



NORTHERN TRUST

ASSET MANAGEMENT

RISK INSIGHTS
SERIES

HOW ESG IS IMPACTING PORTFOLIO CONSTRUCTION

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For Financial Professional-Use Only



Our Goal: Bring Greater Clarity to ESG Investing



**Capital Market
Insights &
Outlooks**



**The NTAM
ESG Vector
Score™**



**ESG
Risk Report**



SESSION AGENDA



Details behind
The ESG Risk Report



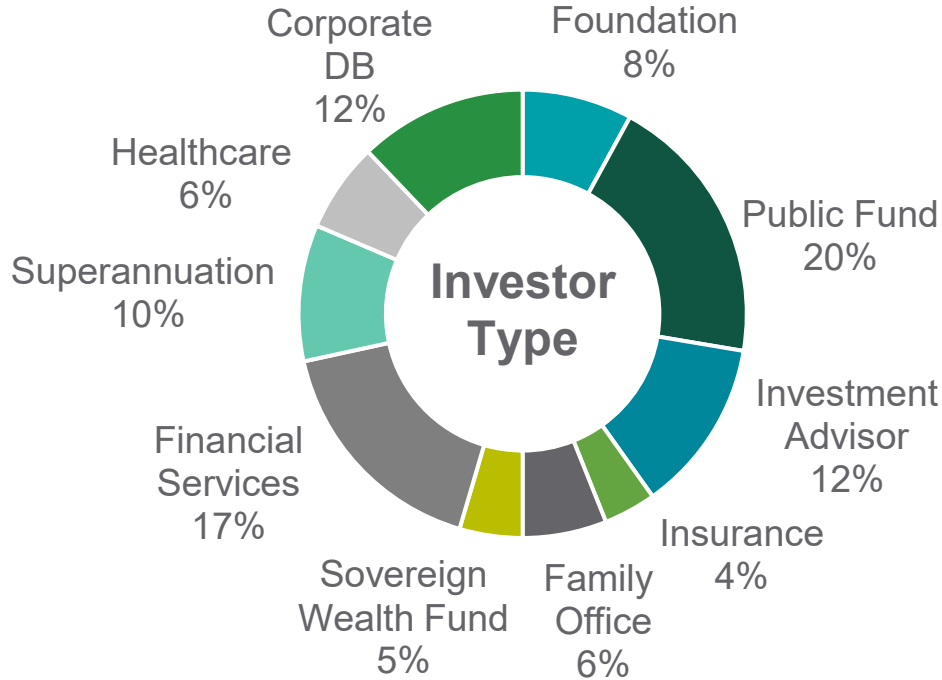
The current
investor landscape



A sneak-peak
into the key findings



The ESG Risk Report – Demographics



1,500+ INVESTMENT STRATEGIES	\$250+ billion EQUITY PORTFOLIO ASSETS	75 INVESTORS
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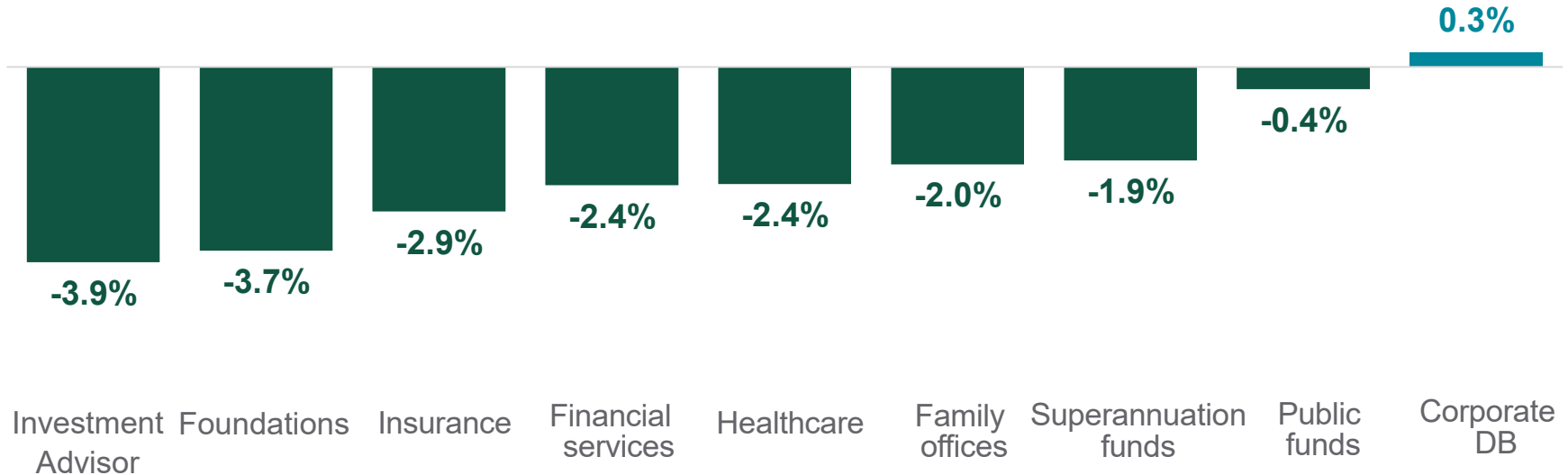
Source: Northern Trust Asset Management. Data collected and analyzed from December 31, 2016 to June 30, 2021.

