

Timeline Conference

Vanguard: The ESG data conundrum

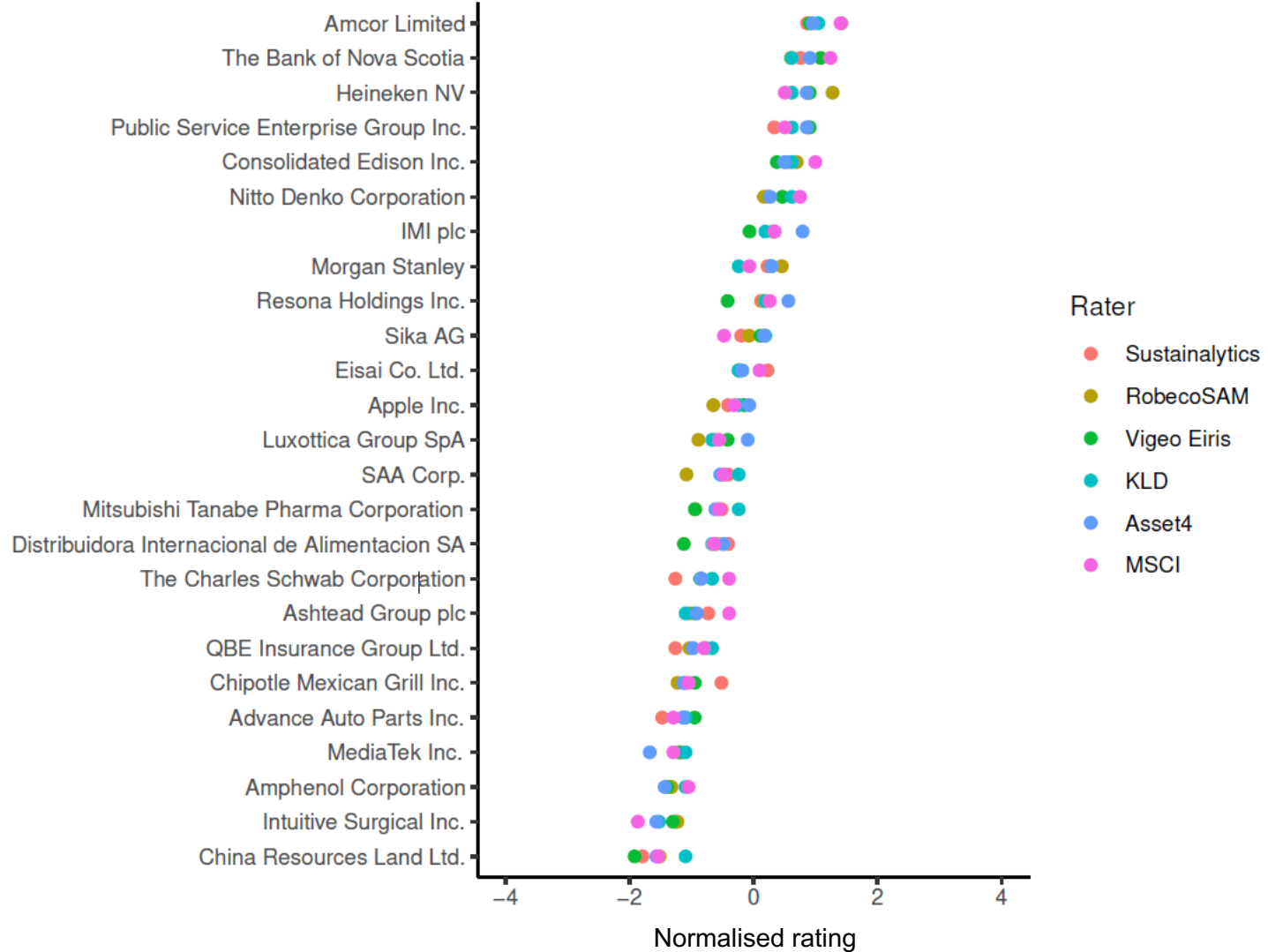
May 2023

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Agenda

- **ESG data challenges**
- **What do the ratings measure**
- **Vanguards ESG investing framework**

Securities with a low level of dispersion or rating disagreement



Securities with a high level of dispersion or rating disagreement



What do ESG ratings measure?



