
Morningstar Sustainability Atlas

Northern Europe set the global standard, along with Hong Kong and Taiwan. The U.S. scores fairly and shows low Carbon Risk.

Morningstar Inc.
April 2020

Valerio Baselli
Senior Editor
+33 (0)1 55 50 13 22
valerio.baselli@morningstar.com

Executive Summary

This report examines the sustainability profiles of Morningstar's 48 country-specific equity indexes. The country indexes, which span developed and emerging markets and represent 97% of global market capitalization, vary significantly across ESG Risk criteria. Through a series of maps, we demonstrate the range of country index scores — including overall Morningstar® Portfolio Sustainability Score™ and its subcomponents: Morningstar Portfolio ESG Risk Exposure Scores and Morningstar ESG Managed Risk Scores. Key company-level drivers are highlighted. We also examine country indexes through the lens of the Morningstar Portfolio Carbon Metrics, including the Morningstar Portfolio Carbon Risk Score™, a forward-looking assessment of companies' vulnerability to the transition away from a fossil-fuel-intensive economy.

Key Takeaways

- ▶ Northern Europe leads the way when it comes to corporate-level sustainability. The Netherlands scores highest, followed by Finland and Sweden.
- ▶ Hong Kong is the world's highest-scoring non-European market for sustainability, thanks to companies like AIA Group. However, the Hong Kong market also shows a fair high Morningstar Carbon Intensity Score.
- ▶ Despite an excellent Morningstar Portfolio ESG Managed Risk Score™, Russia lands at the bottom quintile in terms of sustainability. This is attributable to the extremely high Morningstar ESG Risk Exposure Score, involving key companies like Gazprom and PJSC Lukoil.
- ▶ The United States, for its part, ranks in the second quintile of global sustainability leaders thanks to big names such as Microsoft and Berkshire Hathaway. Despite being the world's second-largest carbon emitter, the U.S. is the only non-European country to rank in the best quintile for carbon risk, along with South Africa.
- ▶ Generally speaking, big Asian markets score poorly on sustainability. Japan and China land in the third quintile and South Korea in the fourth. China Construction Bank Corp, Toyota, Daiichi Sankyo, Samsung, and Celltrion are classified as risky from this point of view.

Introduction

The Morningstar Sustainability Atlas takes a bottom-up approach and discusses the overall sustainability profile of each national equity markets, which are scored based on the companies constituting their equity market indexes. The same methodology that powers the Morningstar Sustainability Rating for funds is applied to assess the sustainability profile of indexes.

The Morningstar Sustainability Rating is a measure of the financially material ESG risks in a portfolio relative to a portfolio's peer group. The rating is an historical holdings-based calculation using the company-level ESG Risk Rating from Sustainalytics, a leading provider of ESG research, which assigns ESG Scores to more than 10,000 companies across the globe, and which has been recently acquired by Morningstar. [Click here to read the official announcement.](#)

Such rating is the result of a three-step process. First, we calculate the Morningstar Portfolio Sustainability Score for every portfolio reported within the trailing 12 months. Second, we use these scores to calculate a portfolio's Morningstar Historical Portfolio Sustainability Score. Third, we assign a Morningstar Sustainability Rating for a portfolio based on its Morningstar Historical Portfolio Sustainability Score relative to its Morningstar Global Category. Additionally, we apply ratings buffers to increase the rating's stability and we make ratings adjustments for portfolios with extreme Morningstar Historical Portfolio Sustainability Scores.

To learn more about the methodology of the Morningstar Sustainability Rating [visit us at this link](#).

As with funds, index Portfolio Sustainability Scores are weighted aggregates of company-level scores. Unlike funds, indexes do not receive a Morningstar Sustainability Rating, which compares portfolio holdings' ESG profiles with those of Morningstar Global Category peers using a 1- to 5-globe system. Indexes do, however, receive raw scores, which comprise both Morningstar Portfolio ESG Risk Exposure Scores and Morningstar ESG Managed Risk Scores.