THE CURRENT LANDSCAPE

The ESG Risk Report

Investors Are Losing Ground on the Broader Market

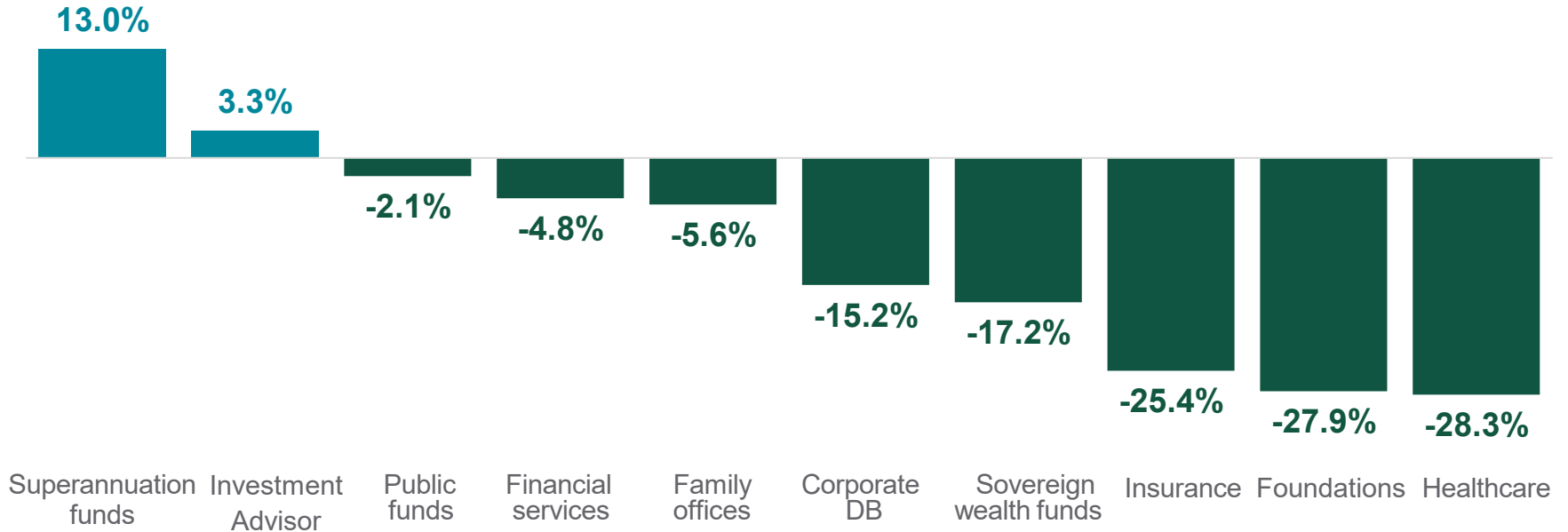
AVERAGE PORTFOLIO ESG SCORE VS. BENCHMARK



Source: Northern Trust Asset Management.

Investors Have Gained Ground on Carbon Reduction

AVERAGE PORTFOLIO CO2 INTENSITY

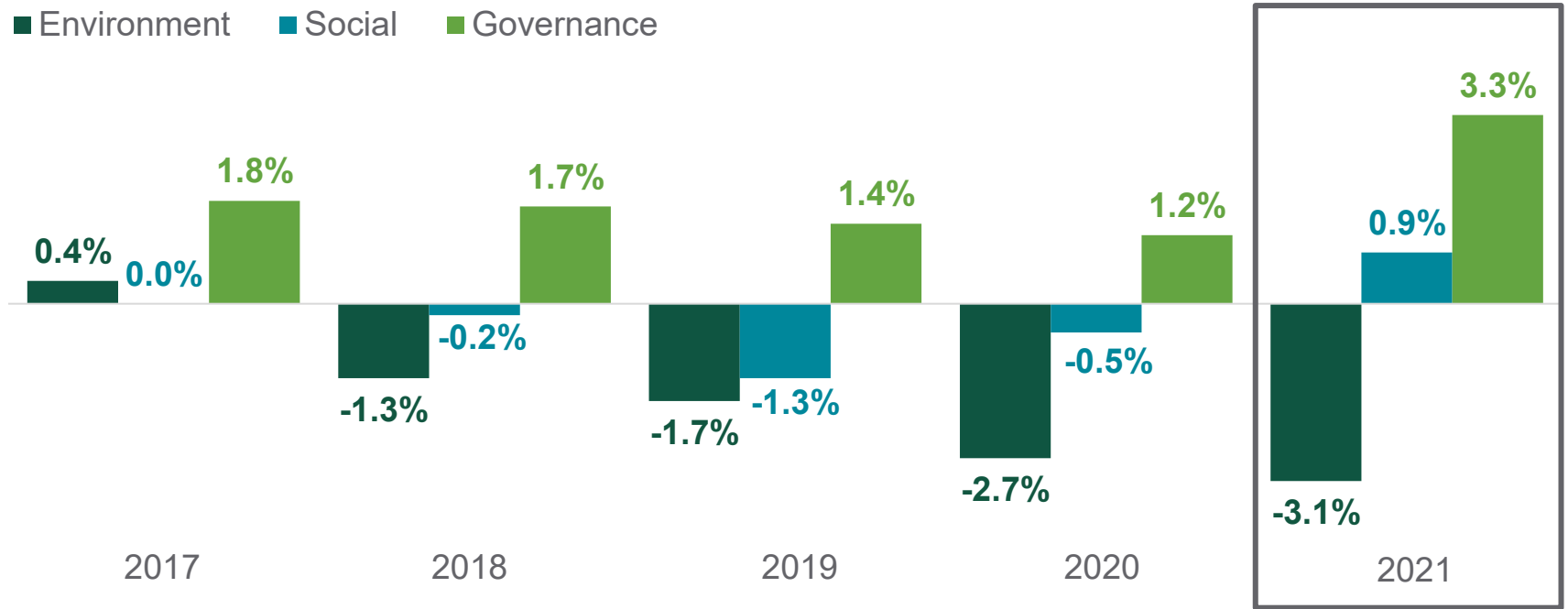


Source: Northern Trust Asset Management.

