 76,742 calculation months to the construction of the overall Asia index, which represented 31.8% of total calculation months across all countries.

Two of the 19 countries/markets accounted for 50.6% of the overall calculation months for the Asia index.

Exhibit A1-7: Number of Calculation Months Available for Construction of the Asia Index in the ESG Returns Study
(January 2013–December 2021)



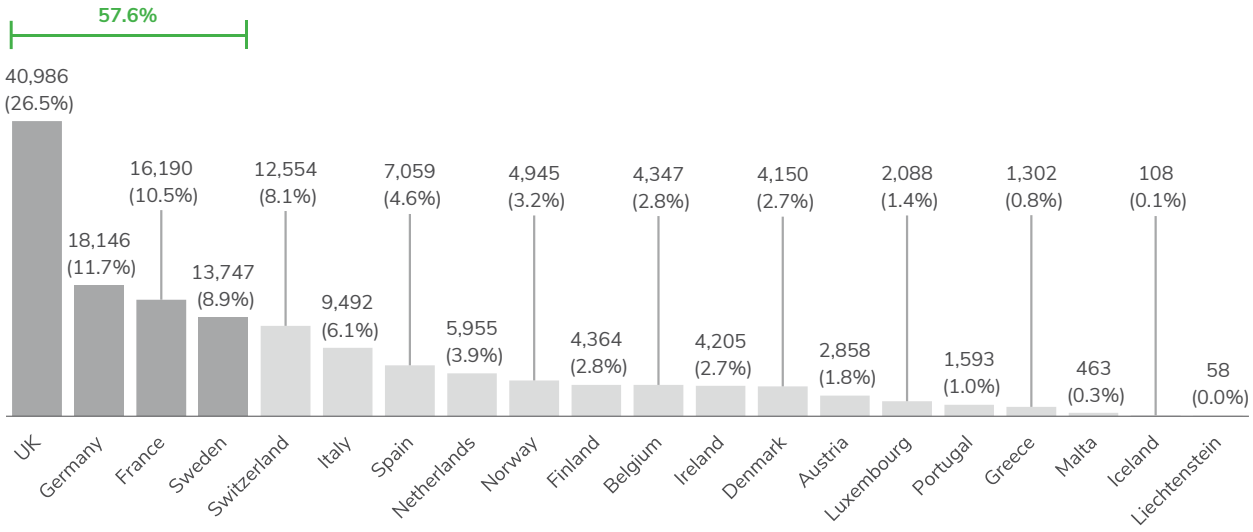
Source of underlying data: MSCI ESG database. All calculations by Kroll.

Western Europe

"Western Europe" includes 20 countries, which have a combined total of 154,610 calculation months available for the construction of the Western Europe index (see Exhibit A1-8). The UK contributed 40,986 calculation months to the construction of the overall Western Europe index, which represented 26.5% of total calculation months across all countries.

Four of the 20 Western Europe countries (the UK, Germany, France and Sweden) accounted for 57.6% of the calculation months of the Western Europe region.

Exhibit A1-8: Number of Calculation Months Available for Construction of the Western Europe Index in the ESG Returns Study
(January 2013–December 2021)

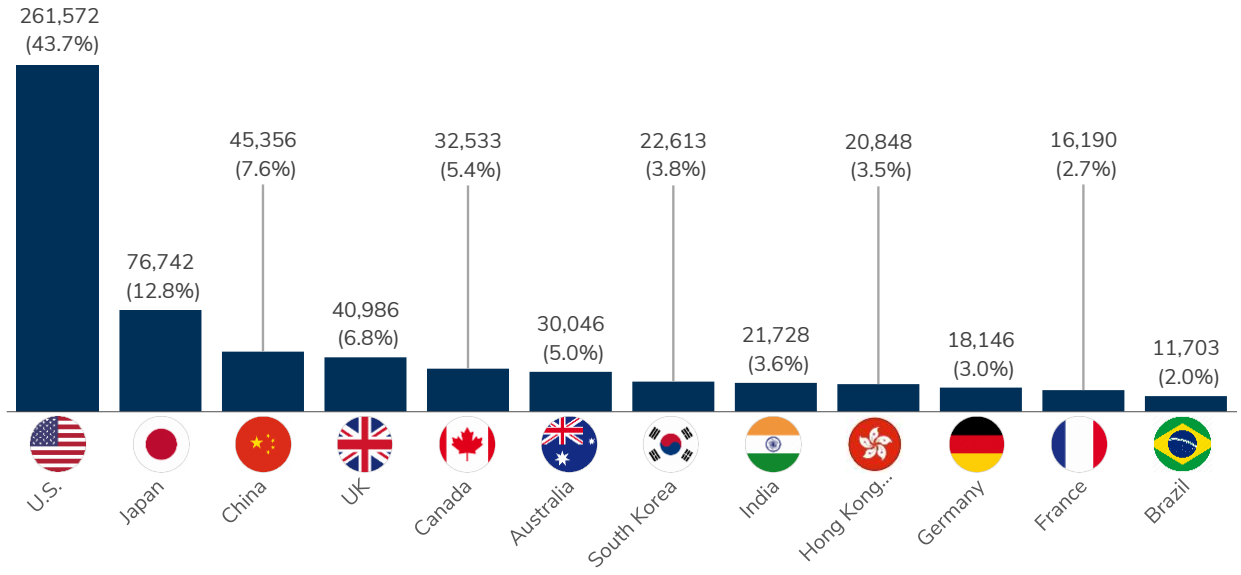


Source of underlying data: MSCI ESG database. All calculations by Kroll.

12 Individual Countries/Markets

12 countries/markets are analyzed individually in the ESG Returns Study, with a combined total of 598,463 calculation months available for the construction of their respective individual indexes (see Exhibit A1-9).

Exhibit A1-9: Number of Calculation Months Available for Index Construction of 12 Individual Countries/Markets in the ESG Returns Study
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

Industries Analyzed

There are 11 industry sectors in the GICS®.[142] MSCI ESG industry assignments are based on GICS® "subindustries," where applicable.[143] Subindustries are at the eight-digit GICS® level, which is the narrowest (i.e., most specific) industry definition in the GICS® system. Kroll converted all MSCI ESG industry assignments to GICS® "sectors," which are at the two-digit level (i.e., least specific) industry definition in the GICS® system:[144,]

1) **GICS 10 – Energy:** The Energy sector comprises companies engaged in exploration a production, refining & marketing, and storage & transportation of oil & gas and coal & consumable fuels. It also includes companies that offer oil & gas equipment and services.

2) **GICS 15 – Materials:** The Materials sector includes companies that manufacture chemicals, construction materials, glass, paper, forest products and related packaging products, and metals, minerals and mining companies, including producers of steel.

3) **GICS 20 – Industrials:** The Industrials sector includes manufacturers and distributors of capital goods such as aerospace & defense, building products, electrical equipment and machinery, and companies that offer construction & engineering services. It also includes providers of commercial & professional services including printing, environmental and facilities services, office services & supplies, security & alarm services, human resource & employment services, and research & consulting services. It also includes companies that provide transportation services.

4) **GICS 25 – Consumer Discretionary:** The Consumer Discretionary sector encompasses those businesses that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automotive, household durable goods, leisure equipment and textiles & apparel. The services segment includes hotels, restaurants and other leisure facilities, media production and services, and consumer retailing and services.

5) **GICS 30 – Consumer Staples:** The Consumer Staples sector comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of nondurable household goods and personal products. It also includes food & drug retailing companies as well as hypermarkets and consumer supercenters.

6) **GICS 35 – Health Care:** The Health Care sector includes health care providers & services, companies that manufacture and distribute health care equipment & supplies, and health care technology companies. It also includes companies involved in the research, development, production and marketing of pharmaceuticals and biotechnology products.

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142 GICS® is the global industry classification standard jointly developed by MSCI and S&P. For more information, visit: https://www.msci.com/our-solutions/indexes/gics.

143 Industries in the MSCI ESG framework are defined by the 11 GICS® sectors.

144 Source of MSCI ESG industry assignments' mapping to GICS® subindustries: MSCI ESG Research LLC, "ESG Ratings Methodology" and "Appendix 4: ESG Rating Industries," (December 2021), page 61.

7) **GICS 40 – Financials:** The Financials sector contains companies involved in banking, thrifts & mortgage finance, specialized finance, consumer finance, asset management and custody banks, investment banking and brokerage and insurance. It also includes Financial Exchanges & Data and Mortgage Real Estate Investment Trusts (REITs).

8) **GICS 45 – Information Technology:** The Information Technology sector comprises companies that offer software and information technology services, manufacturers, and distributors of technology hardware & equipment such as communications equipment, cellular phones, computers & peripherals, electronic equipment and related instruments, and semiconductors.

9) **GICS 50 – Communication Services:** The Communication Services sector includes companies that facilitate communication and offer related content and information through various mediums. It includes telecom and media & entertainment companies including producers of interactive gaming products and companies engaged in content and information creation or distribution through proprietary platforms.

10) **GICS 55 – Utilities:** The Utilities sector comprises utility companies such as electric, gas and water utilities. It also includes independent power producers & energy traders and companies that engage in generation and distribution of electricity using renewable sources.

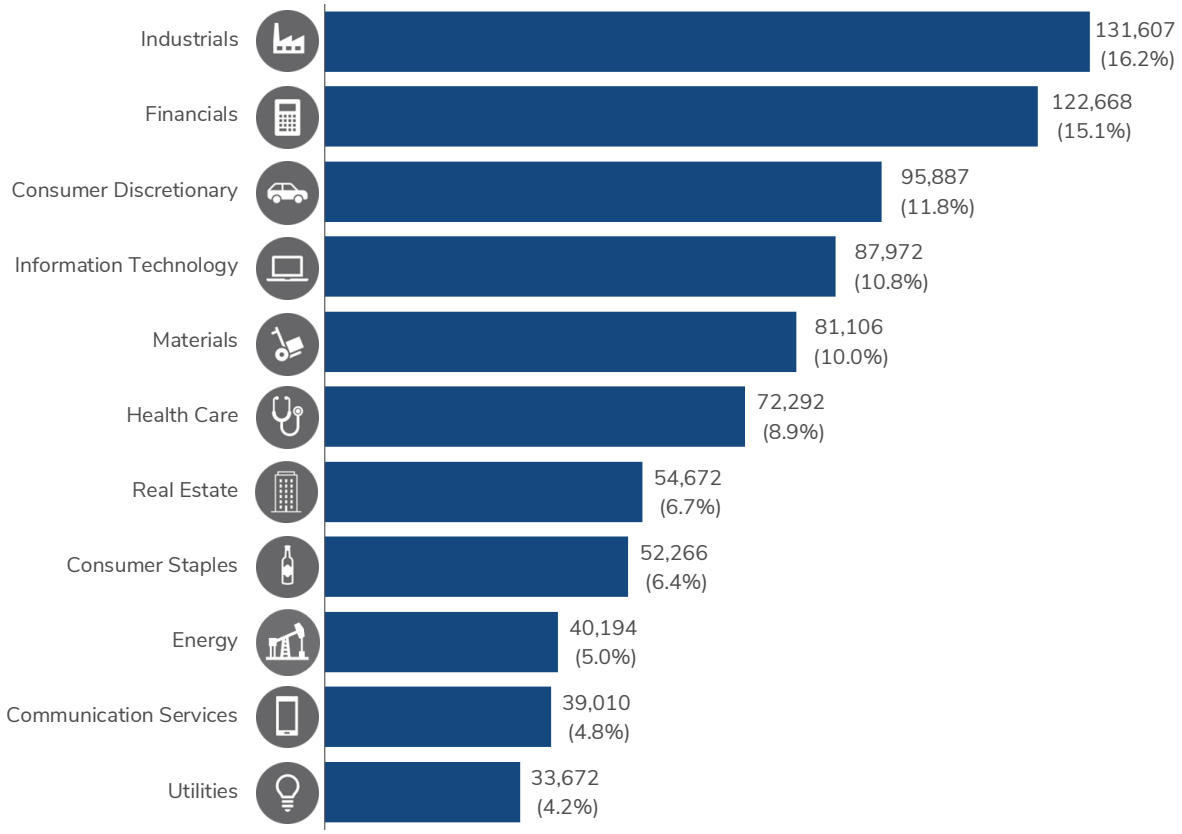
11) **GICS 60 – Real Estate:** The Real Estate sector contains companies engaged in real estate development and operation. It also includes companies offering real estate-related services and Equity REITs.