Vanguard's ESG investing framework

We use engagement and integration to factor ESG into what we offer



Engage

Various teams engage directly with the companies held in Vanguard's funds to discuss how they're managing material ESG risks. This includes Vanguard's own global Investment Stewardship teams that represent our investors' interests in Vanguard's internally managed equity funds and ETFs. The Investment Stewardship teams engage with companies on an ongoing basis, and when concerns arise, the team address them through continued engagement and proxy voting¹.



Integrate

Our active fund investment managers work to integrate ESG considerations into their investment processes, alongside other financially material considerations. This careful analysis gives managers a more complete picture of a security's risks and opportunities.

We offer investors ESG products using avoid and/or allocate approaches



Avoid

For investors who want to avoid or reduce exposure to companies involved in certain business activities, we offer broadly diversified, transparent exclusionary funds. These funds are built to filter out certain sectors or industries, like tobacco, fossil fuels or weapons.



Allocate

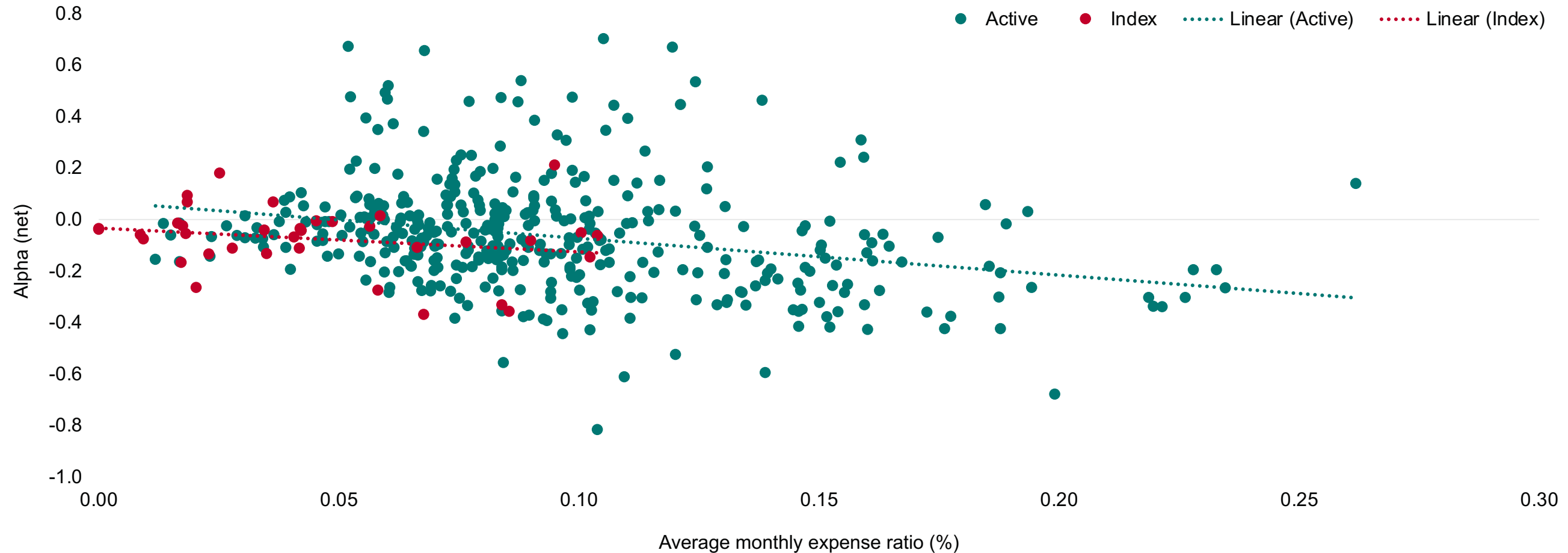
For investors who are looking for outperformance from ESG investments, our strategy involves low-cost actively managed products that carefully allocate capital to companies with leading or improving ESG practices. We work with top-quality active managers—such as Wellington—who we believe demonstrates leadership in ESG investing².

¹ Shareholders can vote by proxy on the issues which affect a company's financials even when they are unable to attend a shareholder meeting in person.