“E” Continues to Decline While “S & G” Received a Boost in 2021

AVERAGE PORTFOLIO E, S & G SCORES

■ Environment ■ Social ■ Governance

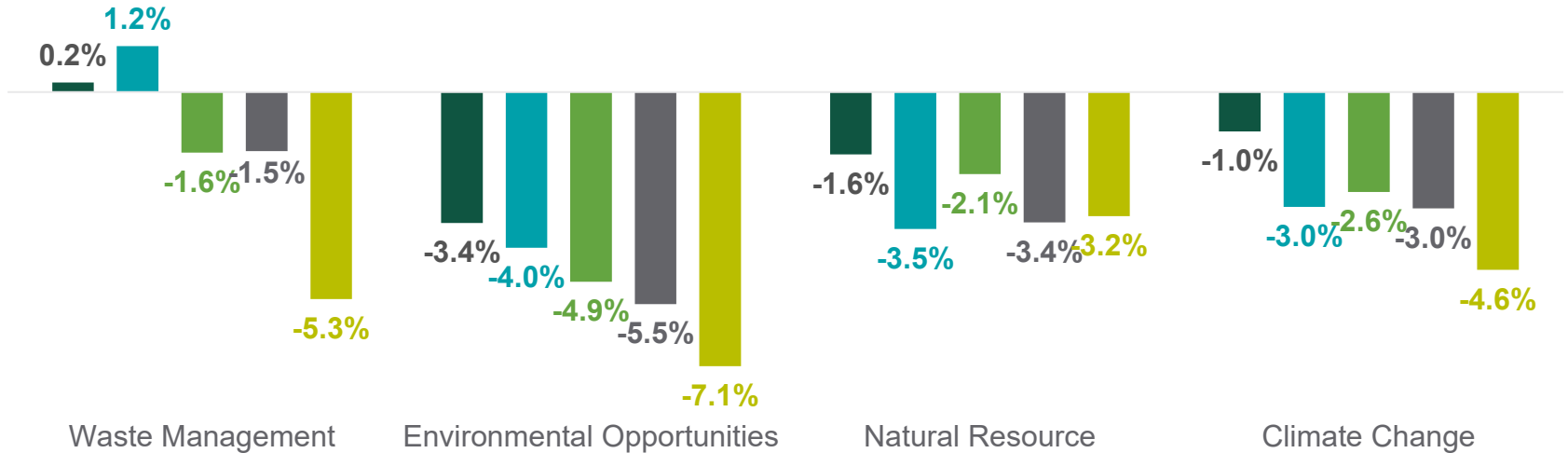


Source: Northern Trust Asset Management.

Environment Score Decomposition

ENVIRONMENT THEME SCORES

■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021

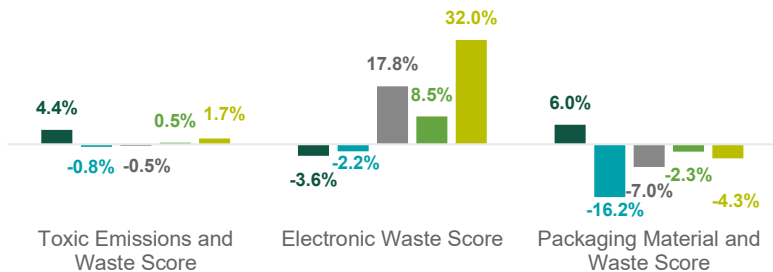


Source: Northern Trust Asset Management.