Industry Composition of the World Company Set

Eleven industries are analyzed in the ESG Returns Study. The World had a combined total of 811,346 calculation months available for the construction of the ESG Returns Study's indexes. Exhibit A1-10 shows the distribution of calculation months among these 11 industries.

GICS 20 – Industrials had the most calculation months available (131,607), and GICS 55 – Utilities had the least number of calculation months available (33,672).

Exhibit A1-10: Number of Calculation Months Available for the World Indexes Constructed in the ESG Returns Study by Industry Sector
(January 2013–December 2021)



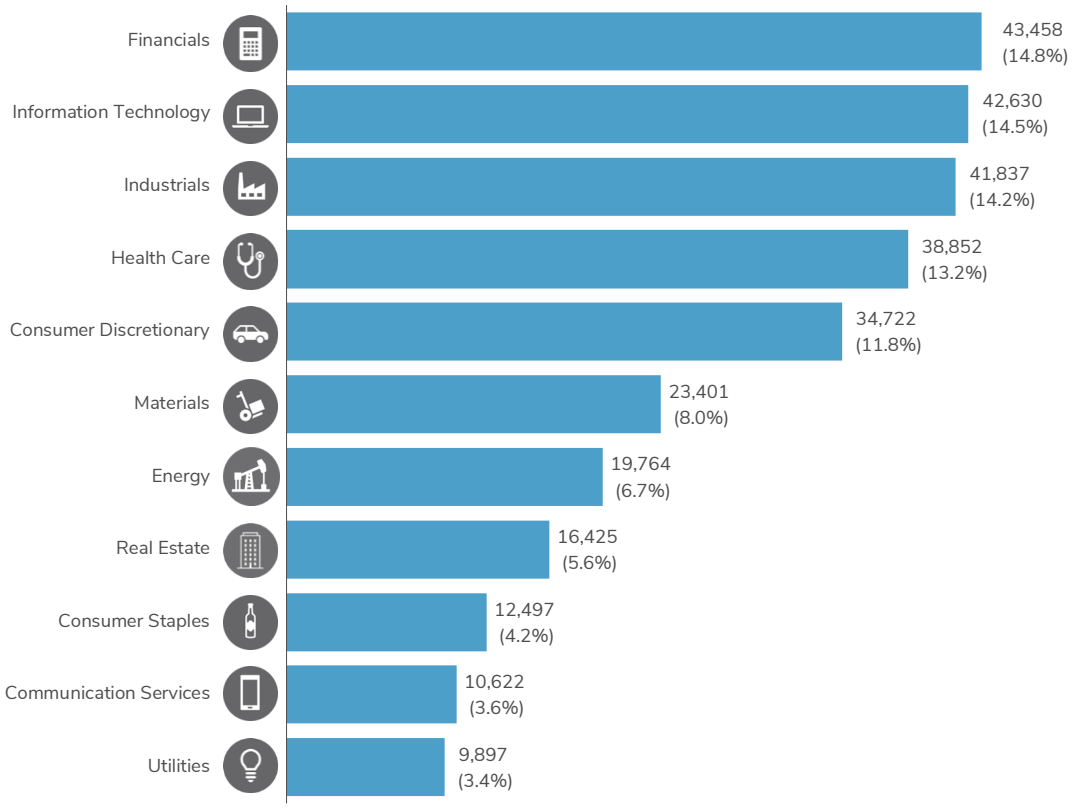
Source of underlying data: MSCI ESG database. All calculations by Kroll.

Industry Composition of the North America Company Set

North America had a combined total of 294,105 calculation months available for the construction of the ESG Returns Study's indexes. Exhibit A1-11 shows the distribution of calculation months among the 11 industries in North America.

GICS 40 – Financials had the most calculation months available (43,458), and GICS 55 – Utilities had the least number of calculation months available (9,897).

Exhibit A1-11: Number of Calculation Months Available for the North America Indexes Constructed in the ESG Returns Study by Industry Sector
(January 2013–December 2021)



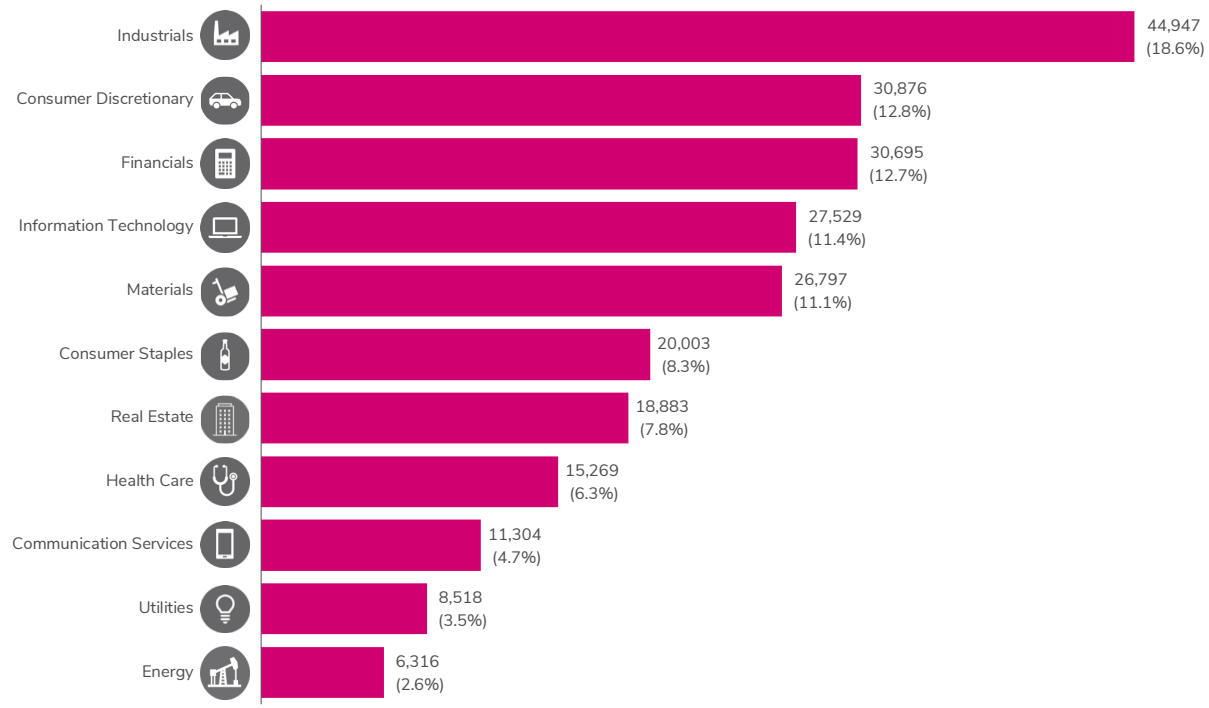
Source of underlying data: MSCI ESG database. All calculations by Kroll.

Industry Composition of the Asia Company Set

Asia had a combined total of 241,137 calculation months available for the construction of the ESG Returns Study's Asia indexes. Exhibit A1-12 shows the distribution of calculation months among the 11 industries in Asia.

GICS 20 – Industrials had the most calculation months available (44,947), and GICS 10 – Energy had the least number of calculation months available (6,316).

Exhibit A1-12: Number of Calculation Months Available for the Asia Indexes Constructed in the ESG Returns Study by Industry Sector
(January 2013–December 2021)



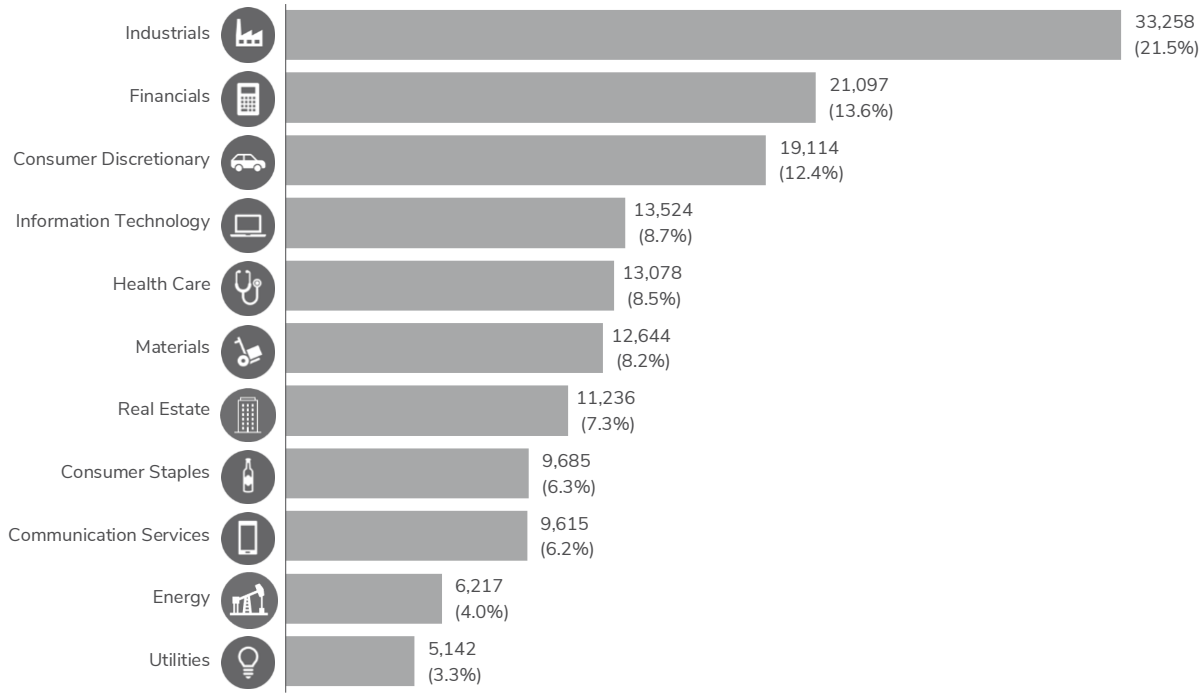
Source of underlying data: MSCI ESG database. All calculations by Kroll.

