

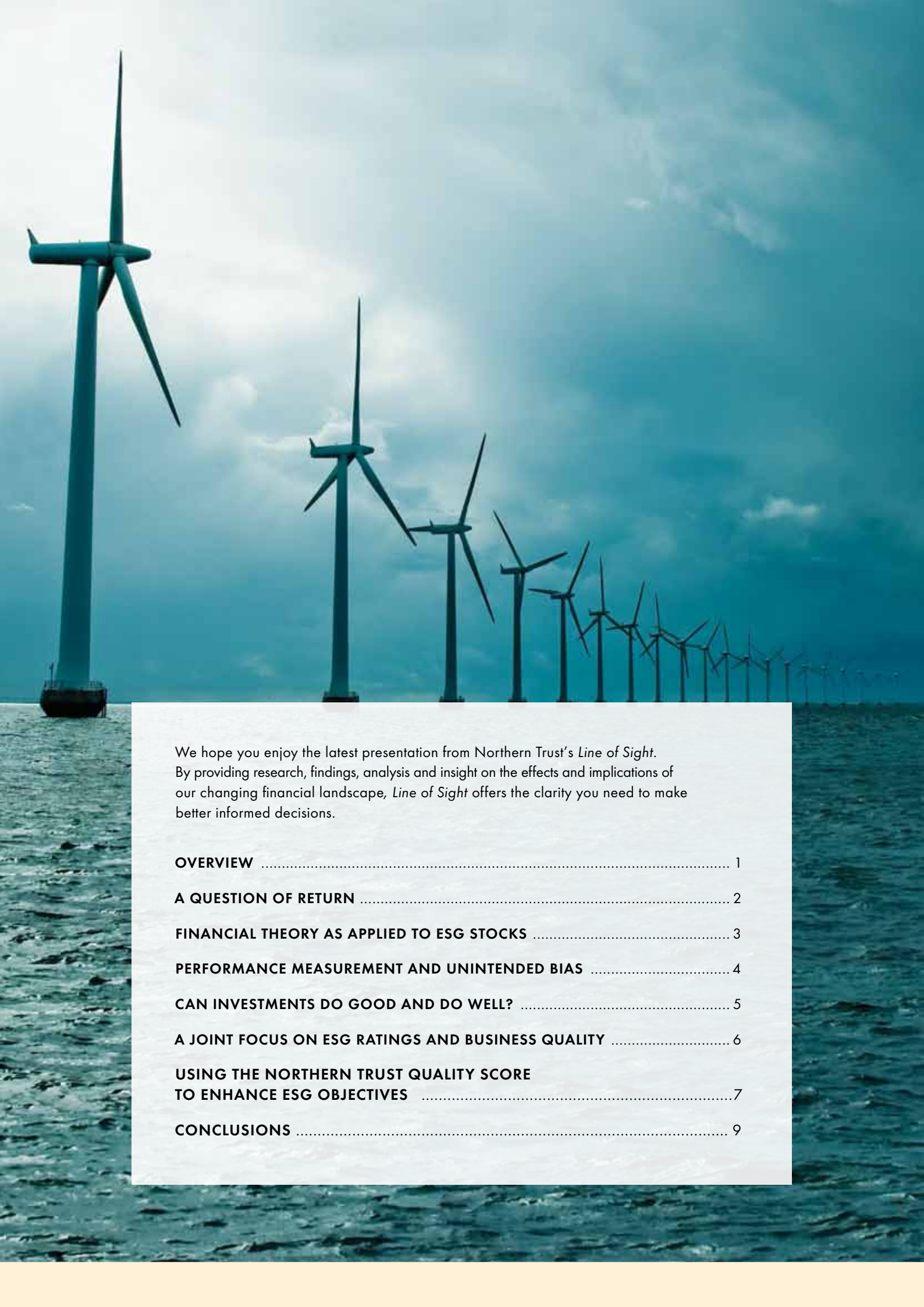
LINE OF SIGHT

Doing Good
and Doing Well

How Quality Can
Enhance Your
ESG Strategy



Northern Trust



We hope you enjoy the latest presentation from Northern Trust's *Line of Sight*. By providing research, findings, analysis and insight on the effects and implications of our changing financial landscape, *Line of Sight* offers the clarity you need to make better informed decisions.