Environment Score Decomposition

WASTE MANAGEMENT KEY ISSUES

■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021



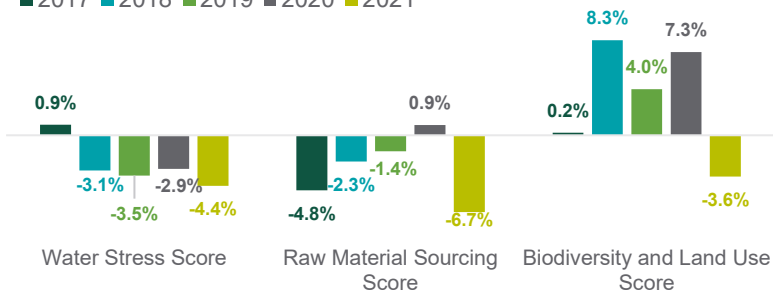
ENVIRONMENT KEY ISSUES

■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021



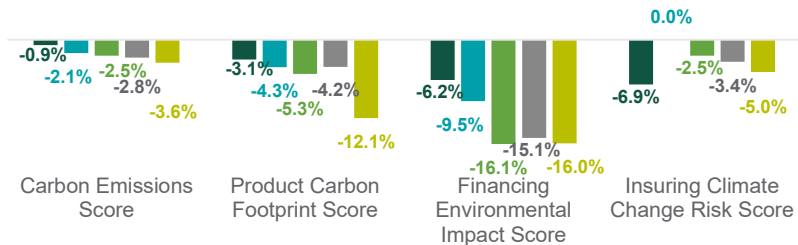
NATURAL RESOURCE KEY ISSUES

■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021



CLIMATE CHANGE KEY ISSUES

■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021

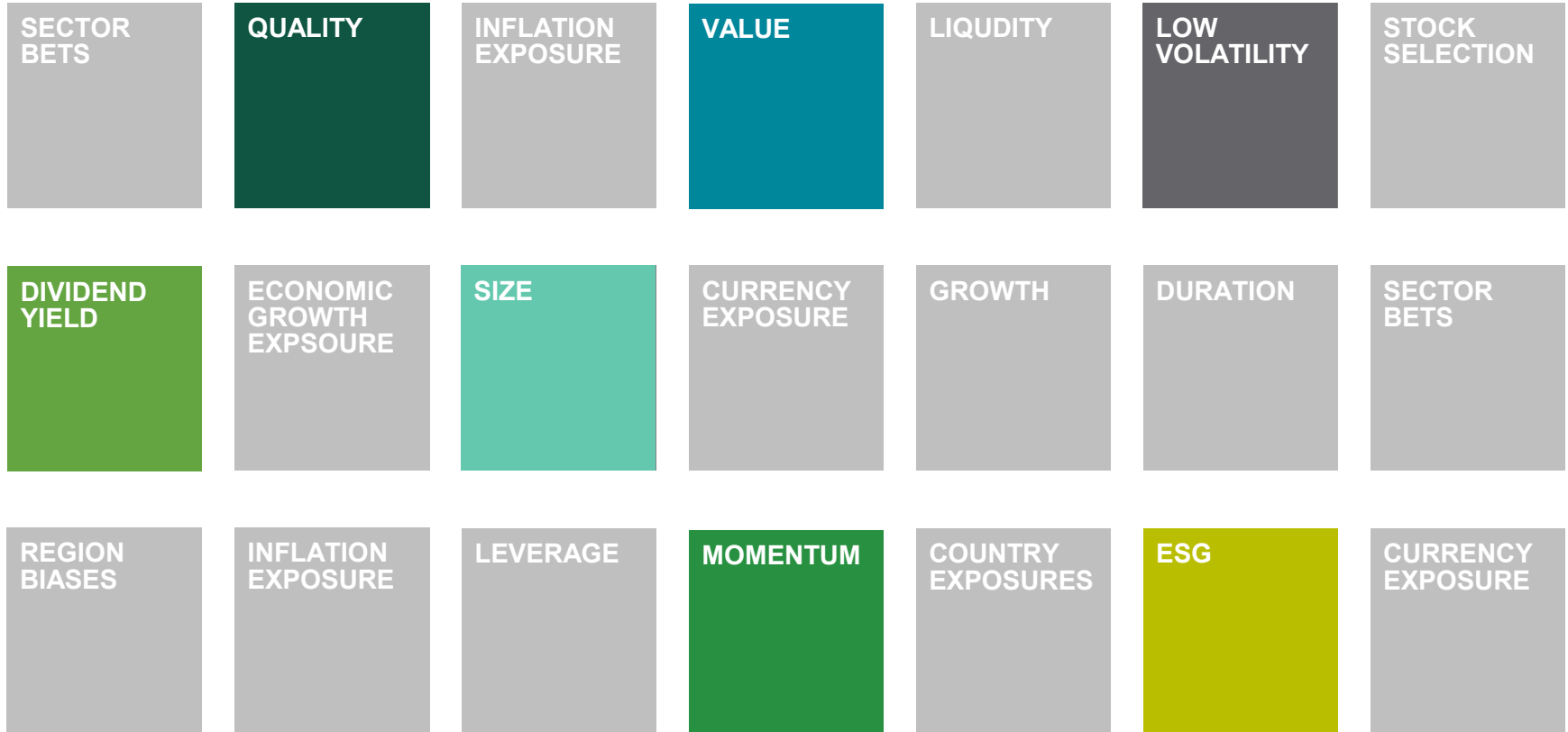


Source: Northern Trust Asset Management.

THE HIDDEN RISKS IN ESG INVESTING

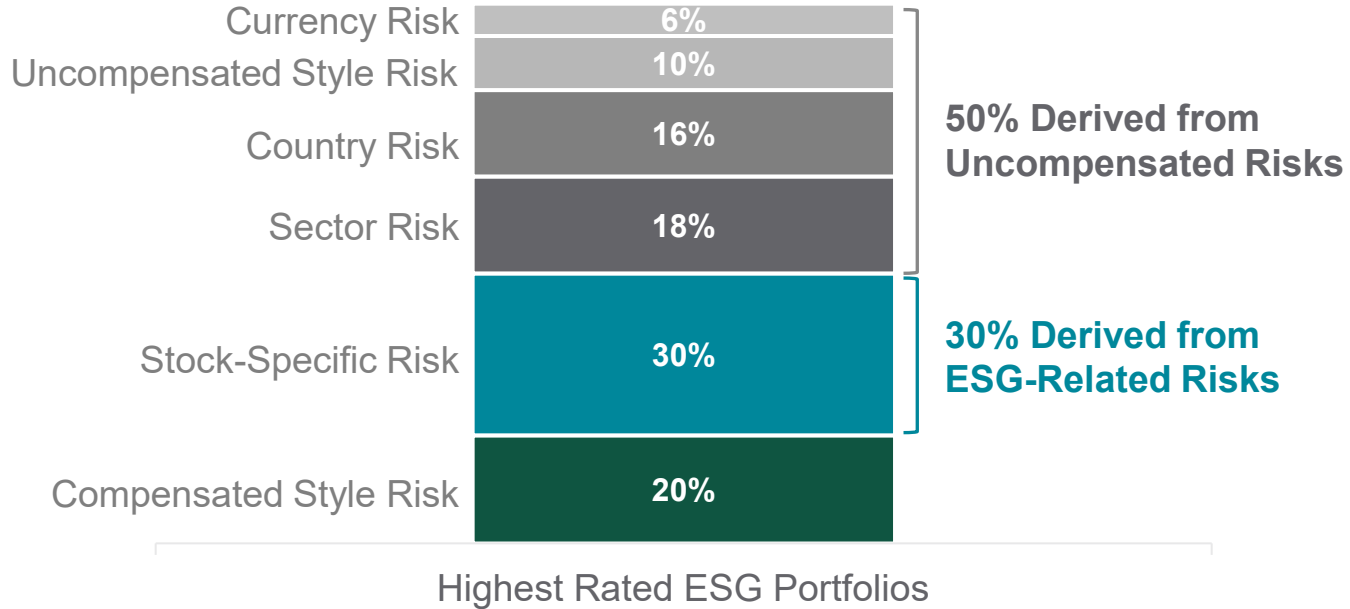
The ESG Risk Report

What is Active Risk?



ESG Portfolios Contained a Large Amount of Unintended Risks

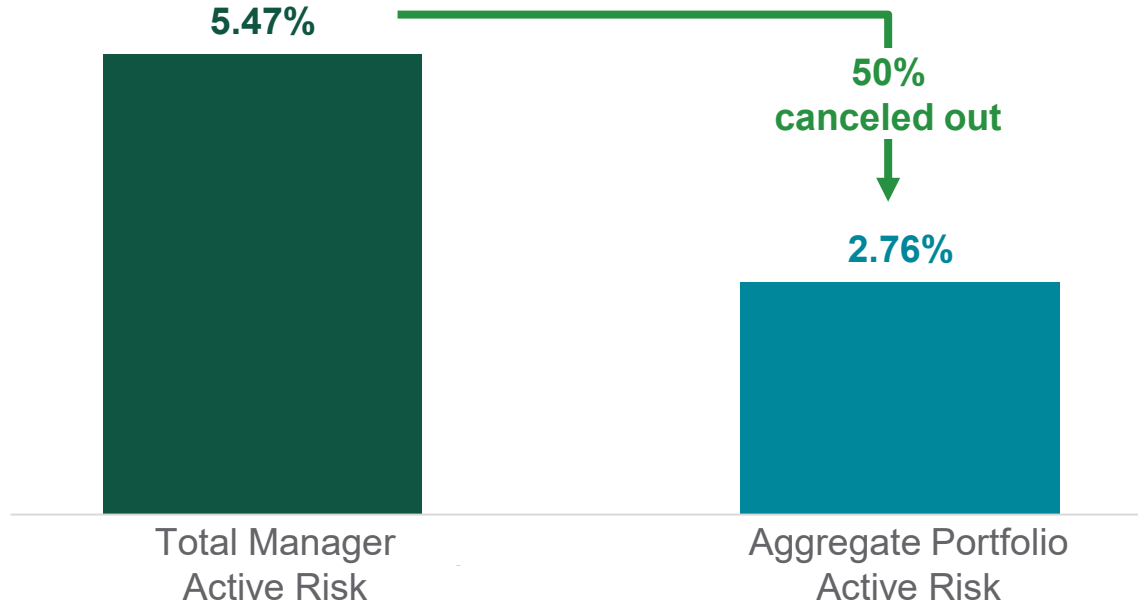
RELATIVE ACTIVE RISK BREAKDOWN



Source: Northern Trust Asset Management. Note, 'Highest' ESG Portfolios are determined by ranking all portfolios in the study by ESG score and breaking them into quintiles. The Highest Rated portfolios fall into the top quintile.