Industry Composition of the Western Europe Company Set

Western Europe had a combined total of 154,610 calculation months available for the construction of the ESG Returns Study's indexes (see Exhibit A1-13). Exhibit A1-13 shows the distribution of calculation months among the 11 industries in Western Europe.

GICS 20 – Industrials had the most calculation months available (33,258), and GICS 55 – Utilities had the least number of calculation months available (5,142).

Exhibit A1-13: Number of Calculation Months Available for the Western Europe Indexes Constructed in the ESG Returns Study by Industry Sector
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

Industries by Individual Country/Market

The 12 individual countries/markets discretely analyzed in the ESG Returns Study had a combined total of 598,463 calculation months available for the construction of each of the individual indexes (see Exhibit A1-14).

A breakout of the industries by each of the 12 countries/markets analyzed individually is provided in Exhibit A1-14. For each country/market, the industry with the largest number of calculation months is highlighted in green, and the industry with the smallest number of calculation months is highlighted in red. For example, GICS 15 – Materials was the industry with the largest number of calculation months available in Australia (7,390), which represented 24.6% of calculation months across all industries in Australia. Alternatively, GICS 55 – Utilities was the industry with the smallest number of calculation months available in Australia (907, or 3.0%).

Exhibit A1-14: Number of Calculation Months Available for the Western Europe Indexes Constructed in the ESG Returns Study by Industry Sector (January 2013–December 2021)

Industry	Australia Calc. Months	%	Brazil Calc. Months	%	Canada Calc. Months	%	China Calc. Months	%
Energy	1,662	5.5%	488	4.2%	6,839	21.0%	921	2.0%
Materials	7,390	24.6%	1,265	10.8%	8,656	26.6%	6,394	14.1%
Industrials	4,094	13.6%	1,210	10.3%	3,466	10.7%	8,760	19.3%
Consumer Discretionary	3,890	12.9%	1,444	12.3%	2,238	6.9%	5,072	11.2%
Consumer Staples	1,594	5.3%	1,045	8.9%	1,674	5.1%	3,265	7.2%
Health Care	2,022	6.7%	630	5.4%	1,014	3.1%	4,068	9.0%
Financials	2,851	9.5%	1,286	11.0%	3,376	10.4%	5,007	11.0%
Information Technology	1,549	5.2%	265	2.3%	1,435	4.4%	4,921	10.8%
Communication Services	1,543	5.1%	482	4.1%	1,499	4.6%	1,685	3.7%
Utilities	907	3.0%	2,596	22.2%	1,764	5.4%	1,566	3.5%
Real Estate	2,544	8.5%	992	8.5%	572	1.8%	3,697	8.2%
Total	30,046	100%	11,703	100%	32,533	100%	45,356	100%

Industry	France Calc. Months	%	Germany Calc. Months	%	Hong Kong SAR Calc. Months	%	India Calc. Months	%
Energy	598	3.7%	170	0.9%	314	1.5%	1,077	5.0%
Materials	825	5.1%	1,609	8.9%	1,372	6.6%	3,798	17.5%
Industrials	3,744	23.1%	4,223	23.3%	2,711	13.0%	3,027	13.9%
Consumer Discretionary	2,197	13.6%	2,718	15.0%	3,520	16.9%	2,117	9.7%
Consumer Staples	1,074	6.6%	685	3.8%	1,034	5.0%	1,445	6.7%
Health Care	1,615	10.0%	1,496	8.2%	735	3.5%	1,906	8.8%
Financials	1,897	11.7%	1,669	9.2%	2,324	11.1%	4,240	19.5%
Information Technology	1,222	7.5%	2,341	12.9%	1,546	7.4%	1,532	7.1%
Communication Services	1,250	7.7%	1,178	6.5%	1,293	6.2%	841	3.9%
Utilities	592	3.7%	638	3.5%	1,835	8.8%	1,304	6.0%
Real Estate	1,176	7.3%	1,419	7.8%	4,164	20.0%	441	2.0%
Total	16,190	100%	18,146	100%	20,848	100%	21,728	100%

Industry	Japan Calc. Months	%	South Korea Calc. Months	%	UK Calc. Months	%	U.S. Calc. Months	%
Energy	1,095	1.4%	461	2.0%	2,222	5.4%	12,925	4.9%
Materials	7,335	9.6%	2,277	10.1%	3,515	8.6%	14,745	5.6%
Industrials	17,570	22.9%	5,010	22.2%	8,364	20.4%	38,371	14.7%
Consumer Discretionary	12,611	16.4%	2,853	12.6%	6,502	15.9%	32,484	12.4%
Consumer Staples	6,740	8.8%	2,076	9.2%	2,602	6.3%	10,823	4.1%
Health Care	4,473	5.8%	2,365	10.5%	2,227	5.4%	37,838	14.5%
Financials	7,360	9.6%	2,921	12.9%	4,985	12.2%	40,082	15.3%
Information Technology	9,568	12.5%	2,735	12.1%	4,140	10.1%	41,195	15.7%
Communication Services	2,417	3.1%	1,435	6.3%	2,229	5.4%	9,123	3.5%
Utilities	1,553	2.0%	350	1.5%	861	2.1%	8,133	3.1%
Real Estate	6,020	7.8%	130	0.6%	3,339	8.1%	15,853	6.1%
Total	76,742	100%	22,613	100%	40,986	100%	261,572	100%

Source of underlying data: MSCI ESG database. All calculations by Kroll.

MSCI ESG Ratings

Methodological Framework

To conduct the ESG Returns Study, the outputs (i.e., ESG ratings) issued by MSCI are a key ingredient in our analysis. However, it is not our goal to assess the reasonability of MSCI's ESG rating methodology, other than the procedures outlined previously in the report (see section titled "Foundation of the ESG Returns Study – Selecting a Source for ESG Ratings"). A synopsis of the MSCI ESG methodological framework is provided below.[145]

History

MSCI ESG ratings aim to measure a company's resilience to long-term, financially relevant ESG risks.[146] As of December 2021, MSCI had 17 years (2005–2021) of ESG data available.

Data Sources

MSCI collects data from the following sources:[147]

- Macro data at segment or geographic level from academic, government, and nongovernmental organization (NGO) datasets
- Company disclosure (10-Ks, annual reports, sustainability report, proxy reports, annual general meeting results, etc.)
- Government databases, 3,400+ media outlets, NGO, other stakeholder sources

Monitoring

Companies typically receive an annual in-depth review, but significant changes detected during MSCI's daily monitoring of controversies and governance events may trigger an intra-year re-rating.

The MSCI ESG Ratings Methodology Committee approves (i) exceptions, (ii) rating overrides, and (iii) changes to a company's rating(s) that are large (i.e., two or more ratings categories). The ESG Methodology Committee also reviews model changes.

Hierarchy

The MSCI ESG methodological framework has three pillars (environment, social, and governance), 10 themes and 35 key issues, as outlined in Exhibit A1-15.[148]

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145 For a more detailed review, visit https://www.msci.com/our-solutions.

146 Source: https://www.msci.com/zh/esg-ratings.

147 Companies are invited to participate in a formal data verification process.

148 Intra-industry weightings of the key issues at the company level may vary based upon "company-specific nuances that may not be captured by the industry classification." To learn more, visit: https://www.msci.com/our-solutions/esg-investing/esg-industry-materiality-map#information-section.

Exhibit A1-15: MSCI ESG Key Issue Hierarchy (Themes Listed Under Each ESG Pillar in Gray, Key Issues Listed Under Each Theme)[149]

Environment Pillar

Climate Change	Natural Capital	Pollution and Waste	Environmental Opportunities
– Carbon Emissions	– Water Stress	– Toxic Emissions and Waste	– Opportunities in Clean Tech
– Product Carbon Footprint	– Biodiversity and Land Use	– Packaging Material and Waste	– Opportunities in Green Building
– Financing Environmental Impact	– Raw Material Sourcing	– Electronic Waste	– Opportunities in Renewable Energy
– Climate Change Vulnerability			

Social Pillar

Human Capital	Product Liability	Stakeholder Opposition	Social Opportunities
– Labor Management	– Product Safety and Quality	– Controversial Sourcing	– Access to Communications
– Health and Safety	– Chemical Safety	– Community Relations	– Access to Finance
– Human Capital Development	– Consumer Financial Protection		– Access to Health Care
– Supply Chain Labor Standards	– Privacy and Data Security		– Opportunities in Nutrition and Health
	– Responsible Investment		
	– Health and Demographic Risk		

Governance Pillar

Corporate Governance	Corporate Behavior		
– Ownership and Control	– Business Ethics		
– Board	– Tax Transparency		
– Pay			
– Accounting			

MSCI ESG Ratings Scale (AAA to CCC)

The overall (or composite) MSCI ESG rating (i.e., MSCI ESG datapoint IVA_COMPANY_RATING) is used in the ESG Returns Study to analyze the differences in performance (if any) of companies with different overall MSCI ESG ratings. The overall MSCI ESG ratings are provided on a AAA-to-CCC scale.[150]

All companies in all industries are evaluated on the key issues under the governance pillar by MSCI. This is based on MSCI's view that governance is "…universally important and should be evaluated in an integrated way, regardless of industry."[151] By contrast, the weights of the environmental and social key issues can vary between industries."[152,153]

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149 Source: MSCI ESG Research LLC, "ESG Ratings Methodology," (December 2021), page 10.

150 A list of all overall MSCI ESG ratings as defined by MSCI ESG datapoint IVA_COMPANY_RATING is as follows (from best to worst): AAA, AA, A, BBB, BB, B and CCC.

151 Source: MSCI ESG Research LLC, "ESG Ratings Methodology," (December 2021), page 39.

152 Source: MSCI ESG Research LLC, "ESG Ratings Methodology," (December 2021), page 39.

153 In addition to differences in key issues between industries, there can be differences in key issues within an industry at the company level due to "…company-specific nuances that may not be captured by the industry classification." See: https://www.msci.com/our-solutions/esg-investing/esg-industry-materiality-map#information-section.

