Article
ESG

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ESG Scoring Providers and Implications for Portfolio Construction

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> "There are things known and there are things unknown, and in between are the doors of perception."
>
> — Aldous Huxley

In this paper, we analyze how an investor's choice of environmental, social and governance (ESG) data provider can impact some of the major drivers of portfolio returns. Our goals are to showcase how different — or similar — portfolios can be, based on the selection of an ESG data provider, and to understand how limiting tracking error against a benchmark can impact the analysis. We also look closely at the relative tracking error *between* the three data providers used in our analysis.

To perform our analysis, we constructed ESG portfolios using three distinct data providers and then compared the attributes of each. Our results show that the choice of data provider does impact a broad range of important portfolio characteristics — even when comparing portfolios with similar levels of tracking error versus the benchmark. We hope that our findings will help investors gain insight into the inherent trade-offs in selecting a particular provider.

Exploring Our Tracking Error Premise

MIT researchers found that the correlation between ESG ratings from different data providers is quite low, at 0.61. This lags a 0.92 correlation between overall corporate credit ratings from Moody's Investors Service and Standard & Poor's Global Ratings. The researchers noted that, "This ambiguity around ESG ratings creates acute challenges for investors trying to achieve both financial and social returns."[1] In addition, a 2017 study from State Street Global Advisors found that in aggregate, ESG scores' correlation ranged from 0.47 to 0.76 (Figure 1).[2]

Figure 1
ESG Scores Have Low Correlation Across Data Providers
Cross-sectional Correlation for Constituents of the MSCI World Index, June 30, 2017.

	Sustainalytics	MSCI	RobecoSAM	Bloomberg ESG
Sustainalytics	1.00	0.53	0.76	0.66
MSCI	—	1.00	0.48	0.47
RobecoSAM	—	—	1.00	0.68
Bloomberg ESG	—	—	—	1.00

Source: Bender, Jennifer and Bridges, Todd Arthur and He, Chen and Lester, Anna and Sun, Xiaole, A Blueprint for Integrating ESG into Equity Portfolios (October 1, 2017). The Journal of Investment Management, Volume 16, No. 1, 2018, Available at SSRN.

These ratings discrepancies have profound consequences when constructing ESG portfolios. The low correlation between ESG data providers is well known and understood, but we took a step further. Few studies analyze the portfolio-level impact of using ESG ratings from different providers while limiting the tracking error against a benchmark.

We restricted the tracking error in our sample portfolios — also known as making them "risk-aware" — because we wanted to test the following thesis: At low levels of active risk (e.g., 50 basis points, or bps), using data from different ESG providers should not greatly change the characteristics of our portfolios. We surmised that a low tracking error limit would prevent any sizeable deviations due to the provider choice. On the other hand, we surmised that the discrepancies might become more visible at higher levels of tracking error (e.g., 100 bps). It turned out that our test results did not support this thesis. Even at low levels of tracking error, the portfolios diverged considerably in their risk profiles, holdings and other attributes.

Constructing Our Sample ESG Portfolios

We constructed six ESG risk-aware portfolios and ran mean-variance optimizations to maximize the ESG score (or, for one provider, to minimize it).[3] We used three different ESG scoring data sets and optimized each with two levels of tracking error (50 bps and 100 bps) versus the S&P 500 Index (the Index). We also applied a selection of our standard diversification constraints, including relative maximum/minimum active sector deviation, individual stock maximum/minimum absolute and relative deviations, and liquidity thresholds. Finally, we assumed that the assets under management for each portfolio was USD $500 million.

In this paper, we present only the US results because when we conducted the same analysis for global portfolios, the results were nearly identical.

The chosen data sets were the State Street Global Advisors proprietary Responsibility Factor (R-Factor™) score (see: Inflation Reduction Act: Impact on Energy Transition); MSCI ESG Ratings; and Sustainalytics ESG Risk Ratings.