This report will review the sustainability profiles of Morningstar's entire suite of global equity indexes. The 48 indexes are all members of the Morningstar Global Markets IndexSM, including both developed and emerging markets. Portfolio Sustainability Scores can be calculated only if more than 67% of market capitalization is covered with ESG Scores. Coverage exceeds this threshold in the case of all Morningstar country indexes. Peru has the lowest coverage, with 87% of its index weight carrying ESG Risk Scores.

Starting in 2018, the Sustainability Atlas includes the Morningstar Portfolio Carbon Metrics, which allow investors to analyze the degree to which portfolio holdings are aligned with the transition to a low-carbon economy and subject to risks from climate change. The highest-scoring funds earn the Morningstar Low Carbon DesignationTM, based on 12 months of portfolio history. This edition of the Sustainability Atlas examines country indexes on two metrics: Carbon Intensity and Carbon Risk. Carbon Intensity measures a portfolio's carbon footprint by gauging greenhouse-gas emissions per millions of dollars of revenue. Carbon Risk relies on Sustainalytics' assessment of the degree to which corporate value is at risk from climate change and the shift away from fossil fuels. So, Carbon Intensity provides the current picture, while Carbon Risk is forward-looking.

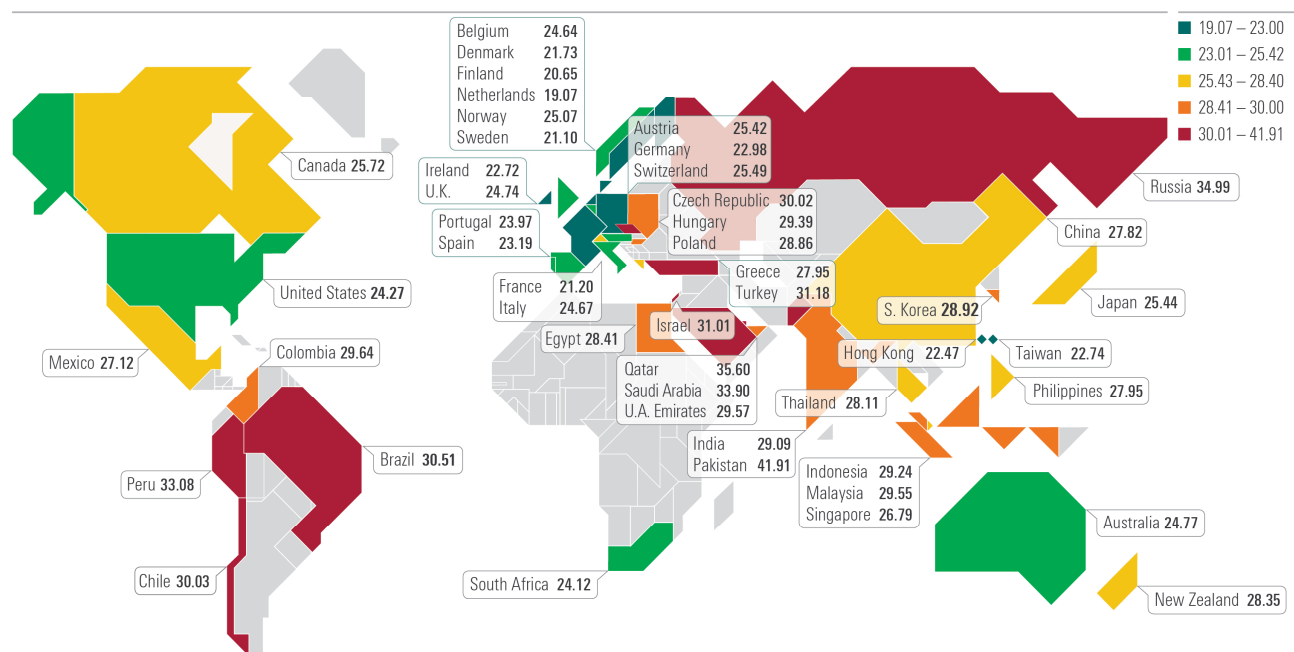
Map of Morningstar Country Indexes' Portfolio Sustainability Scores

The Morningstar Portfolio Sustainability Score is an asset-weighted average of Sustainalytics' company-level ESG Risk Rating, measuring the degree to which a company's economic value may be at risk driven by ESG issues.