At a high level, a normalization within industries is accomplished by comparing all companies categorized in an industry without regard to country assignment, but adjustments are made for "geographic segment exposure" (segments are generally defined as countries of operations). These adjustments are made to incorporate differences in level of risk or opportunity based upon factors such as: (i) stringency and expected change in regulations, (ii) country-level risk factors such as differential employee fatality rates or corruption levels, and (iii) differences in incentive structures and subsidies.[154]

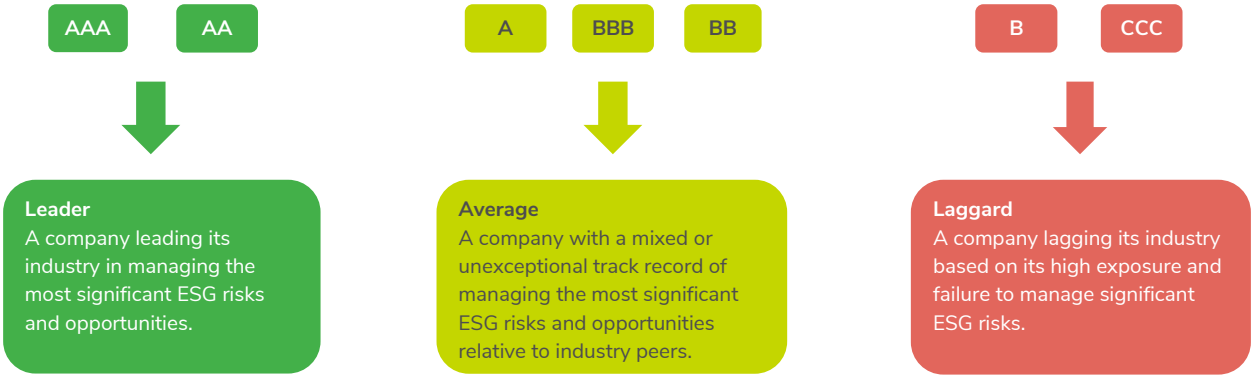
To arrive at a final MSCI ESG rating of a company, the weighted average of the governance pillar score and the individual environmental and social key issue scores is computed and then normalized relative to its industry peers. A benchmark peer set comprising all companies rated by MSCI ESG research within an ESG industry is used to calculate industry-relative ratings, which MSCI uses to ensure that companies' relative ratings do not change when other companies are added to or removed from the peer set.[155] After any override considerations are factored in, each company's final industry-adjusted score corresponds to a rating between best (AAA) and worst (CCC).[156]

Leader, Average and Laggard Ratings Assignments

MSCI's seven individual ESG rating categories (AAA to CCC) are mapped into the broader rating measures (Leader, Average and Laggard) (see Exhibit A1-16):[157]

The ESG Returns Study analyzes the relative performance of indexes comprised of both the individual AAA-to-CCC ratings and the broader categories of Leader, Average and Laggard.

Exhibit A1-16: MSCI ESG Leader, Average and Laggard Assignments



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154 Regarding some key issues, MSCI states the following: "... we assess some key issues geographic exposure at a subnational level (e.g., mapping facilities to distinct water basins). Furthermore, when country-level segmentation is not available, we estimate country exposure by using the gross domestic product-weighted breakdown of regions." Source: MSCI ESG Research LLC, "ESG Ratings Methodology," (December 2021), page 17.

155 ESG rating industries are based on GICS subindustries, where applicable which MSCI group to form peer sets in which companies face relatively similar key issues.

156 Source: MSCI ESG Research LLC, "ESG Ratings Methodology," (December 2021), pages 44–45.

157 Source of information: https://www.msci.com/our-solutions/esg-investing/esg-ratings.

MSCI ESG Ratings are Industry-Specific, but…

MSCI states that its overall ESG scores are "…not absolute but are explicitly intended to be interpreted relative to a company's industry peers."[158] However, there is strong precedent set by MSCI to mix-and-match industries, and to make comparisons across industries.

As of March 2020, MSCI "…is the world's largest provider of Environmental, Social and Governance (ESG) Indexes with over 1,500 equity and fixed-income ESG Indexes…."[159] These indexes include a Leaders index, a Universal index, and Climate Change index (among others) that are comprised of companies with various ESG characteristics, irrespective of industry classification.[160] MSCI commonly makes comparisons across industries, and countries, regions and classifications of economic development level (e.g., developed or emerging markets), irrespective of industry classification.[161,162]

The ESG Returns Study makes similar comparisons between industries, countries/markets and geographic regions.

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158 Source of information: MSCI ESG Research LLC, "ESG Ratings Methodology," (December 2021), page 45.

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

160 For more information, visit: https://www.msci.com/our-solutions/indexes/esg-indexes.

161 See Saurabh Katiyar (Executive Director, MSCI Research) and Yuliya Plyakha Ferenc (Vice President, MSCI Research), "The Performance of ESG Indexes: Year in Review, January 31, 2023. Available at: https://www.msci.com/www/blog-posts/the-performance-of-esg-indexes/03625107912.

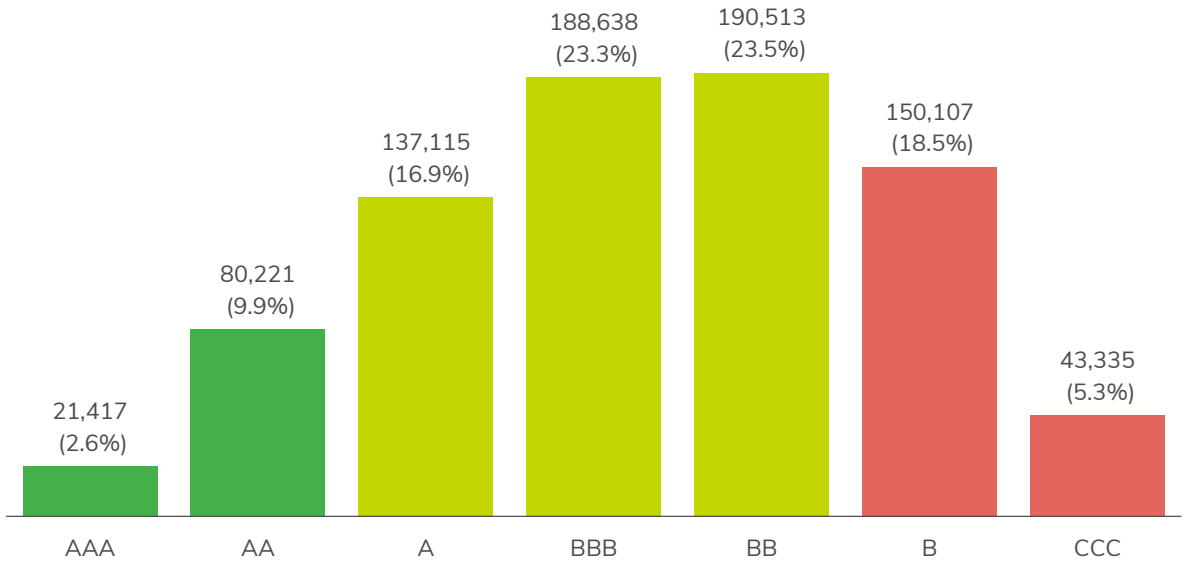
162 Also, see: https://www.msci.com/documents/1296102/17835852/MSCI-ESG-Indexes-Factsheet.pdf/3b449b87-d470-977a-3b56-77095b8d8fc7.

Ratings Composition of the Company Sets Used in the ESG Returns Study[163]

Ratings Distribution at the World Level

Exhibit A1-17 shows the distribution of MSCI ESG individual AAA-to-CCC ratings (as measured by calculation months), while Exhibit A1-18 illustrates the broader categories of Leader, Average and Laggard ratings for the World. There are a total of 811,346 calculation months in both exhibits.[164]

Exhibit A1-17: Distribution of MSCI ESG Ratings (AAA-to-CCC) at the World Level, as Defined by Calculation Months"
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

The distribution in Exhibit A1-17 has a slightly negative skew, suggesting that the MSCI ESG ratings associated with the companies that made it through the ESG Returns Study screening process skew more toward negative ratings than positive ratings.[165] The best rating (AAA) and the worst rating (CCC) have the smallest number of calculation months, with 21,417 (2.6% of total) and 43,335 (5.3% of total), respectively. Most of the ratings (63.6%) were in the middle (i.e., A, BBB, B (the Average category)), as illustrated in Exhibit A1-18.

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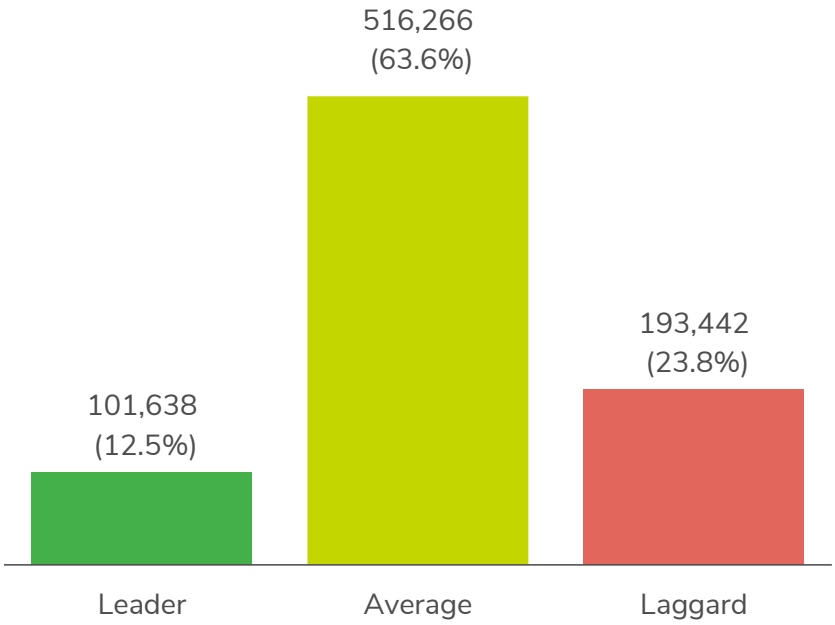
163 The calculation months reported in the ESG Returns Study are based on the set of companies that made it through the screens described in the "Company Set Selection," and are not intended to be descriptions of the makeup of the overall MSCI ESG database.

164 To learn more about calculation months, see the section "The Concept of Calculation Months."

165 The skew of the distribution in Exhibit A1-17 is -0.31.

Exhibit A1-18: Distribution of MSCI ESG Ratings (Leader, Average, Laggard) at the World Level, as Defined by Calculation Months
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

Ratings (Leader, Average, Laggard) Distribution at the Geographic Regions Level

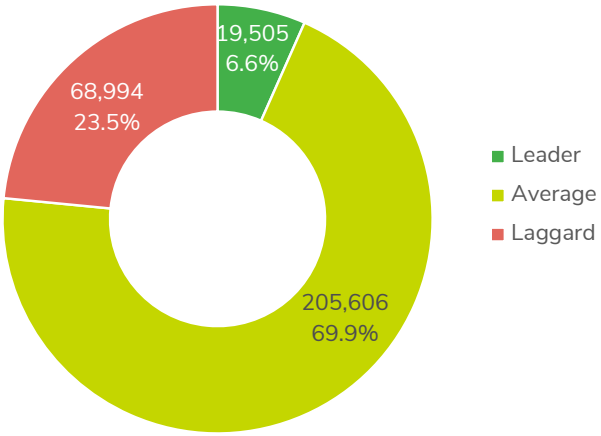
In Exhibits A1-19, A1-20 and A1-21, the distribution of calculation months by ESG rating is shown respectively for North America, Asia and Western Europe. Each of the three geographic regions' distribution is similar to the World distribution in that the best rating category (Leader) and the worst rating category (Laggard) have the smallest number of calculation months, with most being concentrated in the middle (i.e., the Average category).