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DOING GOOD AND DOING WELL

OVERVIEW

The market for Environmental, Social and Governance (ESG)-oriented investment products has grown dramatically in recent years. Globally, ESG assets increased from US\$5 trillion in 2007 to more than US\$32 trillion in 2012 – equal to roughly 25% of all the world's financial holdings¹. And US-domiciled assets engaged in sustainable and responsible investment practices totaled more than USD\$3.3 trillion in 2012², roughly 11% of all funds under management. Although the strict definition of an ESG-oriented product is subject to debate, it is clear there is strong upward asset momentum in this category.

Investors have various motivations for incorporating ESG considerations into their portfolios. Some investors need to meet mandated environmental or social goals, others do it for reputational or political reasons, and still others may act on a belief that strong ESG companies will outperform over a long time horizon. As investors consider incorporating ESG considerations into their portfolios, a number of questions arise:

- How will an ESG orientation affect the performance of the portfolio?
- Will incorporating ESG criteria result in an unintended bias to specific countries or sectors?
- How can we best structure an ESG-oriented portfolio to deliver strong performance?

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Much academic research on ESG performance suggests other factors involved

- Chava (2011) focuses on four environmental factors. The paper concludes there is no meaningful relationship between expected returns and the number of environmental strengths of a firm. In contrast, there was a statistically and economically significant relationship between positive excess returns and environmental weaknesses. In other words, the worse a company scored on the four environmental factors, the higher its return.
- Kempf and Osthoff (2007) examine six areas of social responsibility. They conclude that a long-short strategy (long in highly rated stocks, short in low-rated stocks) yields a positive Fama-French-Carhart four factor alpha of up to 8.7% per year for a concentrated portfolio. However, this positive alpha may be difficult to translate into long-only strategies that limit tracking error against a benchmark.
- Hong and Kacperczyk (2007) analyzed "sin stocks," companies involved in producing alcohol, tobacco and gaming. Controlling for firm characteristics such as size, market-to-book ratios and past returns, they find that sin stocks outperform other stocks by 0.30% a month or approximately 3.60% per year.
- Statman and Glushkov (2009) note that when portfolios exclude the sin stocks defined by Hong and Kacperczyk, excess returns were reduced to zero. In that sense, the positive performance associated with high social responsibility was offset by excluding high-performing sin stocks.
- Mansecu (2010) studied the assertion that the relation between ESG and stock returns is industry-specific and found that even after adjusting for industry effects, most of the KLD ESG factors had no significant positive impact on risk-adjusted stock returns.

Further detail is available in the appendix.

A QUESTION OF RETURN

The strong growth in ESG assets, in tandem with industry debate around their return potential, has led numerous academics to analyze ESG-oriented strategies.

Their results have been mixed, ranging from no impact at all to a significant positive or negative impact. These divergent findings are due in part to disagreements about how we define ESG, differences in time horizons analyzed and the negative impact of the global financial crisis.

Attempts at simply benchmarking ESG indices also lead to uncertain conclusions. For example, consider the Bloomberg index of open-end socially responsible funds domiciled in the United States (BBOESRUS) and outside the United States (BBOOSSOC). In the United States, returns and risk for these indices have both been roughly in line with broad market indices such as the Russell 3000. For the World ex U.S., ESG indices have underperformed the MSCI market cap-weighted index by a meaningful 140 basis points from January 2005 to June 2013, with higher total risk (see Table 1).