Northern European countries hold the title of most virtuous global sustainability leaders. The Netherlands has the world's most sustainable stock market, thanks to holdings like information services company Wolters Kluwer, and above all ASML Holding, the biggest constituent of the benchmark, an ESG leader among semiconductor equipment producers. Finland ranks second thanks to companies such as Nokia, a leader within the global technology hardware industry, and Kone, another leader in the industrial machinery sector. Sweden's high score owes to index constituents like Ericsson and the financial company Investor AB. The latter in particular shows a very negligible risk of experiencing material financial impacts from ESG factors.

Hong Kong is the most sustainable non-European market. According to Sustainalytics, insurance company AIA Group combines low risk exposure with strong management. Taiwan also lands in the first quintile in terms of sustainability, thanks to the big role played by Taiwan Semiconductor Manufacturing, a global ESG leader. The U.S. ranks 13th out of 48. On one hand, companies like Microsoft, Berkshire Hathaway, or Visa are considered leaders from a sustainability point of view; on the other hand, the level of ESG risks faced by big names as Amazon, Facebook, and Johnson & Johnson is classified as "high." A group of Middle Eastern, Latin American, and Eastern European emerging markets, including Russia and Brazil, occupy the globe's bottom quintile. Israel stands out as a developed market among this group of laggards.

Exhibit 1 Map of Morningstar Country Indexes' Portfolio Sustainability Scores



Source: Morningstar Direct. Data as of March 31, 2020.

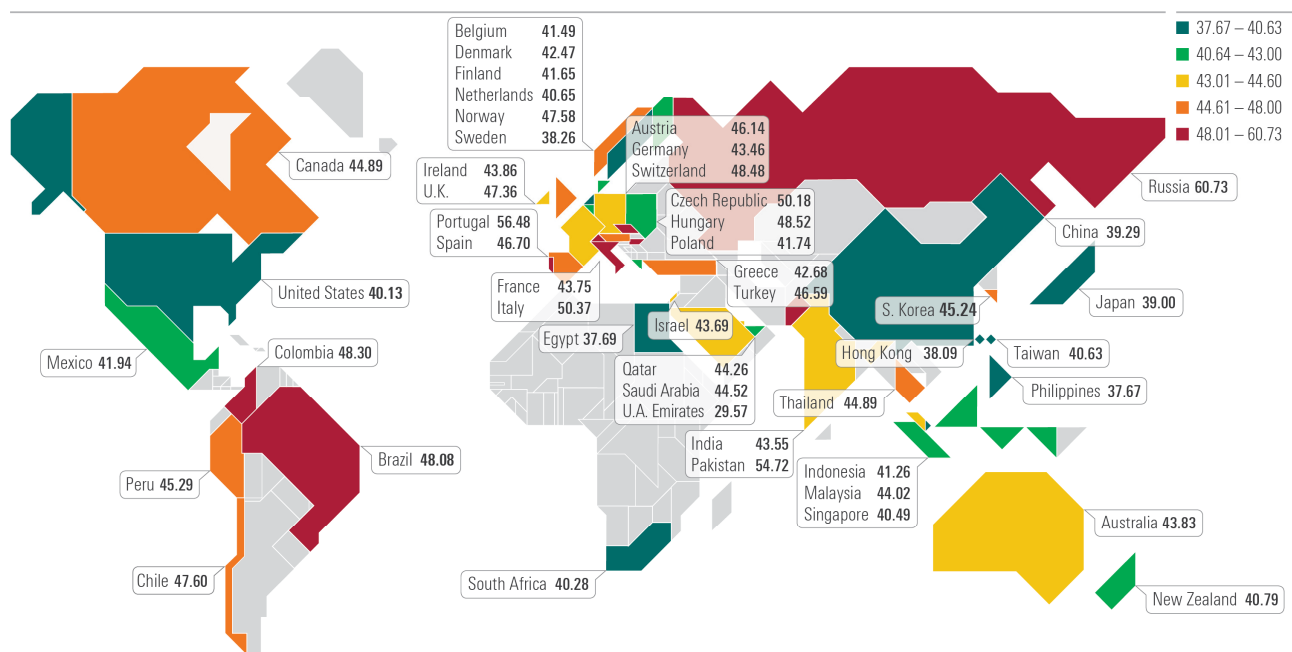
Map of Morningstar Country Indexes' Portfolio ESG Risk Exposure Scores