However, a significant difference is found in the pattern of the ratings distribution for Leader and Laggard in Western Europe when compared to the North America and Asia company sets:

- The percentage of the best ratings category (Leader) for Western Europe (28.6%) is four times greater than the percentage of the Leader ratings in North America (6.6%) and more than triple those in Asia (8.1%).

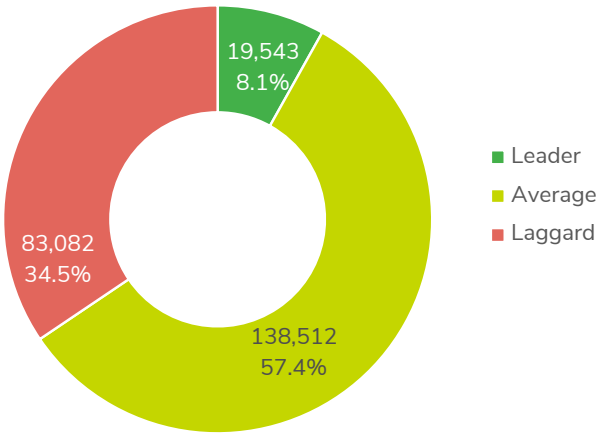
- The percentage of the worst ratings category (Laggard) for Western Europe (8.8%) is approximately one-third the percentage of the Laggard ratings in North America (23.5%) and a quarter of Asia's (34.5%).

Exhibit A1-19: Distribution of MSCI ESG Ratings (Leader, Average, Laggard) in North America, as Defined by Calculation Months
(January 2013–December 2021)



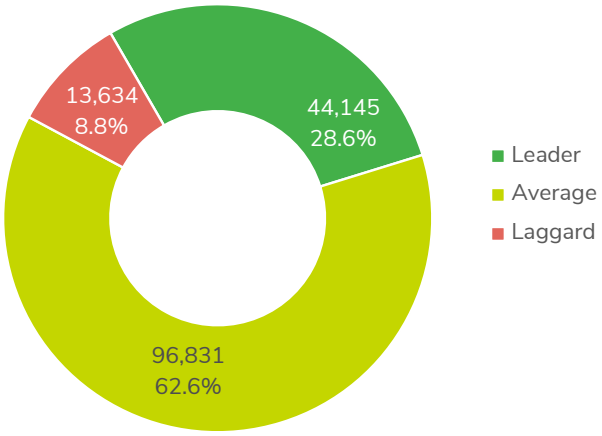
Source of underlying data: MSCI ESG database. All calculations by Kroll.

Exhibit A1-20: Distribution of MSCI ESG Ratings (Leader, Average, Laggard) in Asia, as Defined by Calculation Months
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

Exhibit A1-21: Distribution of MSCI ESG Ratings (Leader, Average, Laggard) in Western Europe, as Defined by Calculation Months
(January 2013–December 2021)



Source of underlying data: MSCI ESG database. All calculations by Kroll.

Ratings by Geographic Area and Industry

The previous exhibits examined industry assignments and MSCI ESG ratings separately. The following exhibits examine MSCI ESG ratings by industry. These comparisons are made for the World and at the regional level (North America, Asia and Western Europe).

World – Ratings by Industry

Exhibit A1-22 first shows the number of calculation months for the World company set by industry (labeled as Total Observations).[166] To its right, it then shows the percentage of each rating assignment by industry, as measured by calculation months.

For example, at the individual industry level, GICS 10 – Energy has a total of 40,194 observations (or calculation months) in the January 2013–December 2021 period. Of this total of observations, 2.7% was associated with an AAA rating. The 2.7% is shown in black shading in Exhibit A1-22. Alternatively, the rating that was most often assigned for GICS 10 – Energy was BB, with 26.1% of total observations (or calculation months) for the industry (also shown in black shading in Exhibit A1-22).

[166] The total number of calculation months in Exhibit A1-22 is 811,346. To learn more about calculation months, see the section "The Concept of Calculation Months."

Exhibit A1-22: World – MSCI ESG Rating by Industry, as Defined by Calculation Months
(January 2013–December 2021)

Industry	Total Observations	AAA	AA	A	BBB	BB	B	CCC	Leader (AAA + AA)	Average (A + BBB + BB)	Laggard (B + CCC)
Energy	40,194	2.7%	6.9%	13.5%	24.4%	26.1%	22.3%	4.1%	9.6%	64.0%	26.4%
Materials	81,106	2.7%	6.8%	13.8%	20.4%	21.6%	22.1%	12.6%	9.5%	55.9%	34.7%
Industrials	131,607	3.2%	13.9%	20.0%	21.4%	20.7%	15.2%	5.6%	17.1%	62.2%	20.7%
Consumer Discretionary	95,887	2.3%	11.8%	17.2%	24.0%	23.1%	16.3%	5.3%	14.1%	64.3%	21.6%
Consumer Staples	52,266	2.6%	12.1%	19.6%	20.9%	21.0%	18.7%	5.2%	14.7%	61.5%	23.9%
Health Care	72,292	1.4%	8.7%	17.6%	28.1%	26.4%	14.9%	3.0%	10.1%	72.0%	17.8%
Financials	122,668	2.7%	8.2%	14.7%	24.2%	27.8%	19.2%	3.2%	10.9%	66.8%	22.3%
Information Technology	87,972	1.6%	8.3%	16.5%	26.2%	25.2%	18.5%	3.8%	9.8%	67.9%	22.3%
Communication Services	39,010	4.3%	10.1%	21.0%	21.6%	19.5%	18.1%	5.4%	14.4%	62.2%	23.4%
Utilities	33,672	4.7%	12.6%	21.3%	21.7%	18.5%	14.8%	6.4%	17.3%	61.5%	21.2%
Real Estate	54,672	2.5%	7.8%	12.3%	20.7%	23.6%	28.1%	5.0%	10.3%	56.6%	33.1%

Source of underlying data: MSCI ESG database. All calculations by Kroll.

In general, BBB was the rating most often assigned across the 11 individual industries, (i.e., BBB came in first in six of the 11 industries). Alternatively, AAA was the rating least often assigned in all 11 industries (i.e., AAA came in last in all 11 industries).[167]

In the broader rating categories, Leader was the least often assigned in all 11 industries, and Average was the most often assigned.

North America – Ratings by Industry

Exhibit A1-23 first shows the number of calculation months for the North America company set by industry (labeled as Total Observations).[168] To its right, it then shows the percentage of each rating assignment by industry, as measured by calculation months.

For example, at the individual industry level, GICS 10 – Energy has a total of 19,764 observations (or calculation months) in the January 2013–December 2021 period. Of this total of observations, 0.8% was associated with an AAA rating. The 0.8% is shown in black shading in Exhibit A1-23. Alternatively, the rating that was most often assigned for GICS 10 – Energy was BB, with 32.5% of total observations (or calculation months) for the industry (also shown in black shading in Exhibit A1-23).

In general, BB was the rating most often assigned across the 11 individual industries (i.e., BB came in first in nine of the 11 industries). Alternatively, AAA was the least often assigned rating to all 11 industries (i.e., AAA came in last in all 11 industries).[169]

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166 The comparisons in Exhibit A1-22 are at the individual industry level, as opposed to a count of the rating assignments across all industries in aggregate. The count of rating assignments at the World level across all industries (i.e., without regard to industry) is shown in Exhibit A1-17. In Exhibit A1-22, AAA is still the least-assigned rating (2.6%), and BB is still the most-assigned rating (23.5%), followed closely by BBB (23.3%).

168 The total number of calculation months in Exhibit A1-23 is 294,105. To learn more about calculation months, see the section "The Concept of Calculation Months."

169 The comparisons in Exhibit A1-23 are at the individual industry level, as opposed to a count of the rating assignments across all industries in aggregate.

Exhibit A1-23: North America – MSCI ESG Rating by Industry, as Defined by Calculation Months
(January 2013–December 2021)

Industry	Total Observations	AAA	AA	A	BBB	BB	B	CCC	Leader (AAA + AA)	Average (A + BBB + BB)	Laggard (B + CCC)
Energy	19,764	0.8%	1.8%	10.3%	24.6%	32.5%	27.4%	2.6%	2.6%	67.4%	30.0%
Materials	23,401	1.5%	3.7%	13.7%	20.8%	27.5%	25.3%	7.5%	5.2%	62.0%	32.8%
Industrials	41,837	1.1%	8.2%	23.0%	25.8%	26.7%	12.9%	2.4%	9.3%	75.4%	15.3%
Consumer Discretionary	34,722	0.8%	7.4%	14.6%	27.4%	30.7%	15.0%	4.2%	8.2%	72.7%	19.1%
Consumer Staples	12,497	1.4%	9.2%	15.2%	22.3%	26.2%	21.4%	4.3%	10.6%	63.7%	25.6%
Health Care	38,852	0.9%	6.3%	15.5%	30.0%	30.5%	15.1%	1.6%	7.2%	76.0%	16.7%
Financials	43,458	0.5%	3.7%	7.9%	22.7%	35.9%	26.2%	3.1%	4.2%	66.6%	29.3%
Information Technology	42,630	1.0%	6.0%	17.2%	26.2%	29.7%	18.1%	1.9%	7.0%	73.0%	20.0%
Communication Services	10,622	0.3%	6.4%	13.4%	24.0%	29.6%	22.8%	3.5%	6.7%	67.0%	26.3%
Utilities	9,897	1.7%	8.1%	20.1%	26.7%	22.7%	18.2%	2.4%	9.8%	69.5%	20.7%
Real Estate	16,425	0.2%	2.5%	8.6%	19.4%	29.3%	37.3%	2.6%	2.8%	57.3%	39.9%

Source of underlying data: MSCI ESG database. All calculations by Kroll.

In the broader rating categories, Leader was the least often assigned in all 11 industries, and Average was the most often assigned, matching the pattern in the World company set (see Exhibit A1-22).

Asia – Ratings by Industry

Exhibit A1-24 first shows the number of calculation months for the Asia company set by industry (labeled as Total Observations).[170] To its right, it then shows the percentage of each rating assignment by industry, as measured by calculation months.