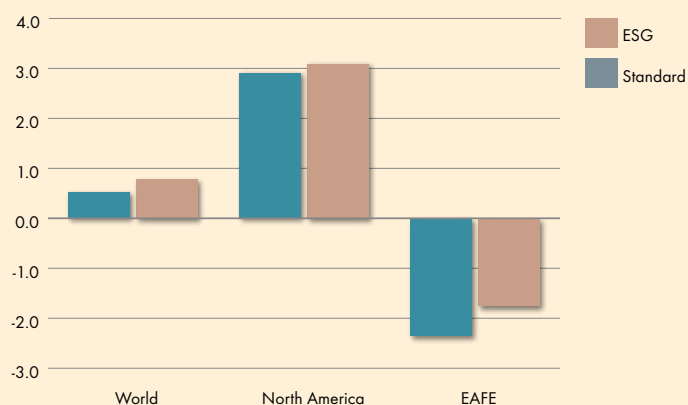
In September of 2007, MSCI launched the World ESG Index, the EAFE (Europe, Australasia and Far East) ESG Index and the North America ESG Index. These indices seek to provide exposure to companies with high MSCI ESG and Intangible Value Assessment (IVA) scores, but do not exclude sin stocks such as tobacco and alcohol manufacturers. Since their inception, these three indices have outperformed their respective regional market cap weighted index benchmarks (see Chart 1).

TABLE 1: BLOOMBERG ESG FUND INDICES RETURNS

Index	Annual Geometric Return	Standard Deviation	Return/Risk
U.S. ESG Funds Total Return	6.3%	16.0%	0.39
S&P 500 Total Return	5.9%	15.5%	0.38
Russell 3000® Total Return	6.3%	16.1%	0.39
Ex U.S. ESG Funds Total Return	3.4%	21.6%	0.16
MSCI World ex US Total Return	4.8%	19.3%	0.25

Source: Bloomberg and Northern Trust Quantitative Research
Jan 2005 – June 2013

CHART 1: COMPARISON OF MSCI INDICES



Source: MSCI and Northern Trust
Data for the period since ESG Index inception to June 30 2013

FINANCIAL THEORY AS APPLIED TO ESG STOCKS

All of the findings thus far have an empirical basis; as a result, conclusions are drawn from limited historical data and, in some cases, controversial forms of analysis. However, a few notable monographs address the question of relative performance from a theoretical perspective and attempt to settle the question using economic and financial theory.

Merton (1987) laid the foundation with his work on financial market equilibrium in which he presented two broad conclusions. First, groups of stocks that are neglected by important sets of investors tend to have prices that are depressed relative to their fundamental values based on a simple supply and demand dynamic. These shunned stocks should therefore have higher expected returns than more palatable alternatives. Second, because of neglect and, hence, the limited sharing of risk, the Capital Asset Pricing Model (CAPM) no longer holds with shunned stocks being priced on idiosyncratic risk and not just beta.

By limiting exposure to non-socially responsible stocks, ESG oriented investors may be unintentionally driving up the expected returns for non-socially responsible stocks. The work of Heinkel, Kraus and Zechner (2001) draws similar conclusions related specifically to environmentally conscious stocks.

Conversely, a positive view of the financial and market impact of ESG is presented in “ESG Reporting – Australian Class Actions as a Motivator³,” which examines corporations voluntarily preparing ESG reports. The authors suggest that avoidance and deterrence theory may affect decisions to issue these reports. In particular, the paper cites prior research identifying the potential role of financial markets in encouraging organizations to behave in a more socially and environmentally sustainable manner⁴.

It further explores the deterrence effect of class action lawsuits and the resulting significant financial damages to defendant corporations in motivating corporations to rethink their approach to ESG. Costly penalties levied against corporations may result in less free cash flow to be available for distribution to shareholders.

PERFORMANCE MEASUREMENT AND UNINTENDED BIAS

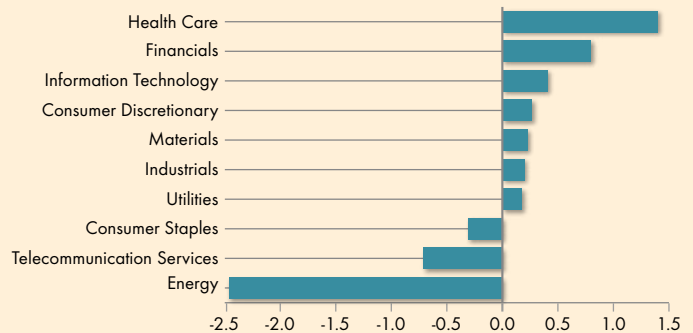
Setting aside the question of return, we turn to consider the issue of tracking performance, and the issue of perceived risk. To obtain an ESG-orientation by filtering or skewing a portfolio to certain types of issuers, some tracking error against standard benchmarks is necessary; this can be a consideration for some clients, particularly where they are required to monitor the performance of the strategy against a traditional (non-ESG) index. Since 2010, the ex post tracking errors of the MSCI World, EAFE and North America ESG indices against their associated standard market cap-weighted benchmarks have been 1.21%, 1.40% and 1.73%, respectively.