² We look to the managers of our active funds to assess companies' ESG risks on a case-by-case basis. For more on Vanguard's oversight of external advisers, see Vanguard's approach to ESG: https://www.vanguard.co.uk/content/dam/intl/europe/documents/en/our-approach-to-esg__uk-pro.pdf

Higher ESG fund management expenses tend to be associated with lower net alpha

Expense ratio vs. net alpha for ESG active and index funds – 2007–2021



Past performance is not a reliable indicator of future results.

Source: Vanguard calculations based on data from Morningstar, Inc.

Note: Alphas are based on monthly fund net returns over the risk-free rate measured using the Fama and French (2015) five-factor model. Returns are calculated in USD based on NAVs with income reinvested. Monthly expense ratios are calculated as average of the difference between gross and net returns. Included funds: index funds, active funds with US investment focus that are classified as 'ESG incorporation' funds by Morningstar. The exhibit includes data from three five-year periods: 1 January 2007 to 31 December 2011, 1 January 2012 to 31 December 2016 and from 1 January 2017 to 30 November 2021.

Investment risk information

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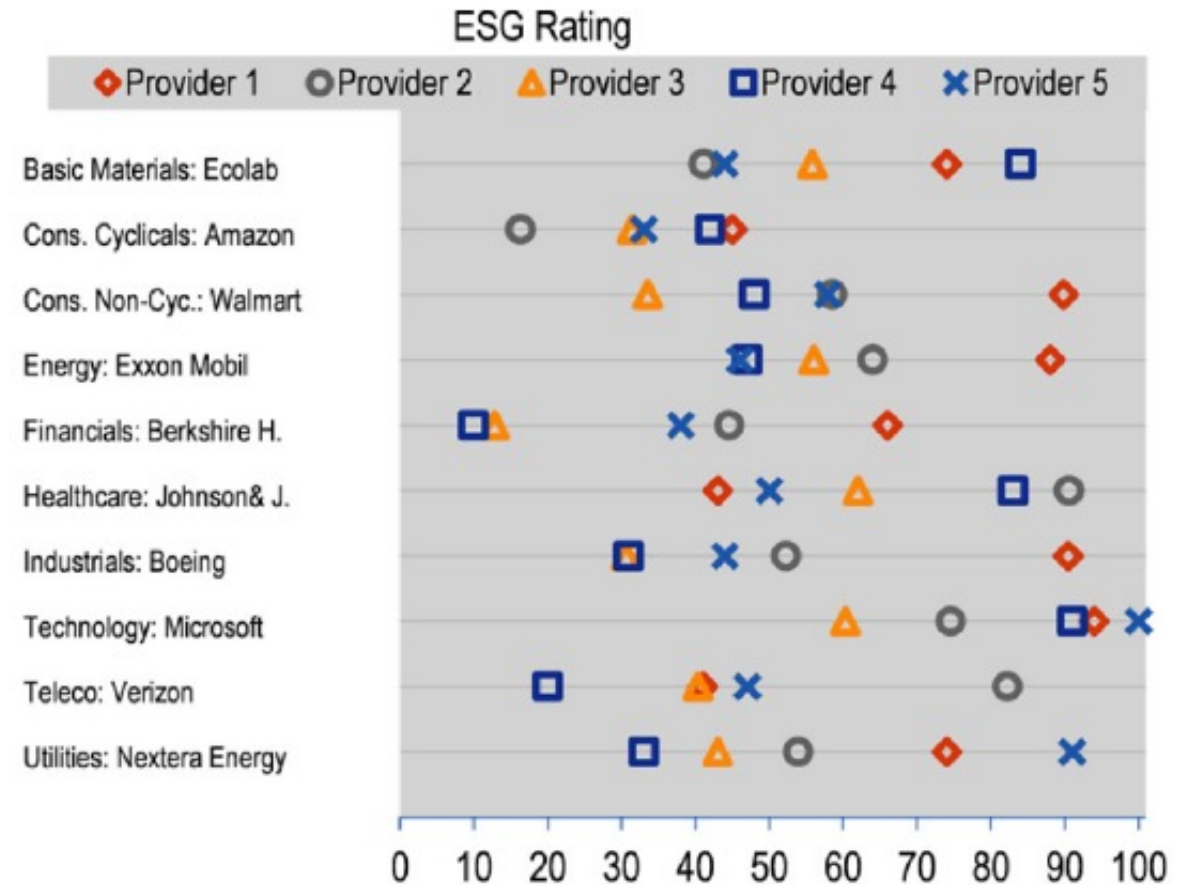
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Appendix