Exhibit A1-24: Asia – MSCI ESG Rating by Industry, as Defined by Calculation Months
(January 2013–December 2021)

Industry	Total Observations	AAA	AA	A	BBB	BB	B	CCC	Leader (AAA + AA)	Average (A + BBB + BB)	Laggard (B + CCC)
Energy	6,316	1.6%	8.1%	13.6%	27.9%	17.3%	20.1%	11.4%	9.7%	58.7%	31.5%
Materials	26,797	1.4%	6.2%	10.8%	18.5%	17.2%	23.6%	22.3%	7.6%	46.5%	45.9%
Industrials	44,947	1.6%	8.7%	13.7%	18.7%	22.1%	23.5%	11.8%	10.3%	54.5%	35.2%
Consumer Discretionary	30,876	1.1%	7.6%	15.5%	21.1%	23.4%	23.2%	8.1%	8.7%	60.0%	31.3%
Consumer Staples	20,003	0.3%	7.0%	12.8%	19.5%	25.4%	26.2%	8.9%	7.3%	57.6%	35.1%
Health Care	15,269	0.6%	5.7%	14.7%	22.2%	25.5%	22.4%	8.9%	6.3%	62.4%	31.3%
Financials	30,695	0.5%	6.2%	15.0%	26.1%	26.2%	19.7%	6.2%	6.7%	67.3%	26.0%
Information Technology	27,529	1.6%	8.1%	14.9%	22.9%	20.6%	23.5%	8.5%	9.6%	58.4%	32.0%
Communication Services	11,304	2.6%	5.5%	22.1%	19.4%	21.6%	23.0%	5.7%	8.1%	63.1%	28.8%
Utilities	8,518	0.8%	3.3%	9.3%	16.2%	27.8%	22.8%	19.8%	4.2%	53.3%	42.5%
Real Estate	18,883	1.7%	4.5%	8.9%	16.3%	27.0%	34.1%	7.5%	6.2%	52.2%	41.6%

Source of underlying data: MSCI ESG database. All calculations by Kroll.

[170] The total number of calculation months in Exhibit A1-24 is 241,137. To learn more about calculation months, see the section "The Concept of Calculation Months."

For example, at the individual industry level, GICS 10 – Energy has a total of 6,316 observations (or calculation months) in the January 2013–December 2021 period. Of this total of observations, 1.6% was associated with an AAA rating. The 1.6% is shown in black shading in Exhibit A1-24. Alternatively, the rating that was most often assigned for GICS 10 – Energy was BBB, with 27.9% of total observations (or calculation months) for the industry (also shown in black shading in Exhibit A1-24).

In general, B was the rating most often assigned across the 11 individual industries (i.e., BB came in first in six of the 11 industries). Alternatively, AAA was the rating least often assigned to all 11 industries (i.e., AAA came in last in all 11 industries).[171]

In the broader categories, Leader was the least often assigned in all 11 industries, and Average was the most often assigned in all 11 industries, matching the pattern in the World and North America company sets (see Exhibits A1-22 and A1-23).

Western Europe – Ratings by Industry

Exhibit A1-25 first shows the number of calculation months for the Western Europe company set by industry (labeled as Total Observations).[172] To its right, it then shows the percentage of each rating assignment by industry, as measured by calculation months.

Exhibit A1-25: Western Europe – MSCI ESG Rating by Industry, as Defined by Calculation Months (January 2013–December 2021)

Industry	Total Observations	AAA	AA	A	BBB	BB	B	CCC	Leader (AAA + AA)	Average (A + BBB + BB)	Laggard (B + CCC)
Energy	6,217	8.0%	20.2%	18.4%	25.4%	15.6%	10.8%	1.6%	28.2%	59.4%	12.4%
Materials	12,644	10.6%	14.5%	20.0%	22.7%	18.5%	12.1%	1.5%	25.2%	61.2%	13.7%
Industrials	33,258	7.5%	28.1%	24.8%	19.8%	12.5%	6.5%	0.9%	35.6%	57.1%	7.3%
Consumer Discretionary	19,114	6.5%	25.2%	23.9%	21.9%	14.1%	6.2%	2.2%	31.7%	60.0%	8.3%
Consumer Staples	9,685	10.6%	25.4%	27.2%	21.5%	9.2%	5.4%	0.8%	36.0%	57.9%	6.1%
Health Care	13,078	3.9%	13.9%	26.2%	29.6%	18.8%	7.4%	0.2%	17.7%	74.6%	7.6%
Financials	21,097	7.9%	13.9%	20.0%	25.9%	20.9%	10.9%	0.5%	21.8%	66.8%	11.4%
Information Technology	13,524	3.9%	16.2%	17.8%	33.9%	19.6%	8.1%	0.4%	20.1%	71.4%	8.5%
Communication Services	9,615	11.0%	21.4%	27.6%	17.7%	11.7%	7.4%	3.2%	32.4%	57.0%	10.6%
Utilities	5,142	15.2%	28.9%	36.7%	13.0%	4.8%	1.2%	0.3%	44.1%	54.4%	1.4%
Real Estate	11,236	4.0%	21.0%	26.0%	29.9%	11.5%	7.0%	0.6%	25.0%	67.4%	7.6%

Source of underlying data: MSCI ESG database. All calculations by Kroll.

For example, at the individual industry level, GICS 10 – Energy has a total of 6,217 observations (or calculation months) in the January 2013–December 2021 period. Of this total of observations, 8.0% was associated with an AAA rating (see black shading in Exhibit A1-25), while 1.6% as associated with CCC, the least often assigned rating for GICS 10 – Energy at the Western Europe level. Alternatively, the rating that was most often assigned for GICS 10 – Energy was BBB, with 25.4% of total observations (or calculation months) for the industry (also shown in black shading in Exhibit A1-25).

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171 The comparisons in Exhibit A1-25 are at the individual industry level, as opposed to a count of the rating assignments across all industries in aggregate.

172 The total number of calculation months in Exhibit A1-25 is 154,610. To learn more about calculation months, see the section "The Concept of Calculation Months."

In general, BBB was the rating most often assigned across the 11 individual industries, (i.e., BBB came in first in six of the 11 industries). Alternatively, CCC was the rating least often assigned to all 11 industries (i.e., CCC came in last in all 11 industries).[173]

In the broader categories, Laggard was the least often assigned in all 11 industries, and Average was the most often assigned. This differs from the pattern seen for the World, North America and Asia company sets, where AAA was the least assigned rating in all 11 industries (see Exhibits A1-22, A1-23 and A1-24).

Takeaways From All Geographic Regions

For the companies in the ESG Returns Study that made it through the screening process, there are two main observations:

- MSCI ESG ratings for the best rating (AAA) are the rarest (i.e., least assigned) in the North America and Asia company sets, but in the Western Europe company set, the rarest rating (i.e., least assigned) is CCC (i.e., the worst rating).

- The MSCI ESG ratings most assigned in the North America and Asia company sets are in the middle of the range, but tend to be more negative than positive. While the MSCI ESG ratings most assigned in the Western Europe company set are also in the middle of the range, they tend to be more positive than negative.

[173] The comparisons in Exhibit A1-25 are at the individual industry level (i.e., within each of the industries, in turn) as opposed to a count of the ratings assignments across all industries in aggregate.

Index Construction Methodology

Market Capitalization Weighed

The purpose of the ESG Returns Study is to analyze the differences in performance (if any) of indexes comprised of companies with different overall MSCI ESG ratings.

The indexes used in this study are not indexes created by MSCI.[174] The indexes used in the ESG Returns Study were created by Kroll using market-cap-weighted index construction techniques like those used to create the S&P 500 Index and other well-known indexes, including the MSCI USA Index.[175,176,177]

Exhibit A1-26 is a graph of performance of three indexes over the January 2013–December 2021 time horizon (monthly) that is used in this study: (i) the S&P 500 Index, (ii) the MSCI USA Index, and (iii) an index created by Kroll that includes all of the U.S. companies from the MSCI ESG database that made it through the ESG Returns Study's screening process. All three of the indexes in Exhibit A1-26 are market-cap-weighted total return indexes denominated in U.S. dollars.[178]

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174 To learn more about MSCI ESG indexes, visit: msci.com/our-solutions/indexes/esg-indexes.

175 To learn more about the S&P 500 Index, visit: https://www.spglobal.com/spdji/en/indices/equity/sp-500/#overview.

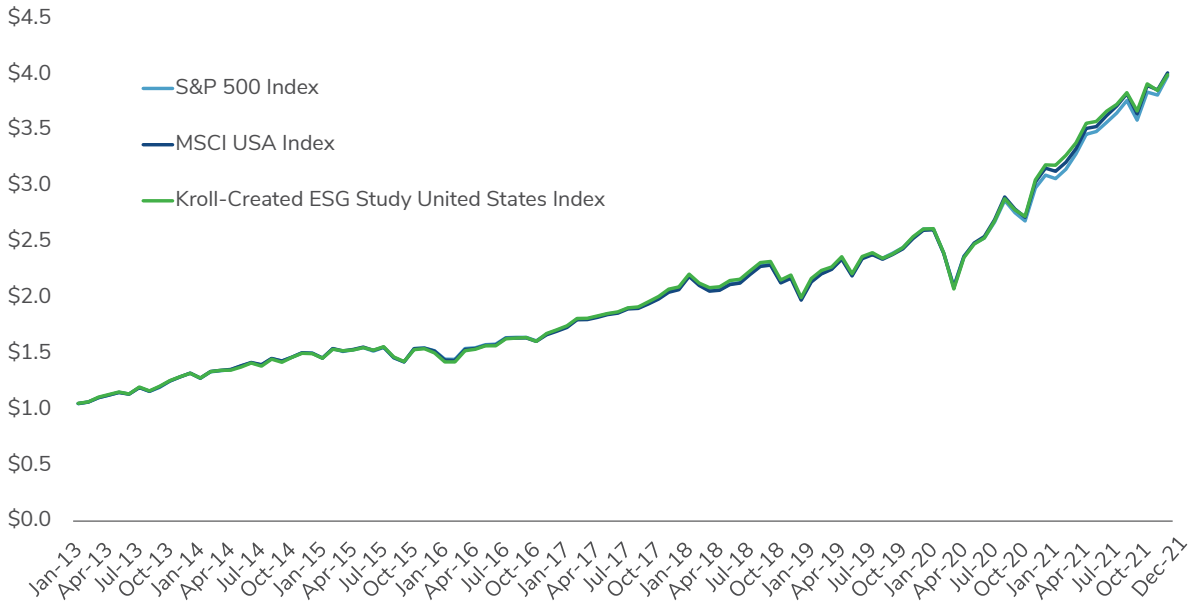
176 To learn more about the MSCI USA Index, visit: https://www.msci.com/documents/10199/67a768a1-71d0-4bd0-8d7e-f7b53e8d0d9f.

177 The indexes presented in the Kroll ESG Returns Study are market-cap-weighted because equal-weighted indexes can produce a substantial upward bias.

178 Total Return consists of three components: (i) price (i.e., capital appreciation) returns, (ii) income returns (e.g., dividends), and (iii) reinvestment (e.g., of dividends) returns.

Exhibit A1-26: Total Return Indexes of the S&P 500 Index, MSCI USA Index, and Kroll-Created ESG Study U.S. Index (USD)

(January 2013–December 2021) (USD 1 = December 2012)



Sources of underlying data: MSCI ESG database and S&P Capital IQ. All calculations by Kroll.

The three indexes in Exhibit A1-26 had very similar performance characteristics over the January 2013–December 2021 time horizon shown, and nearly overlap. The annual geometric (i.e., compound) rate of return of the S&P 500 Index, the MSCI USA Index and the Kroll-created ESG Study U.S. Index was 16.61%, 16.70% and 16.65%, respectively, over the nine-year time horizon shown in Exhibit A1-26.