A tracking error against the standard benchmark, however, does not necessarily indicate a performance problem. Investors seeking an ESG oriented portfolio should be prepared for increased tracking error relative to a standard index. A substantial portion of this tracking error can be attributed to sector and country misweights. Chart 2 shows the relative sector weights of the MSCI World ESG Index versus the MSCI World index at the end of June 2013. The largest sector exposures, by far, are an underweight to Energy and an overweight to Health Care and Financials.

Similarly, high- and low-ranked ESG companies are not equally distributed across countries. Chart 3 shows weightings of countries in the MSCI World ESG index versus an MSCI World benchmark. There is a substantial underweight to the United States, France, and Hong Kong with relatively large overweights to Australia, Netherlands, and Japan. Again, these contribute significantly to the total tracking error of the ESG product versus a standard market cap weighted benchmark.

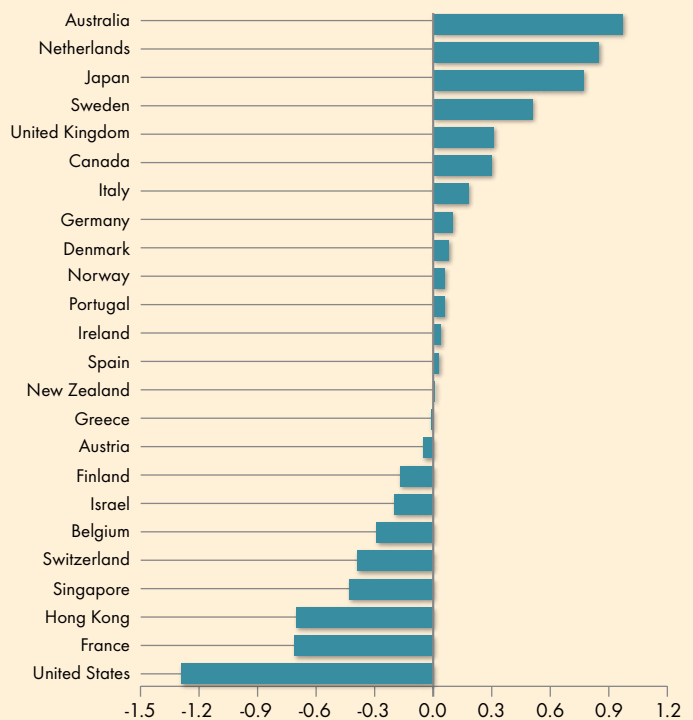
While the historical ex post tracking error of an ESG product may be within an acceptable range, the return deviation from the benchmark could be largely defined by a few concentrated sector and country “bets.”

CHART 2: MSCI WORLD ESG INDEX RELATIVE SECTOR WEIGHTS



Source: MSCI and Northern Trust Quantitative Research
Data as at June 30 2013

CHART 3: MSCI WORLD ESG INDEX RELATIVE COUNTRY WEIGHTS



Source: MSCI and Northern Trust Quantitative Research
Data as at June 30 2013

As a result, the total return of the ESG product could be heavily influenced by idiosyncratic risk within specific countries and sectors. In our example of the MSCI World ESG index, should the United States outperform and energy prices spike, it is likely this index would underperform significantly, a risk that may not have been intended or anticipated. When considering an investment with an ESG orientation, investors should work with their managers to fully understand all the potential biases of their approach and take appropriate corrective measures.

CAN INVESTMENTS DO GOOD AND DO WELL?