Where is the consistency? Selected US sector issuer credit ratings vs ESG ratings

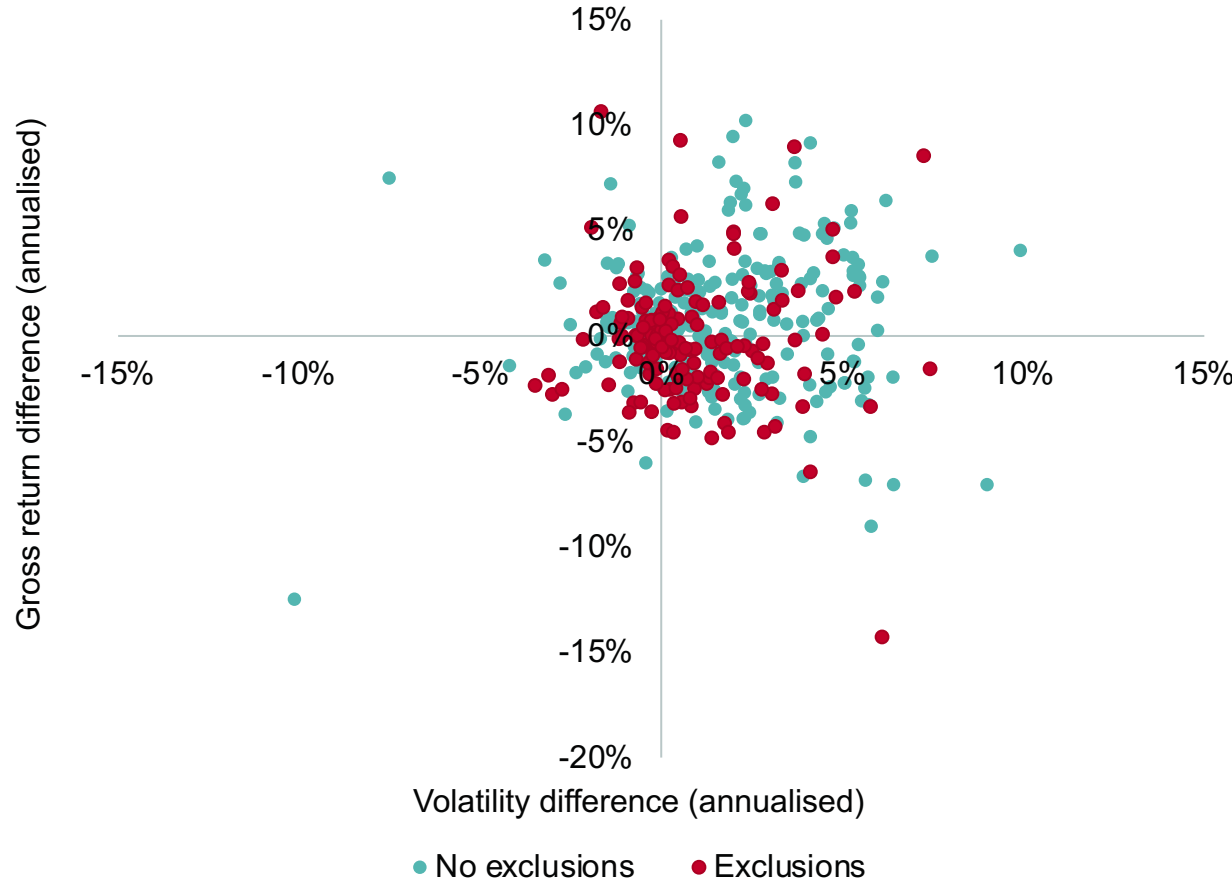


Risk and returns for ESG funds are highly dispersed

Index vs. active (excess returns)



Exclusion-based vs. non-exclusion-based (excess returns)



Past performance is not a reliable indicator of future results.
 Notes: The data points reflect the annualised 5-year standard deviation and gross return of each fund minus the broad US equity market as proxied by the FTSE USA All Cap Index. ESG fund categories include: index funds, active funds, exclusion-based and non-exclusion-based. The figures include data of three five-year periods: 2004 to 2008, 2009 to 2013 and from 2014 to 2018. Returns are calculated in USD based on NAVs **with income invested.**
 Sources: Vanguard calculations based on data from Morningstar, Inc. Journal of Portfolio Management Vol 46 Issue 3 Ethical Investing 2020.