The Choice of ESG Data Provider Matters Greatly

Our data revealed that portfolios built using data from different providers have sizable tracking error between them — specifically, the active risk between the six portfolios is elevated (Figure 2). For example, if we optimize a portfolio using R-Factor™ ESG scoring and employ 50 bps ex-ante tracking error versus the Index, and compare it with a portfolio using MSCI ESG data and the same level of tracking error, we find that these two portfolios have 58 bps of tracking error between them. The same R-Factor™ portfolio compared with a portfolio using Sustainalytics ESG data would have 63 bps of tracking error. Our data indicates that even with a 50 bps tracking error limit, investors need to be acutely aware of the ESG source behind the portfolio construction process, as it will greatly impact portfolio behavior — particularly over the short term.

Figure 2
Tracking Error Between Data Providers is Meaningful

		R-Factor™	R-Factor™	MSCI	MSCI	Sustainalytics	Sustainalytics
	Tracking Error	**50bps**	**100bps**	**50bps**	**100bps**	**50bps**	**100bps**
R-Factor	50bps	—	0.59	0.58	0.99	0.63	1.03
R-Factor	100bps	—	—	1	1.22	1.01	1.25
MSCI	50bps	—	—	—	0.57	0.61	1.01
MSCI	100bps	—	—	—	—	0.99	1.21
Sustainalytics	50bps	—	—	—	—	—	0.56
Sustainalytics	100bps	—	—	—	—	—	—

Source: State Street Global Advisors, as of June 30, 2022.

In addition, when we analyzed the top holdings by Index market capitalization, we observed substantial differences between sample portfolios (Figure 3).

Figure 3
Top Holdings Vary Widely Across Sample Portfolios
S&P 500 Top 10 Holdings; Active Weights Per Strategy

Symbol	R-Factor™	R-Factor™	MSCI	MSCI	Sustainalytics	Sustainalytics
Tracking Error	**50bps**	**100bps**	**50bps**	**100bps**	**50bps**	**100bps**
Apple Inc.	0.25	0.56	-0.11	-0.34	-0.03	-0.04
Microsoft Corp.	0.16	0.33	0.32	0.86	0.14	0.35
Amazon Com Inc.	-0.05	-0.12	-0.03	-0.07	-0.13	-0.33
Alphabet Inc.	0.11	0.27	-0.03	0.15	-0.10	-0.13
Tesla Inc.	-0.05	-0.14	0.06	0.07	-0.04	-0.15
Berkshire Hathaway	-1.55	-1.55	-0.75	-1.55	0.53	1.08
Unitedhealth Group	-0.25	-0.82	-0.03	-0.10	0.08	0.14
Johnson & Johnson	0.30	0.81	-0.23	-0.65	-0.14	-0.34
Nvidia Corporation	0.16	0.42	0.19	0.48	0.15	0.30
Meta Platforms Inc.	0.06	0.16	-0.20	-0.48	-0.18	-0.44

Source: State Street Global Advisors, as of June 30, 2022.

But Some Trends Exist Regardless of Data Provider

At the same time, we observed that all of the sample portfolios had certain commonalities. The use of ESG scores from all providers tends to influence sector and security concentrations in similar ways. To begin with, when we looked at the Axioma-style factor exposures for our sample portfolios, we saw that for the most part, each of the active factor bets was either all negative or all positive, across the board (Figure 4). Investors, however, should be aware that most of the tracking error is stock specific rather than stemming from factor risks, so these style tilts have low explanatory power. Nevertheless, we believe it is relevant to highlight these. Additionally, Figure 4 illustrates that we tended to see lower exposure to beta (market sensitivity) and the volatility factor, and positive exposure to large caps (positive size) and dividend yield, regardless of which ESG scoring system we employed.