One of the most common concerns when ESG strategies are discussed is the risk of underperformance. Some investors fear that they may have to make a choice between performance and investing according to their social and environmental beliefs. In choosing to pursue a socially responsible investment strategy, as with any other investment decision, investors must acknowledge the potential for negative returns, high tracking error versus a traditional benchmark and exposure to country and sector biases. Unfortunately, these realities may cause some investors to rethink their ESG posture in favor of more conventional investment products. But this need not be the case; there may be a way to improve performance and reduce biases while investing according to environmental and social beliefs.

In general, the singular focus of ESG products is to avoid companies with poor ESG track records as gauged by various data sources such as Thomson Reuters' Asset4 ESG or MSCI's IVA ESG scores. Typically, these data sources assign a numeric ESG score to each company and segment companies into broad ESG performance ranges. In the case of MSCI, this corresponds to bond-like ratings such as AAA, AA, etc. with the range extending to CCC. Securities with a AAA rating have the greatest ESG makeup, while those with a CCC represent the lowest-rated ESG stocks. Most ESG products seek to either exclude certain ratings (e.g., CCC) or maximize the aggregate rating of the portfolio given some specified level of tracking error.

Note that in both cases the sole focus is on ESG performance – no emphasis is placed on the financial health, efficiency or profitability of the constituents. Although this approach meets immediate social objectives, it can be incomplete from an investment perspective. If the ultimate objective is to improve environmental and social conditions via the corporate sector, shouldn't investors favor those companies that have both a strong ESG profile *and* a strong business model? After all, aren't these the companies that are best positioned to make the greatest long-run environmental and social impacts? If investors only focus on the ESG scores, they risk ignoring the fiscal health of the companies they choose to buy.

A JOINT FOCUS ON ESG RATINGS AND BUSINESS QUALITY

For actively managed funds, we believe it is appropriate for an ESG strategy to focus jointly on ESG ratings as well as a measure of strength and/or quality. In this way, the strategy will select socially conscious companies that also have sound business practices and growth prospects. In doing so, we emphasize long-run sustainability of good ESG practices and may increase the likelihood of achieving returns that are at or above the standard benchmark.

The Northern Trust Quality Score (NTQS) complements third-party ESG rankings by gauging the efficacy of a company's business model along numerous quantifiable dimensions such as earnings patterns, cash flow, capital structure, and capital expenditures. In contrast to simpler definitions of quality, the NTQS has been shown to be an excellent predictor of a stock's future financial performance.

Table 2 details the returns to each NTQS across US, World ex U.S. and Emerging Markets indices, demonstrating a clear distinction between the performance of high-quality and low-quality stocks across these universes. Furthermore, the NTQS is generally uncorrelated to third party ESG rankings such that effective quality segmentation can be performed within any ESG rating – a critical requirement for effective portfolio construction.

THE NORTHERN TRUST QUALITY SCORE

The Northern Trust Quality Score (NTQS) gauges multiple dimensions of what it means to be a high-quality company including management efficiency, profitability and cash flow. These dimensions are based on our fundamental belief that a quality company should be able to convert assets into sales and earnings, be able to convert equity and invested capital into returns and outperform their peers.

TABLE 2: NTQS RETURNS ACROSS MSCI INDICES

Quintile of Quality		MSCI World (1 Jan 1996 – 31 Dec 2012)	Russell 3000® (1 Jan 1979 – 31 Dec 2012)	MSCI EMI IMI (1 Jan 2002 – 31 Dec 2012)
High	1	12.1%	19.0%	17.4%
	2	10.6%	16.5%	16.9%
	3	9.1%	12.5%	14.9%
	4	7.2%	11.6%	15.1%
Low	5	6.0%	5.1%	10.4%
	Q1-Q5	6.1%	13.9%	7.0%

Source: MSCI and Northern Trust Quantitative Research
Data as at June 30 2013

Five objectives must be considered when designing an ESG product that integrates a measure of quality:

1. Obtain an acceptable concentration of highly rated ESG companies
2. Avoid exposure to the lowest rated ESG companies
3. Maintain an acceptable level of tracking error versus the standard benchmark
4. Achieve a positive alpha against the stated benchmark
5. Reduce sector and country concentrations

We will show that the NTQS, in conjunction with third-party ESG ratings, can achieve all five of these objectives.