Portfolio ESG Risk Exposure Scores can be considered a set of ESG-related factors that pose potential economic risks for companies. Material ESG issues and their exposure scores are assessed at the subindustry level and then refined at the company level. Companies in different industries have different sets of material ESG risks, and those risks have different weightings. In the integrated oil and gas industry, for example, greenhouse-gas emissions, other emissions, effluents and waste from operations, management of human capital, community relations, and bribery and corruption issues have been identified by Sustainalytics as the key material ESG risks. By contrast, in the enterprise and infrastructure software industry the most important material ESG risks include data privacy and security issues, management of human capital, and corporate governance.

The top quintile sees only one European country: Sweden, in fourth place. Philippines and Egypt are in the top position, followed by Hong Kong. This is because of the heavy weighting of banks, telecoms, and property companies that dominate those indexes. China and the U.S. score well. Alibaba and Tencent, the two biggest constituents of the Chinese benchmark, show a medium overall exposure, similar to the subindustry average. Within the American index, important companies like Microsoft or Berkshire Hathaway have a low overall exposure to ESG risks.

At the same time, some Latin American and Eastern European markets like Brazil, Colombia, Czech Republic, and Hungary occupy the bottom quintile along with some developed markets such as Switzerland, Italy, and Portugal, owing to their indexes' strong exposure to the utilities and energy sectors.

Exhibit 2 Map of Morningstar Country Indexes' Portfolio ESG Risk Exposure Scores



Source: Morningstar Direct. Data as of March 31, 2020.

Map of Morningstar Country Indexes' Portfolio ESG Managed Risk Score

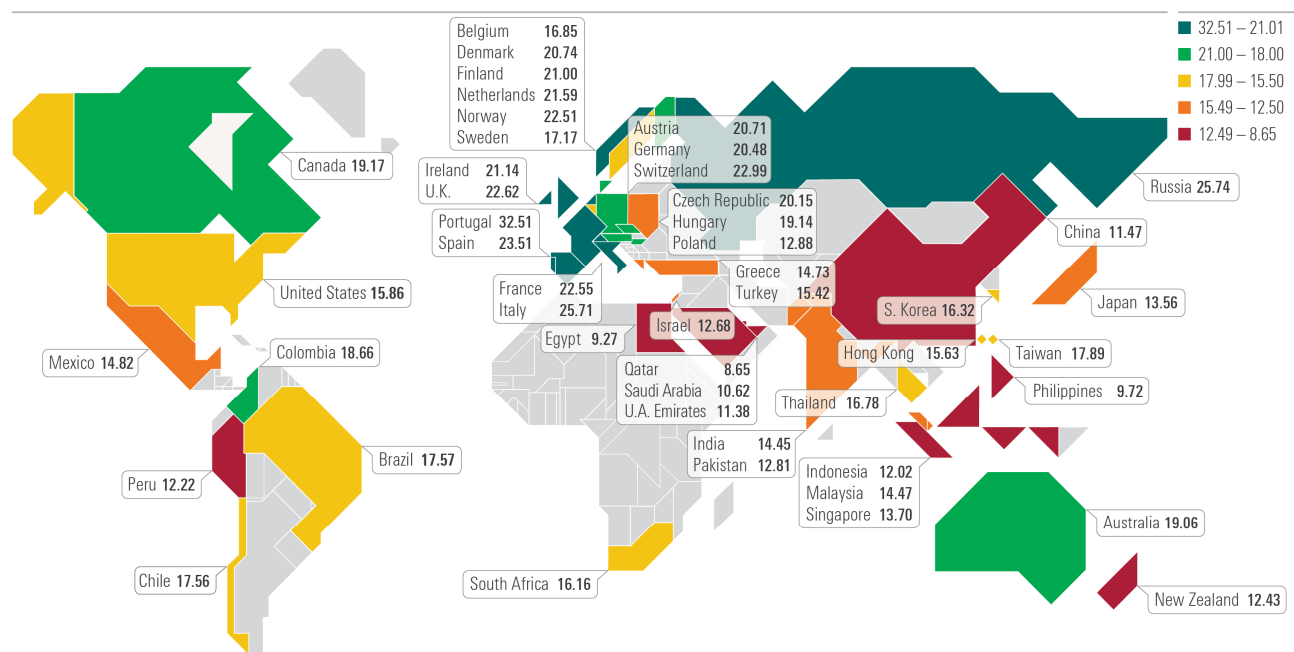
Sustainalytics defines ESG Managed Risk Score as a set of company commitments, actions, and outcomes that demonstrate how well a company is managing the ESG risks it is exposed to. The overall management score for a company is derived from a set of management indicators (policies, management systems, certifications, and so on) and outcome-focused indicators. Outcome-focused indicators measure management performance either directly in quantitative terms (for example, CO2 emissions) or via a company's involvement in controversies.