Figure 4
Commonalities Emerge When Comparing Factor Tilts

Style Factor	R-Factor™	R-Factor™	MSCI	MSCI	Sustainalytics	Sustainalytics
Tracking Error	**50bp**	**100bps**	**50bp**	**100bps**	**50bp**	**100bps**
	Axioma Active Style Factor Tilts					
Market Sensitivity	-7.10	-6.90	-7.50	-7.30	-7.40	-6.90
Volatility	-5.80	-7.10	-5.60	-6.40	-6.50	-8.30
Value	-5.10	-4.90	-6.50	-6.80	-5.20	-6.00
Liquidity	-4.60	-3.30	-4.80	-3.40	-5.80	-5.40
Growth	-4.10	-5.90	-2.10	-3.10	-3.50	-4.90
Leverage	0.50	0.70	-1.00	-2.60	-1.90	-2.30
Earnings Yield	2.70	3.20	2.50	2.40	2.20	1.90
Medium-Term Momentum	4.00	3.00	3.30	2.40	3.40	2.60
MidCap	4.40	5.20	4.90	5.50	5.60	6.90
Exchange Rate Sensitivity	7.40	8.10	8.40	8.30	6.80	5.70
Profitability	8.40	7.90	9.20	8.90	9.10	9.20
Dividend Yield	10.50	13.20	7.10	9.80	6.10	4.60
Size	14.80	14.50	12.90	10.30	12.80	10.30

Source: State Street Global Advisors, as of June 30, 2022.

When we reviewed sector allocations, we noted further similarities across sample portfolios, including overweights to information technology and real estate, and underweights to health care (Figure 5). Note that these sector overweights make sense in the context of climate risk (see Climate Data Nuances in Equity Index Portfolios); but, to be sure, for many sectors, we did not see evidence of the same active overweighting or underweighting.

Figure 5
Some Sectors Show Overweights or Underweights For All Portfolios

Sector	R-Factor™	R-Factor™	MSCI	MSCI	Sustainalytics	Sustainalytics
Tracking Error	**50bp (%)**	**100bps (%)**	**50bp (%)**	**100bps (%)**	**50bp (%)**	**100bps (%)**
Information Technology	0.78	1.00	0.99	1.00	1.00	1.00
Health Care	0.02	-0.30	-0.35	-1.00	-0.34	-0.68
Consumer Discretionary	0.19	0.26	-0.30	-0.50	-0.28	-0.57
Financials	-0.91	-0.64	0.05	0.04	0.67	1.00
Communication Services	-0.60	-0.70	-1.00	-1.00	0.13	0.55
Industrials	0.07	-0.44	0.11	0.28	-1.00	-1.00
Consumer Staples	-0.06	-0.08	0.00	0.12	-0.60	-1.00
Energy	0.02	-0.06	0.05	-0.01	0.06	-0.14
Utilities	0.09	-0.18	0.41	0.76	-0.68	-0.98
Real Estate	0.30	0.62	0.23	0.44	1.00	1.00
Materials	0.09	0.51	-0.16	-0.13	0.04	0.82

Source: State Street Global Advisors, as of June 30, 2022.

Summarizing Differences in Potential Return Drivers: ESG Improvements and Risk Profiles

Figure 6 shows a high-level summary of the results of our analysis.

Figure 6
High-Level Summary

Summary Statistic	R-Factor™	MSCI	Sustainalytics	R-Factor™	MSCI	Sustainalytics
Tracking Error	**50bps**	**50bps**	**50bps**	**100bps**	**100bps**	**100bps**
Weighted-Average ESG Scores						
R-Factor™	73.79	70.57	69.74	76.72	71.58	70.12
MSCI	6.68	7.17	6.60	6.80	7.68	6.69
Sustainalytics	20.64	20.64	18.72	20.01	20.09	16.80
% ESG Improvement						
R-Factor™ (%)	7.33	2.65	1.44	11.60	4.12	1.99
MSCI (%)	10.60	18.68	9.22	12.53	27.23	10.78
Sustainalytics (%)	-3.51	-3.50	-12.50	-6.46	-6.07	-21.46
Risk						
Total Risk (%)	22.94	22.93	22.93	22.96	22.90	22.94
Predicted Beta (from Model/Benchmark)	1.0007	0.9999	1.0003	1.0005	0.9982	0.9998
Active Risk (%)	0.50	0.50	0.50	1.00	1.00	1.00
Active Factor Risk (%)	0.19	0.17	0.21	0.42	0.37	0.42
Active Specific Risk (%)	0.46	0.47	0.45	0.91	0.93	0.91
Active Share (%)	23.50	23.60	21.80	39.50	40.10	38.50
Portfolio Holdings	304	322	343	192	210	229

Source: State Street Global Advisors, as of June 30, 2022.