Unique holdings, largest exposures

FTSE Developed All Cap Choice

Top 20 (or less) unique holdings	Country	ICB Industry	GICS Sector	Market cap (USD bn)	Weight in index (%)
Apple Inc.	United States	TE	IT	1,950.9	4.42
Amazon.com, Inc.	United States	CD	CD	745.9	1.69
UnitedHealth Group Incorporated	United States	HC	HC	495.4	1.12
JPMorgan Chase & Co.	United States	FN	FN	390.8	0.89
Nestle S.A.	Switzerland	CS	CS	312.0	0.71
Pfizer Inc.	United States	HC	HC	289.3	0.66
AbbVie, Inc.	United States	HC	HC	285.3	0.65
Meta Platforms Inc. Class A	United States	TE	CM	270.3	0.61
Bank of America Corp	United States	FN	FN	232.4	0.53
Broadcom Inc.	United States	TE	IT	220.6	0.50
Samsung Electronics Co., Ltd.	Korea	TE	IT	206.8	0.47
Costco Wholesale Corporation	United States	CD	CS	201.9	0.46
Abbott Laboratories	United States	HC	HC	188.1	0.43
Novartis AG	Switzerland	HC	HC	182.4	0.41
Danaher Corporation	United States	HC	HC	171.6	0.39
Toyota Motor Corp.	Japan	CD	CD	166.5	0.38
Comcast Corporation Class A	United States	TC	CM	149.9	0.34
Royal Bank of Canada	Canada	FN	FN	131.7	0.30
AT&T Inc.	United States	TC	CM	131.7	0.30
Netflix, Inc.	United States	CD	CM	129.0	0.29
Total				6,852.5	15.55

MSCI World ESG Leaders

Top 20 (or less) unique holdings	Country	ICB Industry	GICS Sector	Market cap (USD bn)	Weight in index (%)
Johnson & Johnson	United States	HC	HC	464.4	1.86
LVMH Moet Hennessy Louis Vuitton SE	France	CD	CD	200.8	0.80
TotalEnergies SE	France	EN	EN	155.7	0.62
International Business Machines Corporation	United States	TE	IT	127.2	0.51
HSBC Holdings Plc	United Kingdom	FN	FN	123.9	0.50
Enbridge Inc.	Canada	EN	EN	79.1	0.32
Schneider Electric SE	France	ID	ID	75.7	0.30
Schlumberger NV	United States	EN	EN	75.6	0.30
Air Liquide SA	France	BM	MT	73.9	0.30
Iberdrola SA	Spain	UT	UT	70.5	0.28
Compagnie Financiere Richemont SA	Switzerland	CD	CD	67.6	0.27
3M Company	United States	ID	ID	66.4	0.27
Eaton Corp. Plc	United States	ID	ID	62.5	0.25
Marathon Petroleum Corporation	United States	EN	EN	58.0	0.23
Norfolk Southern Corporation	United States	ID	ID	57.9	0.23
Phillips 66	United States	EN	EN	50.1	0.20
Valero Energy Corporation	United States	EN	EN	50.0	0.20
Sempra Energy	United States	UT	UT	48.6	0.19
ABB Ltd.	Switzerland	ID	ID	47.7	0.19
Roper Technologies, Inc.	United States	TE	IT	45.8	0.18
Total				2,001.5	8.00

Source: FactSet. Data as of 30 December 2022.

Note: market cap is float adjusted and based on the index provider's proprietary calculation methodology which between indices may result in different market caps for the same security. Unique stocks refer to securities held in one index and not in the other and may include securities differentiated by primary listing and not by the underlying issuer. See the Appendix for details of ICB Industry and GICS Sector abbreviations.