The report ranks national equity markets according to such criteria. Portugal and Russia score highest, but the strong exposure they show towards ESG risks lowers their overall Portfolio Sustainability Scores, so that they come in much lower — at 11th and 46th, respectively — on that rating scale.

The same is true for Italy, which ranks third on ESG Managed Risk but slips to 15th place for overall Portfolio Sustainability Score, owing to the high exposure to material ESG issues involving key companies like Enel and Eni. Enel's energy mix, for example, still contains significant (26%) coal generation, which will likely face reduced profitability as carbon pricing schemes continue to strengthen and expand globally. At the same time, Enel's disclosure on environmental and social issues is strong and the company produces independently assured reports in compliance with accepted disclosure standards.

On the other side of the spectrum, emerging markets tend to lack this kind of risk management. The bottom quintile includes China. The main issue here is poor corporate governance, with companies like Alibaba, JD.com, and Tencent underperforming their peers.

Exhibit 3 Map of Morningstar Country Indexes' Portfolio ESG Managed Risk Score



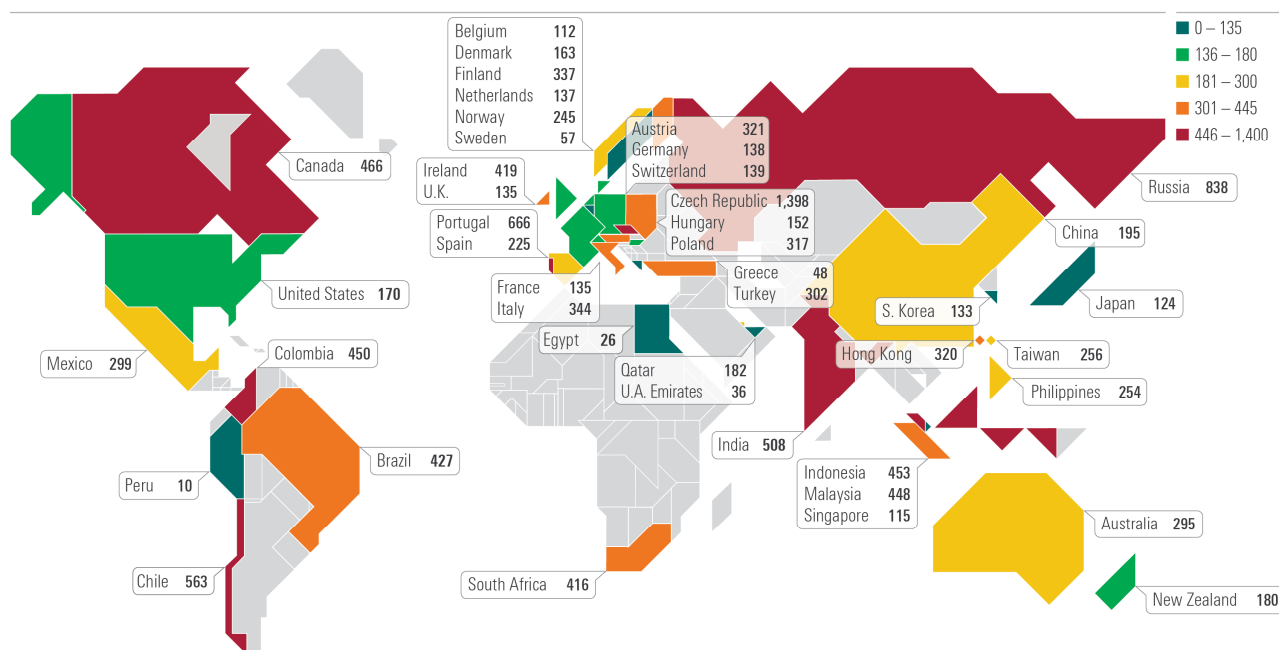
Map of Morningstar Country Indexes' Carbon Intensity Scores