In this same fashion, Kroll used the 13,256 companies from the MSCI ESG database that made it through our screening process to construct indexes of various area, country/market, industry, and MSCI ESG rating combinations for the ESG Returns Study.

"Last Known State" Assumption of MSCI Country, Industry, and ESG Ratings Assignments

MSCI typically does an annual in-depth review of companies (sometimes more frequently, sometimes less frequently). For all country assignments (i.e., MSCI ESG datapoint ISSUER_CNTRY_DOMICILE), industry assignments (i.e., MSCI ESG datapoint IVA_INDUSTRY), and ratings assignments (i.e., MSCI ESG datapoint IVA_COMPANY_RATING), the last known state was assumed.

For example, if the IVA_COMPANY_RATING as of IVA_RATING_DATE January 2015 for Company XYZ was AA, and the next IVA_RATING_DATE in the database for Company XYZ was January 2016, it was assumed that Company XYZ's rating was also AA for the months in between ratings dates (i.e., February 2015 through December 2015 were also AA). The same procedure was followed for country and industry assignments.

The ESG Returns Study's time horizon is January 2013–December 2021. Where appropriate, assignment of last known state of an MSCI ESG country/market, industry, or rating assignment as of January 2013 (and forward) made use of MSCI ESG country, industry, or rating assignments associated with IVA_RATING_DATEs prior to January 2013.[179]

For example, if Company XYZ did not have an IVA_COMPANY_RATING associated with IVA_RATING_DAT" January 2013, but (most recently) did have an IVA_COMPANY_RATING associated with IVA_RATING_DATE October 2012 (e.g., AA), then the last known state of Company XYZ's MSCI ESG rating (AA as of October 2012) would be assigned to January 2013.

Company Characteristics and Market Capitalization are Lagged One Month Behind Total Return

Company Characteristics

Company characteristics are defined in this study as (i) the area associated with a company (World, North America, Asia, Western Europe or an individual country); (ii) the industry the company operates in as defined by two-digit GICS® code; and (iii) the company's MSCI ESG rating (either on the AAA-to-CCC or the broader Leader, Average, Laggard scales).

Market Capitalization

Market capitalization (market cap) is defined as a company's common shares outstanding times the price per share, as measured at month-end and reported by Refinitiv.[180]

Total Return

Total return is defined as changes in a company's share price from month-end to month-end, including the effects of dividends, as reported by Refinitiv.

Lagging Avoids "Double Counting"

The month-end (i.e., month "0") to month-end (i.e., month "+1") change in share price information is used as an input in the calculation of the monthly total return and is thus already embedded in the month-end total return. To avoid double counting returns in the creation of the indexes in the ESG Returns Study, company market caps (which are used as weights to calculate the overall return for a given portfolio/index) are lagged one month behind company total returns.

In the same fashion, to avoid potentially double counting information associated with company characteristics that may already be embedded in total return, company characteristics are also lagged one month behind total returns.

Lagging is illustrated in Exhibit A1-27, where company characteristic and market cap information from Month 0 (in this example, May 2017) is paired with the company's total return from Month +1 (the subsequent month, June 2017).

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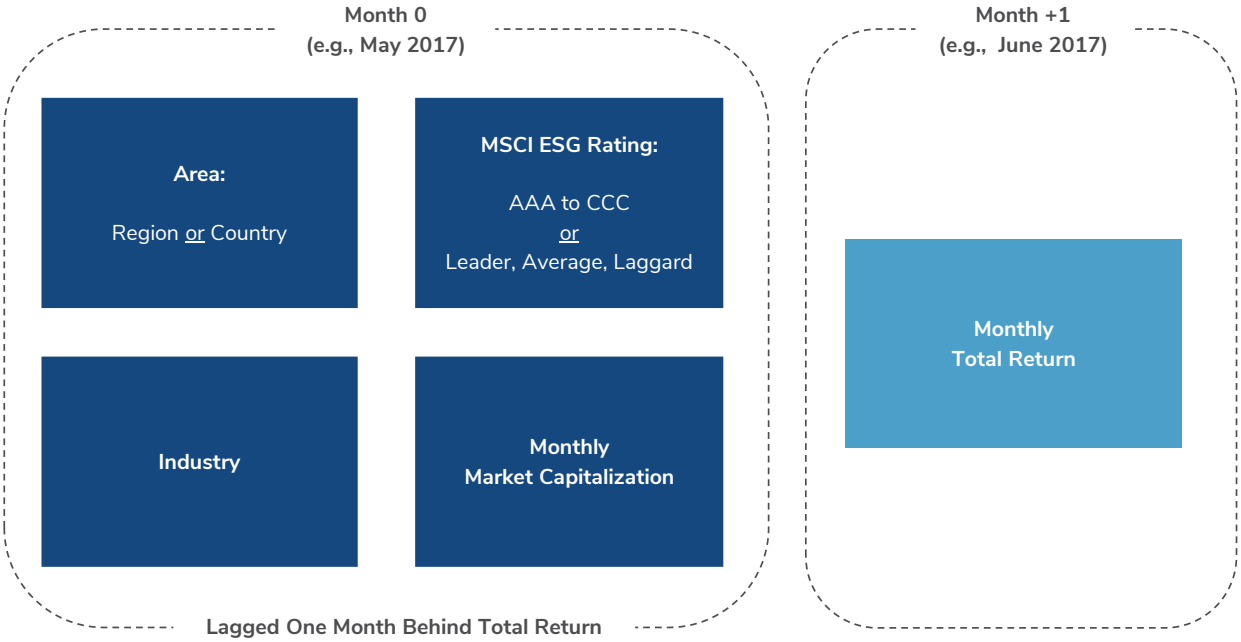
[179] The earliest month that could be used for country, industry, and ratings assignment prior to January 2013 is February 2011 (24 months prior). See the section entitled "Screen 4: 'Staleness' of Rating" for more information.

[180] Refinitiv, an LSEG business, is one of the world's largest providers of financial markets data and infrastructure. To learn more about Refinitiv, visit: https://www.refinitiv.com/en.

Exhibit A1-27: Company Characteristics and Market Cap Information is Lagged One Month Behind Total Return



Calculation Months are Index "Building Blocks"

The purpose of the ESG Returns Study is to analyze whether companies with better MSCI ESG ratings outperform companies with worse MSCI ESG ratings. To accomplish this, company sets with specific characteristics are identified (monthly), market-cap-weighted monthly indexes are constructed over the January 2013–December 2021 time horizon of the study, and the relative performance of indexes comprised of companies with different characteristics (e.g., area, country/market, industry, MSCI ESG rating) is measured.

The amount of data available to construct the indexes analyzed in the ESG Returns Study can vary significantly across geographic regions, countries/markets, industries, and ratings. To provide a way of quantifying where data was plentiful and where data was less plentiful, the concept of calculation month is introduced:

Calculation Month: Any combination of a single company's characteristics (i.e., area, country/industry, ESG rating) in month 0 that also has: (i) a market cap in month 0, and (ii) a total return in month +1 (i.e., the following month).

Exhibit A1-27 demonstrates how a company's characteristics and market caps are lagged one month behind the company's total returns to avoid double counting of return. Exhibit A1-27 *also* represents a single calculation month. Calculation months can be thought of as the building blocks used to construct the indexes in this study.[181,182]

An example of a single calculation month might be for hypothetical Company XYZ, which has the following characteristics in the MSCI ESG database as of IVA_RATING_DATE May 2017:[183]

- Country: Germany
- Industry: GICS 20 – Industrials
- MSCI ESG Rating: BBB

If Company XYZ also has a market cap as of May 2017 (month 0, in this case) and a total return in June 2017 (the following month; month +1, in this case), then this combination constitutes a calculation month, and will be used as a single building block in the creation of an index of BBB-rated companies in Germany that operate in the industry GICS 20 – Industrials.

Calculation months are arguably a better way of gauging the amount of data that went into building an index than merely counting the number of companies in it. For example, an index created using data from 10 companies that each had monthly information available for each of the 108 months from the January 2013–December 2021 time horizon analyzed in this study) would have a total of 1,080 calculation months (108 months x 10 companies in each month). Alternatively, an index created using data from 10 companies—some of which came into existence (or disappeared) halfway through the January 2013–December 2021 time horizon, had "spotty" monthly data over the entire time horizon, or were only assigned a rating in the final year of the time horizon—would have fewer calculation months, and would likely not have the same quality as the index that had more data to build it.

Calculation months also enable a high-level comparison of the relative size (through the lens of data availability) of the geographic regions or countries covered, or even to gain an understanding of whether an index is dominated by a single (or just a few) countries.

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181 The calculation months reported in the ESG Returns Study are based on the set of companies that made it through the screens described in the section "Company Set Selection," and are not intended to be descriptions of the makeup of the entire MSCI ESG database.

182 Indexes created in this report do not have to have all the characteristics shown in Exhibit A1-27 (i.e., World, Region or Country/Market, Industry, MSCI ESG rating). Company characteristics in any combination can be used to create an index. For example, an index can be created for companies in the U.S. company set, without regard to what industry in which they operate or what their MSCI ESG rating is. An index could also be created. For example, with companies in the Asia company set that have an MSCI ESG rating of BB, without regard to what industry they operate in.

183 IVA_RATING_DATE is an MSCI ESG database datapoint that represents the date of the most recently completed ESG ratings review and assessment for that issuer. For a list of all MSCI ESG database datapoints used in this study, see the section "Sources of Data."

For example, the North America company set in this study contributes 294,105 calculation months to index creation, while the Asia and Western Europe company sets contribute with fewer observations (241,137 and 154,610 calculation months, respectively; see Exhibit A1-4). Another example might be the North America company set (defined here as the U.S. and Canada), which is dominated by the U.S. (the U.S. contributes 261,572 calculation months to index creation, while Canada contributes only 32,533 calculation months).

Calculation Months are Summed Across the January 2013–December 2021 Time Horizon

The number of calculation months reported in the various tables and graphs in the ESG Returns Study are the sum of calculation months available across all months in the time horizon analyzed in the study (January 2013–December 2021). For example, the total number of calculation months available to construct an index over the January 2013–December 2021 period comprised of BBB-rated companies in Germany that operate in the industry GICS 20 – Industrials was 920. Alternatively, the total number of calculation months available to construct an index comprised of AAA-rated companies in Germany that operate in the industry GICS 10 – Energy was zero.

The Minimal Number of Calculation Months Required

The indexes presented in the ESG Returns Study had to have at least one calculation month available in each of the 108 months from January 2013 to December 2021.