Figure 6 shows that ESG improvement versus a benchmark can be lower when a portfolio is constructed with scores from one provider, but then analyzed with scores from a different provider. For example, if we build a portfolio having 50 bps ex-ante tracking error to the benchmark and employing MSCI ESG data, we can achieve a 18.7% ESG improvement over the Index. However, if we were to take that same portfolio and calculate its average R-Factor™ ESG score, we would see only a 2.6% improvement. This outcome is important for investors desiring to obtain a specific percentage of ESG improvement over the benchmark. Investors evaluating their improvement outcomes without further context might draw inaccurate conclusions. For example, if the investor uses R-Factor™ to score a portfolio built with MSCI methodology and 50 bps of tracking error, they might see a small 2.6% improvement and conclude that it is necessary to increase the tracking error limit above 50 bps.

One reason for the divergence between sample portfolios could be that ESG scoring systems were designed using different statistical distribution curve assumptions. For example, R-Factor™ is designed to follow a normal distribution, whereas MSCI's does not follow the same construction rules, and its scores are skewed toward higher nominal values. Therefore, it is "easier" to improve the portfolio's aggregate ESG total score relative to the benchmark when using MSCI ESG scores than when using R-Factor™ or Sustainalytics scores. This would not mean that a portfolio scored using MSCI has a stronger ESG profile than a portfolio scored using R-Factor™, but the uninformed investor might come to that conclusion.

Conclusion

ESG literature has well documented that ESG data providers have substantial variance in their methodology and ratings. These discrepancies between providers can lead to large differences in holdings and risks.

We aimed to uncover the portfolio-level consequences of employing three distinct ESG scoring systems at different levels of tracking error relative to the benchmark. We focused on State Street Global Advisors' R-Factor™, MSCI ESG Ratings and Sustainalytics ESG Ratings. The outcomes of our research relay several key points:

- **We confirmed that names chosen for the portfolios will be highly dependent on the data provider chosen — regardless of the level of ex-ante tracking error versus the parent index.** For our analysis, even when we held all portfolios to 50 bps tracking error relative to the S&P 500 Index, the resulting tracking between portfolios exceeded 50 bps.

- **The ability to improve the overall ESG score relative to the benchmark is very dependent on the ESG scoring system.** The underlying assumptions in the design of the ESG scoring system will impact the amount of the improvement.

- **It is key to analyze ESG portfolios utilizing the same ESG data employed in the portfolio construction.** Constructing the strategies under one scoring system, then analyzing the portfolio against a different data provider's scoring system, can lead investors to draw misleading conclusions.

- **Investors need to consider these data provider methodology differences when comparing the ESG characteristics of their equity portfolios across different managers.** Unless all managers use the same ESG data provider when constructing or evaluating ESG strategies, the comparisons may be not be apples-to-apples. This is true for passive strategies as well as active ones.

At State Street Global Advisors, we can craft ESG and climate solutions employing a wide range of ESG data sets and providers. While we have strong conviction in the power of R-Factor™, we understand that clients may prefer to build portfolios using alternative ESG scoring systems. We strongly believe that continuing to drive research about the ESG investment process and understanding the implications of using various ESG data sources can allow us become better, more informed partners as we design the most appropriate ESG solutions for each of our clients.

Endnotes

1 Berg, Florian; Kölbel, Julian; and Rigobon, Roberto, "Aggregate Confusion: The Divergence of ESG Ratings" (August 15, 2019). Forthcoming *Review of Finance*. Available at SSRN: https://ssrn.com/abstract=3438533 or http://dx.doi.org/10.2139/ssrn.3438533.

2 Bender, Jennifer; Bridges, Todd Arthur; He, Chen; Lester, Anna; and Sun, Xiaole, "A Blueprint for Integrating ESG into Equity Portfolios" (October 1, 2017). *Journal of Investment Management*, Volume 16, No. 1, 2018. Available at SSRN: https://ssrn.com/abstract=3080381.

3 Sustainalytics refers to its ESG scores as "measures of risk," so a low score implies low risk and high ESG rank. Conversely, R-Factor™ and MSCI ESG scores are constructed in such a way that high scores equate to high ESG quality. Because of this, we sought to minimize the ESG score when constructing the portfolios with Sustainalytics data, rather than maximize it.

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