ESG Portfolios Experienced a Greater Dilution of Active Risk

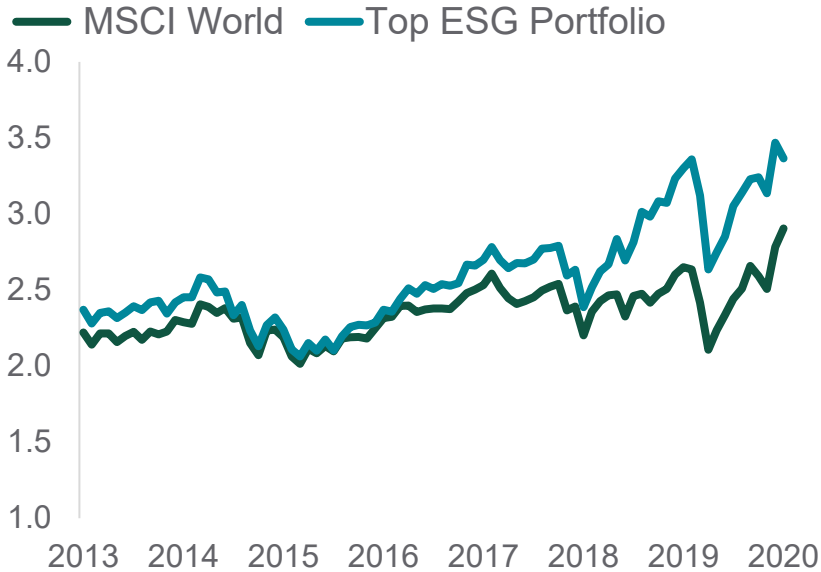
AVERAGE ACTIVE RISK OF HIGHEST RATED ESG PORTFOLIOS



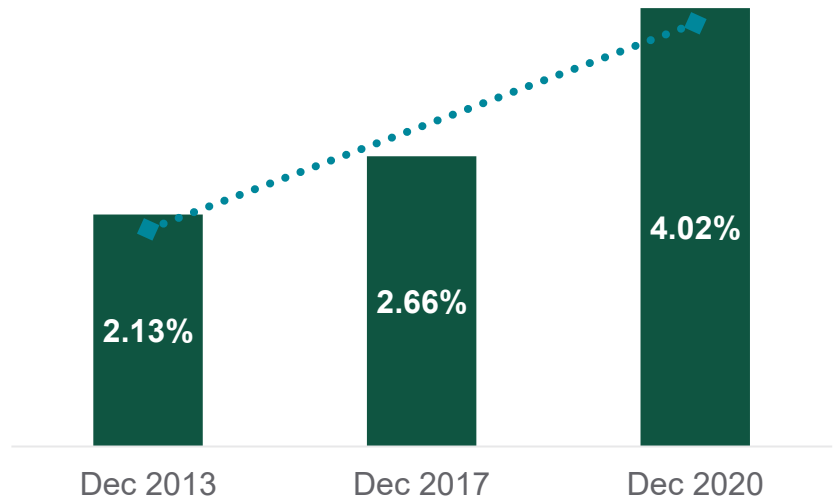
Source: Northern Trust Asset Management. Note, 'Highest' and 'Lowest' Rated ESG Portfolios are determined by ranking all portfolios in the study by ESG score and breaking them into quintiles. The Highest Rated portfolios fall into the top quintile, while the Lowest Rated portfolios fall into the bottom quintile.

ESG Valuations are Driving Active Risk Higher

MSCI WORLD TOP ESG – VALUATION (P/B RATIO)



MSCI WORLD TOP ESG - ACTIVE RISK (%)

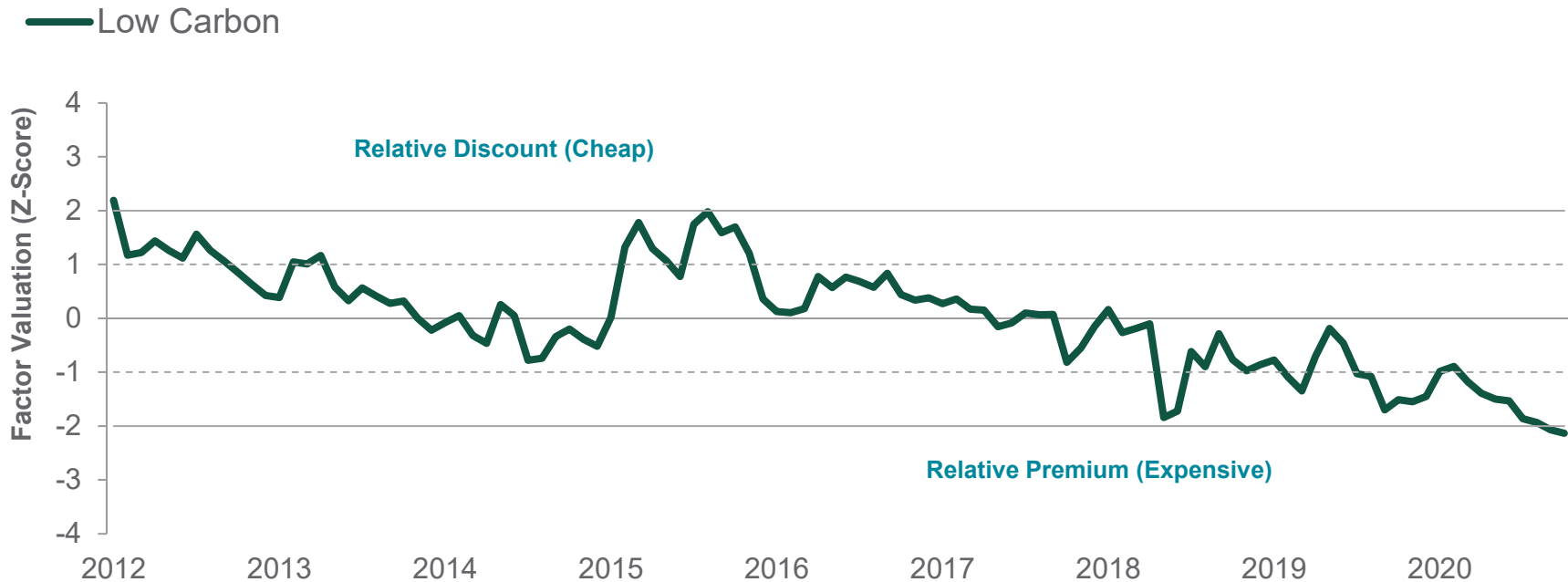


Source: Northern Trust Asset Management. Note, Top ESG Portfolio represents the top 20% of MSCI World ranked by MSCI ESG IVA Rating score