The Minimal Number of Companies Required

In addition to the minimal number of calculation months threshold, the indexes presented in the ESG Returns Study had to have at least an average of 50 companies during the January 2013–December 2021 period in order to be shown. We applied a further restriction when deciding whether to show the detail for any of the 11 industries within specific geographic regions or country/markets. Specifically, we excluded industries where the average number of companies over the January 2013– December 2021 time horizon was zero in two or more ESG rating categories (e.g., it was often the case that industries within a given country/market had no companies rated AAA and CCC). By applying these screening criteria, the U.S. was the only country that had enough data availability to display results for all 11 industries. The World and all three geographic regions (North America, Western Europe and Asia) had sufficient data to have results displayed for all 11 industries.[184]

Putting It All Together

The ingredients to construct a single-month index return using two calculation months are shown in Exhibit A1-28. Companies ABC and XYZ in Exhibit A1-28 are both (i) UK companies, with (ii) MSCI ESG rating BB, that (iii) operate in industry GICS 40 – Financials, (iv) have monthly market cap data as of IVA_RATING_DATE[185] May 2017, and (v) have monthly total return data as of the subsequent month (June 2017).

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[184] Visit the full interactive report to see which industries were available within each specific country/market: www.kroll.com/esg-global-investor-returns-study.

[185] IVA_RATING_DATE is an MSCI ESG database datapoint that represents the date of the most recently completed ESG ratings review and assessment for that issuer. For a list of all MSCI ESG database datapoints used in this study, see the section "Sources of Data."

Exhibit A1-28: Construction of a Single-Month (June 2017) Index Return Using Two Calculation Months[186]

	Month 0 (e.g., May 2017)			Month +1 (e.g., June 2017)
Company	Industry	MSCI ESG Rating	Market Cap ($MM)	Total Return
UK Company ABC	GICS 40 - Financials	BB	$80	5.3%
UK Company XYZ	GICS 40 - Financials	BB	$16	1.2%

Lagged One Month Behind Total Return

Using the information in Exhibit A1-28 to calculate a market-cap-weighted index return for June 2017 for a portfolio comprised of Companies ABC and XYZ is accomplished as follows:

((USD 80 x 5.3%) + (USD 16 x 1.2%)) / (USD 80 + USD 16) = 4.6%

The market-cap-weighted index return (4.6%) looks more like Company ABC's return (5.3%) than Company XYZ's return (1.2%) because Company ABC's market cap is significantly larger (USD 80 million) than Company ABC's market cap (USD 16 million), so Company ABC carries more weight in the weighted average calculation.

[186] The Kroll ESG Returns Study uses market capitalization and total return data expressed in U.S. dollars, regardless of companies' country affiliation to: (i) simplify the analysis and (ii) aid in comparing results across regions and countries.

Appendix 2: Countries/Markets Included in the Study

Companies located in the following 118 countries and markets were included in at least some of the months analyzed during the 2013–2021 period:

Country/Market			
Argentina	France	Malawi	Serbia
Australia	Gabon	Malaysia	Singapore
Austria	Georgia	Mali	Slovakia
Bahamas	Germany	Malta	Slovenia
Bahrain	Ghana	Mauritius	South Africa
Bangladesh	Gibraltar	Mexico	South Korea
Belgium	Greece	Monaco	Spain
Benin	Guernsey	Mongolia	Sri Lanka
Bermuda	Hong Kong SAR	Morocco	Sweden
Bolivia	Hungary	Namibia	Switzerland
Bosnia & Herzegovina	Iceland	Netherlands	Taiwan
Botswana	India	New Zealand	Tanzania
Brazil	Indonesia	Niger	Thailand
Bulgaria	Ireland	Nigeria	Togo
Burkina Faso	Isle Of Man	Norway	Trinidad & Tobago
Canada	Israel	Oman	Tunisia
Cayman Islands	Italy	Pakistan	Turkey
Chile	Jamaica	Palestine	Uganda
China	Japan	Panama	Ukraine
Colombia	Jersey	Papua New Guinea	United Arab Emirates
Costa Rica	Jordan	Peru	United Kingdom
Cote d'Ivoire	Kazakhstan	Philippines	United States
Croatia	Kenya	Poland	Uruguay
Cyprus	Kuwait	Portugal	Venezuela
Czech Republic	Lebanon	Puerto Rico	Vietnam
Denmark	Liechtenstein	Qatar	Virgin Islands, British
Egypt	Lithuania	Romania	Virgin Islands, U.S.
Estonia	Luxembourg	Russia	Zambia
Faroe Islands	Macau SAR	Saudi Arabia	
Finland	Macedonia (North)	Senegal	

References

"*What You Need to Know About Impact Investing*," Global Impact Investing Network (GIIN). Available here: https://thegiin.org/impact-investing/need-to-know/#what-is-impact-investing

"*What is ESG and How Does it Affect Climate Change?*", ESG | The Report. Available here: https://www.esgthereport.com/what-is-esg-and-how-does-it-affect-climate-change/

Rao, Gita, Aaron Krol, "*Investing and Climate Change*," MIT Climate Portal, Available here: https://climate.mit.edu/explainers/investing-and-climate-change

"*The History of Socially Responsible Investing*," Note, November 15, 2019. Available here: https://www.mycnote.com/blog/the-history-of-socially-responsible-investing/

"*What is the difference between ESG investing and socially responsible investing?*", S&P Global, February 25, 2020. Available here: https://www.spglobal.com/en/research-insights/articles/what-is-the-difference-between-esg-investing-and-socially-responsible-investing

Wood, David, "*Roles Foundations Play in Shaping Impact Investing*," Stanford Social Innovation Review, July 13, 2020. Available here: https://ssir.org/articles/entry/roles_foundations_play_in_shaping_impact_investing.

Ogletree, Chris, "*ESG, SRI, and Sustainable Investing: What's the difference?*", April 2, 2021. Available here: https://esg.conservice.com/esg-sri-sustainable-investing-differences/

"*Defining ESG vs. Sustainability – What's the Difference?*", Brightest – This Week in Sustainability, July 29, 2021. Available here: https://www.brightest.io/esg-sustainability-difference#:~:text=ESG%20is%20based%20on%20standards,more%20science%2Dbased%20and%20standardized

"*The key differences between SRI, ESG and impact investing*," PitchBook blog, September 1, 2021. Available here: https://pitchbook.com/blog/what-are-the-differences-between-sri-esg-and-impact-investing

Donovan, William, "*The Origins of Socially Responsible Investing*," The Balance, April 30, 2022. Available here: https://www.thebalancemoney.com/a-short-history-of-socially-responsible-investing-3025578

Pollman, Elizabeth, "*The Making and Meaning of ESG*," October 31, 2022, University of Pennsylvania, Institute for Law & Economics Research Paper No. 22-23, European Corporate Governance Institute – Law Working Paper No. 659/2022. Available at SSRN: https://ssrn.com/abstract=4219857

Foroughi, Jaclyn, "*ESG Is Not Impact Investing and Impact Investing Is Not ESG*," Stanford Social Innovation Review, November 10, 2022. Available here: https://ssir.org/articles/entry/esg_is_not_impact_investing_and_impact_investing_is_not_esg

"*What is values-based investing – and how can it fit into your philanthropic plan*?", Ascent Private Capital Management of U.S. Bank, January 27, 2023. Available here: https://ascent.usbank.com/private-capital-management/ascent-resources-and-insights/investment-strategies/values-based-investing.html

Mason, Lauren, "*What is values-based investing*," OpenInvest, a J.P. Morgan Company, May 16, 2023. Available here: https://www.chase.com/personal/investments/learning-and-insights/article/what-is-values-based-investing

Abbreviations

Abbreviation	Term
CDP	Carbon Disclosure Project (currently, only the CDP abbreviation is used)
CDSB	Climate Disclosure Standards Board
CERES	Coalition of Environmentally Responsible Companies
COP	Conference of Parties
COP21	21st session of the Climate Change Conference of the Parties in Paris in 2015
COP26	26th session of the Climate Change Conference of the Parties in Glasgow in 2021
CSRD	Corporate Sustainability Reporting Directive
EC	European Commission
EFRAG	European Financial Reporting Advisory Group
ESG	Environmental, Social, and Governance
ESRS	European Sustainability Reporting Standards
FSB	Financial Stability Board
GHG	Greenhouse Gas
GICS	Global Industry Classification Standard
GRI	Global Reporting Initiative
IAASB	International Auditing and Assurance Standards Board
IASB	International Accounting Standards Board
IESBA	International Ethics Standards Board for Accountants
IFEA	International Foundation of Ethics and Audit
IIRC	International Integrated Reporting Council
IOSCO	International Organization of Securities Commissions
IPCC	Intergovernmental Panel on Climate Change
IRF	Integrated Reporting Framework
ISSB	International Sustainability Standards Board
PRI	Principles for Responsible Investing
SASB	Sustainability Accounting Standards Board
SBTi	Science Based Targets Initiative
SEC	Securities and Exchange Commission
SFRD	Sustainable Finance Disclosure Regulation
SRI	Socially Responsible Investing
TCFD	Taskforce on Climate-Related Financial Disclosures
UN SGD	United Nations Sustainable Development Goals
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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Kroll's ESG Advisory and Technology Solutions

Creating Value Through Greater ESG Transparency

ESG criteria, regulation and investing across all industries are evolving rapidly to underscore a more sustainable and equitable future for all. As part of this, companies are actively aligning their purpose, strategies and practices to improve the environment, promote social good and create long-term value.

Adding Value to Clients

Kroll is uniquely placed to assist clients when and where it is needed during their ESG journey through our:

- **ESG experience and insights**, built on our strong track record over decades helping clients stay ahead of complex demands related to risk, governance and growth
- **ESG proprietary tools and data**, including cloud-based technology and data collection tools, coupled with our analysis and advice to support clients unlock long-term value and make sustainable decisions
- **Global reach with local expertise**, with over 6,500 experts around the world serving 140 countries creating value and long-term positive impact for clients and communities
- **Independence**, as we do not have an audit practice and are conflict free

Protecting and Creating Value

Kroll provides an extensive range of ESG advisory support and technology solutions to assist clients achieve their ESG goals, delivered through core and complementary services as a standalone engagement or retained service depending on client preferences.

Private equity firms and portfolio companies engage us throughout the transaction and business lifecycles, leveraging our diverse team's global experience and insights from disciplines including valuation, corporate financing and restructuring, regulatory compliance, investigations and disputes.

We help clients to:	
Deliver sustainable growth and improve ESG outcomes	Develop ESG policies and procedures
Effectively manage and reduce risk and volatility	Align goals to standards and frameworks
Embed ESG across governance and processes	Benchmark against peers, industries, countries and ESG momentum
Navigate and comply with regulation and disclosures reporting	

Across 34 countries and territories

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Austin
Bermuda
Bogota
Boston
Buenos Aires
Chicago
Dallas
Ellensburg
Houston
Los Angeles
Mexico City
Morristown
Nashville
New York
Philadelphia
Richardson
San Francisco
Sao Paulo
Seattle
Secaucus
Silicon Valley
Toronto
Washington DC
Waterbury

Caribbean

British Virgin Islands
Cayman Islands

Europe, Middle East and Africa

Abu Dhabi
Agrate Brianza
Amsterdam
Barcelona
Berlin
Bilbao
Birmingham
Brussels
Channel Islands
Dubai
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Frankfurt
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Johannesburg
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Luxembourg
Madrid
Manchester
Milano
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