Morningstar Portfolio Carbon Metrics, available in Morningstar Direct since May 2018, allow investors to examine the environmental impact and the risks posed to their portfolios by climate change. Top-scoring funds receive the Morningstar Low Carbon Designation, which indicates that the companies held in a portfolio are in general alignment with the transition to the lower-carbon economy required to meet the goals of the Paris Agreement. Portfolio-level Carbon Metrics for indexes are weighted averages of their holdings.

Carbon Intensity measures a portfolio's carbon footprint by aggregating the Carbon Intensity scores of each holding on a weighted basis. To compute it, Sustainalytics looks at companies' total greenhouse gas emissions per millions of dollars of revenue.

The world's least-carbon-intensive equity markets include Peru, Egypt, and United Arab Emirates, owing to the small carbon footprints of the banks, telecoms, and property companies that dominate those indexes. Most Western European markets have low carbon footprints relative to the sizes of their businesses, with Greece scoring the best, followed by Sweden and Belgium. Developed Asian markets Singapore, Japan, and South Korea also score well. The U.S. and United Kingdom score fairly well given the size of their economies. The most-carbon-intensive country is the Czech Republic, given that utilities company CEZ accounts for 46% of its index. Russia's fossil-fuel-heavy economy also looks carbon-intensive at the corporate level.

Exhibit 4 Map of Morningstar Country Indexes' Carbon Intensity Scores



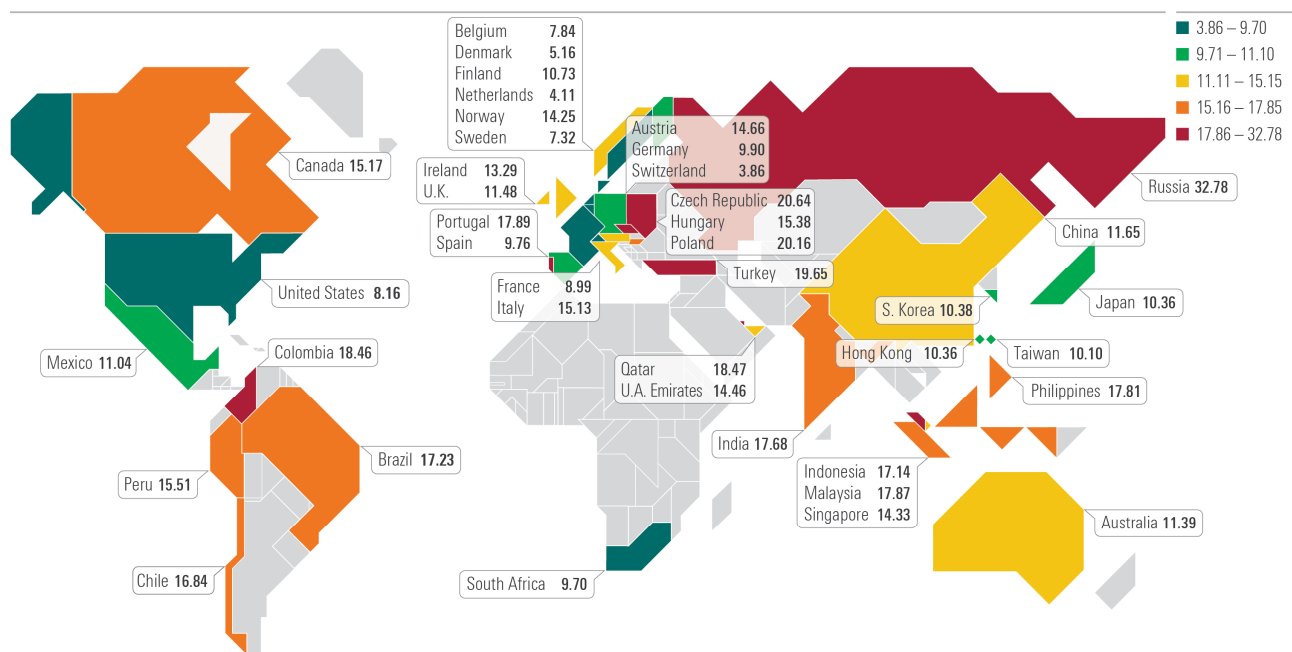
Source: Morningstar Direct. Data as of March 31, 2020.