MSCI World Factor Pricing

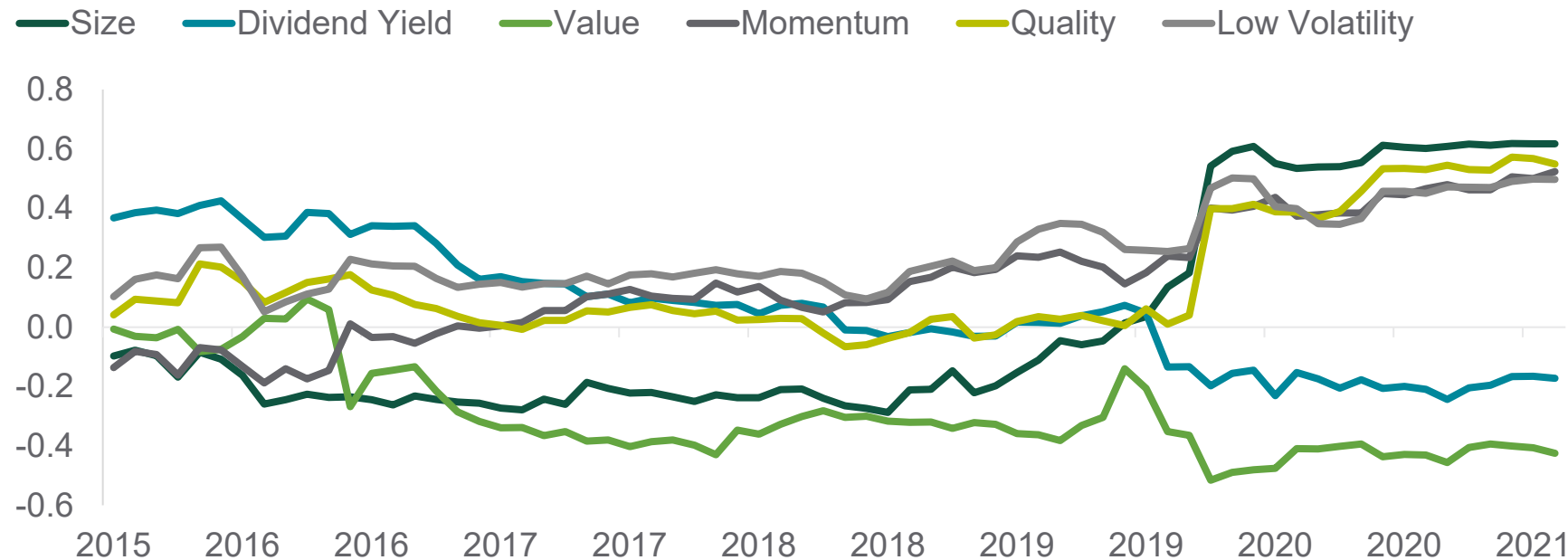
LOW CARBON (LOW CARBON Q1 B/P - INDEX B/P) DECEMBER 2012 – SEPTEMBER 2021





Be Mindful of the Changing Relationships Between ESG and Factors

MSCI WORLD TOP ESG PORTFOLIO ACTIVE RETURNS ROLLING CORRELATIONS



Source: Northern Trust Asset Management. Note, Top ESG Portfolio represents the top 20% of MSCI World ranked by MSCI ESG IVA Rating score

Quality, Size & Volatility Bias in ESG

REGRESSION OF TOP - BOTTOM QUINTILE RETURNS - ESG & STYLE FACTORS (SELECT RESULTS) MSCI WORLD (2013-2021)

Factors	Earnings Quality	Earnings Variability	Beta	Investment Quality	Leverage	Liquidity	Mid Cap	Profitability	Residual Volatility	Size
R Squared	0.62									
Coefficient	0.22	-0.34	0.15	-0.28	0.27	0.22	-1.67	0.20	-0.31	-1.07
P-Value	0.03	0.01	0.03	0.01	0.01	0.03	0.00	0.04	0.00	0.03

Source: Northern Trust Asset Management. Note, 'Highest' and 'Lowest' Rated ESG Portfolios are determined by ranking all portfolios in the study by ESG score and breaking them into quintiles. The Highest Rated portfolios fall into the top quintile, while the Lowest Rated portfolios fall into the bottom quintile. Regression of Top minus Bottom Quintile return by ESG and Barra GEMLT style factors. Only select factors are shown above.

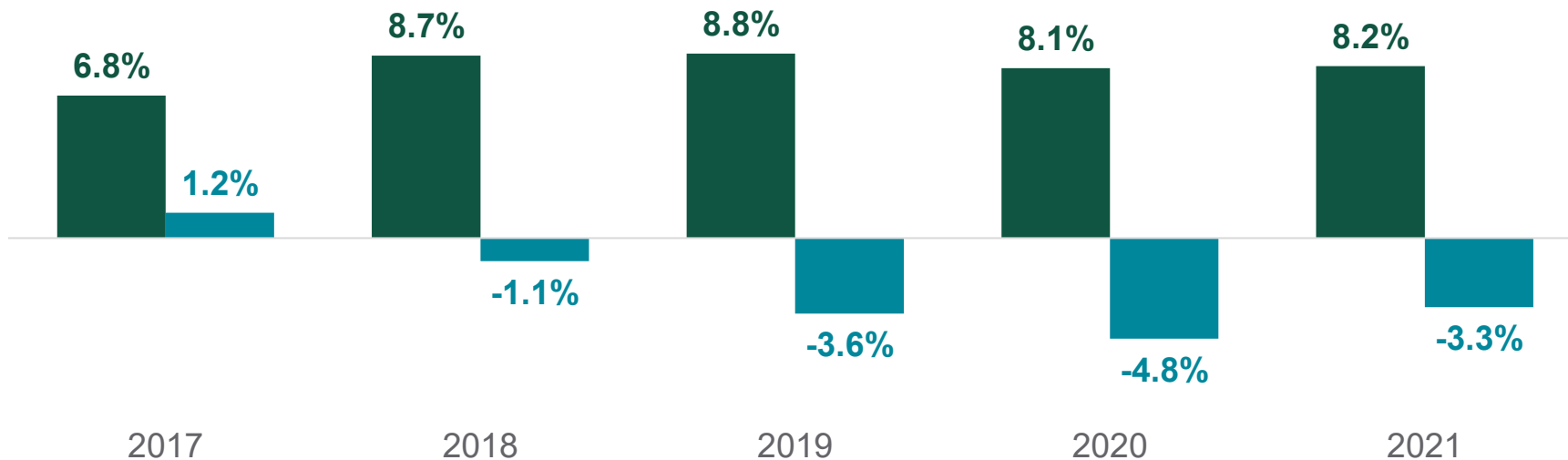
KEY PORTFOLIO CONSIDERATIONS

The ESG Risk Report

“Sleeved” Approach to ESG Integration Is Becoming Less Effective

ESG SCORES RELATIVE TO BENCHMARK BY CALENDAR YEAR

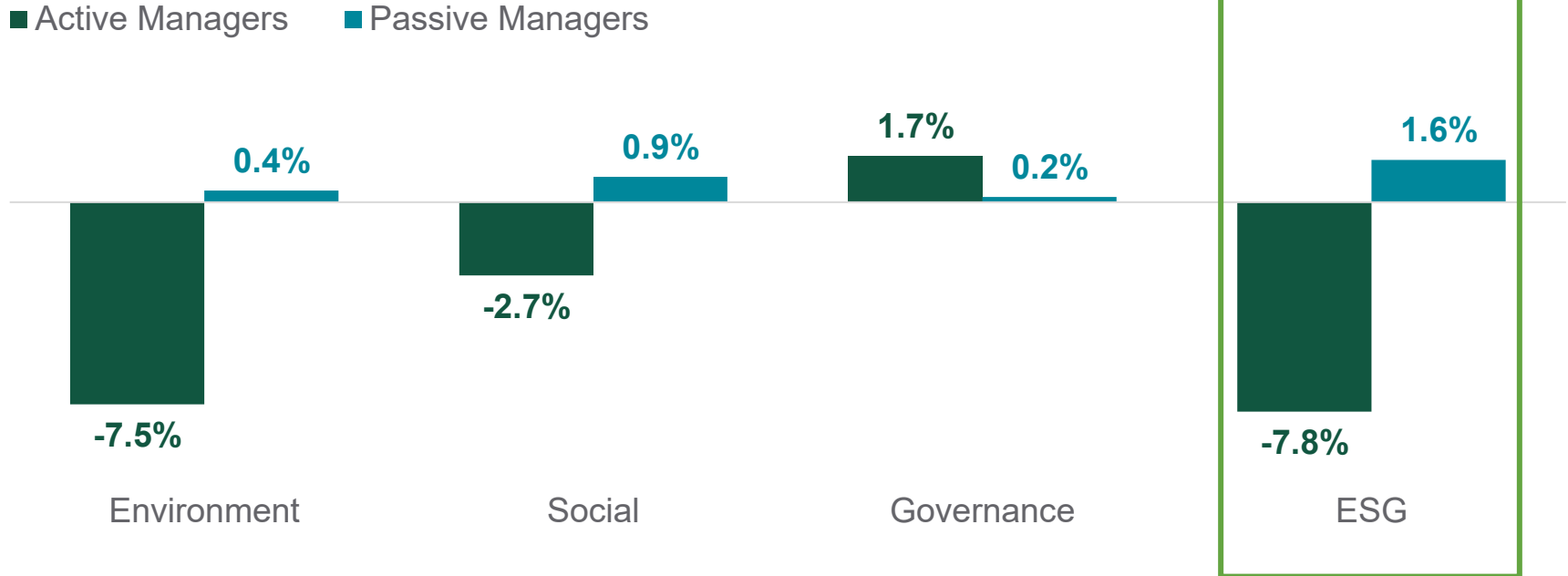
■ ESG Managers Score vs. Benchmark ■ Overall Portfolio ESG Score vs. Benchmark



Source: Northern Trust Asset Management. Note, All Managers – represents the Average of Aggregate MSCI ESG IVA Rating Score of all the portfolios. ESG Managers – Managers which have an increase in MSCI ESG IVA Rating Score vs benchmark are considered, and the weights are scaled to 100.

Active Managers Decreased Overall Environmental & Social Scores

MANAGER IMPACT ON PORTFOLIO ESG SCORES

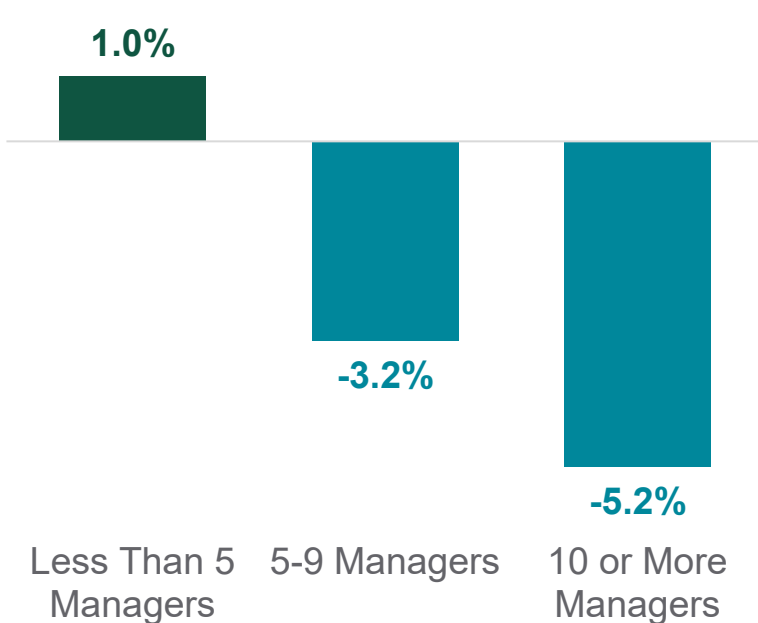


Source: Northern Trust Asset Management. Note, 'Active Manager' is defined as if the Active Risk of the manager relative to their stated benchmark is higher than 2.5%. The active MSCI ESG IVA Rating Score (%) used in above chart are averages across the Active and Passive portfolios from the sample set.