Map of Morningstar Country Indexes' Carbon Risk Scores

Carbon Risk assesses the degree to which corporate value is at risk from the transition to a low-carbon economy. Companies with low levels of Carbon Risk, as assessed by Sustainalytics, are best poised to survive and thrive as the world moves away from fossil fuels, as they can face a range of carbon-related risks. Climate change might threaten their physical assets or their business model. They may be affected by policy or regulation aimed at lowering greenhouse-gas emissions, their fossil-fuel assets may be stranded, or changing popular perception may damage their brand. Certain economic sectors are inherently risky. As with sustainability, 67% of an index's weight must be covered by Sustainalytics for portfolio-level Carbon Metrics to be calculated. Seven markets had insufficient constituent-level coverage to be included: Israel, New Zealand, Greece, Pakistan, Saudi Arabia, Egypt, and Thailand.

Western European markets like Switzerland, the Netherlands, Denmark, Sweden, Belgium, and France carry the lowest levels of Carbon Risk, as do South Africa and the U.S. As a matter of fact, despite being the world's second-largest carbon emitter, a low level of the American stock market value is at risk from the transition to a low-carbon economy. This owes to the fact that healthcare and technology companies represent more than 37% of U.S. equity market cap, and financials stocks account for almost 14%; on the other hand, energy is around 2.5%. On the flip side is Russia, with nearly 55% of its market cap in energy stocks and consequently the world's highest level of Carbon Risk. Also carrying significant Carbon Risk are energy-heavy markets Poland and Czech Republic. Canadian companies are doing a good job managing Carbon Risk, given that market's fairly high level of Carbon Intensity. By contrast, Singapore, Peru, and the UAE post low Carbon Intensity scores but look riskier on a forward-looking basis.

Exhibit 5 Map of Morningstar Country Indexes' Carbon Risk Scores



Source: Morningstar Direct. Data as of March 31, 2020.

About Morningstar, Inc.

Morningstar, Inc. is a leading provider of independent investment research in North America, Europe, Australia, and Asia. The company offers an extensive line of products and services for individual investors, financial advisors, asset managers, retirement plan providers and sponsors, and institutional investors in the private capital markets. Morningstar provides data and research insights on a wide range of investment offerings, including managed investments, publicly listed companies, private capital markets, and real-time global market data. Morningstar also offers investment management services through its investment advisory subsidiaries. The company has operations in 27 countries.

To learn more about Sustainable Investing and Low Carbon designation, visit:

<http://www.morningstar.com/company/sustainability>

To learn more about Morningstar Indexes, visit:

<http://indexes.morningstar.com>



22 West Washington
Chicago, IL
60602

©2020 Morningstar Inc. All rights reserved.