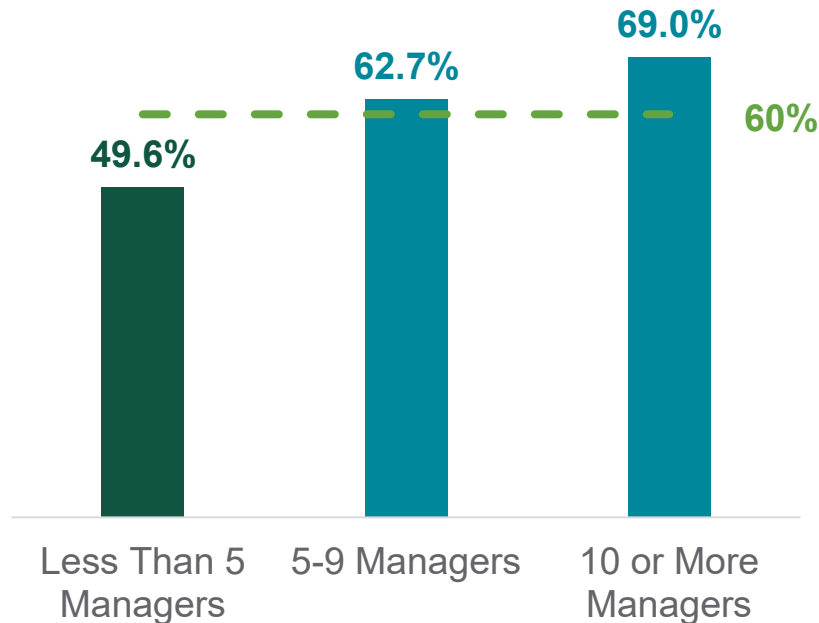


Over-diversification Can Hurt the ESG Profile of the Portfolio

PORTFOLIO'S ACTIVE ESG EXPOSURE (%)



MANAGERS WITH NEGATIVE ESG PROFILE (%)



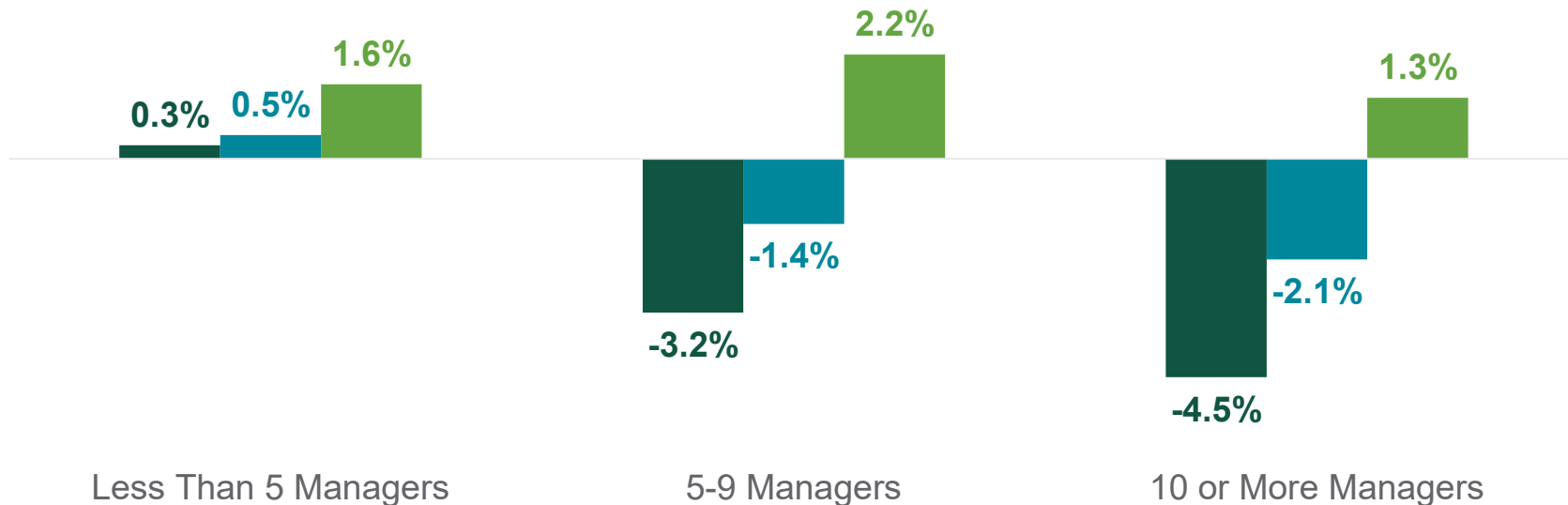
Source: Northern Trust Asset Management. The numbers represent the Average % change in MSCI ESG IVA Rating Score vs Benchmarks in across manager buckets



Over-diversification Can Hurt the ESG Profile of the Portfolio

PORTFOLIO'S ACTIVE ESG EXPOSURE (%)

■ Environment ■ Social ■ Governance



Source: Northern Trust Asset Management. The numbers represent the Average % change in MSCI ESG IVA Rating Score vs Benchmarks across manager buckets



KEY TAKEAWAYS

1

Investors are losing ground on the broader market

2

When integrating ESG, portfolio construction is critical to avoid unintended risk exposures

3

Overdiversification can hurt ESG profile of the overall portfolio



QUESTIONS



Important Information

If presented, hypothetical portfolio information provided does not represent results of an actual investment portfolio but reflects representative historical performance of the strategies, funds or accounts listed herein, which were selected with the benefit of hindsight. Hypothetical performance results do not reflect actual trading. No representation is being made that any portfolio will achieve a performance record similar to that shown. A hypothetical investment does not necessarily take into account the fees, risks, economic or market factors/conditions an investor might experience in actual trading. Hypothetical results may have under- or overcompensation for the impact, if any, of certain market factors such as lack of liquidity, economic or market factors/conditions. The investment returns of other clients may differ materially from the portfolio portrayed. There are numerous other factors related to the markets in general or to the implementation of any specific program that cannot be fully accounted for in the preparation of hypothetical performance results. The information is confidential and may not be duplicated in any form or disseminated without the prior consent of Northern Trust.

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