USING THE NORTHERN TRUST QUALITY SCORE TO ENHANCE ESG OBJECTIVES

Consider the MSCI ESG IVA scores of the constituents of the MSCI World Index since 2007. As mentioned previously, these scores have a numeric component ranging from 1 to 10, and companies are then segmented into buckets (AAA, AA, etc.). Through averaging z-scores (statistical measurement of a score's relationship to the mean within a group of scores that demonstrate whether a score is typical or atypical within the data set) from the ESG IVA numeric component with z-scores from the NTQS, we form a single composite measure that comprises both ESG and quality. We can then create portfolio backtests to judge this ESG + NTQS composite measure. The parameters used in the backtest are shown in Table 3. We have specifically constrained the relative sector and country weights (to 1.50% and 0.75%, respectively); recall that sector and country exposures exceeded 3.3% and 2.5%, respectively, for the MSCI World ESG Index. Our tracking error limit of 1.20% is in line with the tracking error of the MSCI World ESG Index.

Using quarterly rebalancing, we ran two backtests over a six-and-a-half year period from January 2007 to June 2013 with both tests subject to the constraints outlined above. The first test aimed to maximize the composite measure (ESG + NT Quality). Table 4 shows the resultant average concentration of ESG ratings by bucket for the MSCI World ESG Index, the ESG + NTQS composite measure, and the MSCI World benchmark. Both the MSCI World ESG Index and ESG + NTQS portfolios had strong positive overweights to AAA and AA ESG scores; more than 63% of the securities in the MSCI World ESG Index and 68% of those in the ESG + NTQS portfolio have ESG ratings of A or higher, substantially more than the 36% of the same rating held by the MSCI World benchmark. Furthermore, CCC- and B-rated securities have been eliminated in the ESG + NT Quality portfolio.

TABLE 3: DEFINING ALPHA GENERATING CAPABILITIES

Backtest Parameters	Versus MSCI World Index
Region	+/-1.50%
Country	+/-0.75%
Sector	+/-1.50%
Security	+/-0.65%
Style (Risk) Factors	+/-0.2 standard deviations
Tracking Error Target	<1.25%

Source: MSCI and Northern Trust Quantitative Research
Data as at June 30 2013

TABLE 4: MAXIMIZING THE COMPOSITE MEASURE: ANNUALIZED AVERAGE RETURNS FOR BACKTESTS

IVA (ESG) Score	MSCI World	MSCI World ESG	ESG Only Active Weight	ESG + NTQS	ESG + NTQS Active Weight
AAA	6.8%	15.8%	+9.1%	20.6%	+13.9%
AA	12.8%	24.7%	+11.9%	26.5%	+13.7%
A	16.8%	23.0%	+6.2%	21.1%	+4.4%
BBB	30.2%	20.0%	-10.2%	24.5%	-5.7%
BB	17.4%	13.5%	-4.0%	7.2%	-10.2%
B	10.4%	3.0%	-7.4%	0.0%	-10.4%
CCC	5.6%	0.0%	-5.6%	0.0%	-5.6%
Grand Total	100%	100%		100%	

Source: Northern Trust Quantitative Research and MSCI
Data as at June 30 2013

As illustrated in Table 5, the MSCI World ESG Index has outperformed the MSCI World Index over the last five years by an average of 0.49% per year with 1.24% of realized ex post tracking error. In contrast, the ESG + NTQS portfolio has outperformed the MSCI World by 1.41% with 1.15% tracking error over the same period. This equates to an ex post information ratio for the ESG + NTQS portfolio of nearly 0.50 for the 5 year period.

Perhaps more importantly, the ESG + NTQS portfolio has achieved a higher active return than the MSCI World ESG Index over the 1-, 3- and 5-year time horizons. Comparative figures are shown in Chart 4.

Finally, the excess return of the ESG + NTQS portfolio over the MSCI World ESG Index exceeded 0.90% per year over the last five years and 1.30% over the last three years ended June 30 2013. This is the best overall measure of the impact of adding quality to an ESG product.

By combining the NTQS with third-party ESG ratings, we were able to achieve all of our five original objectives:

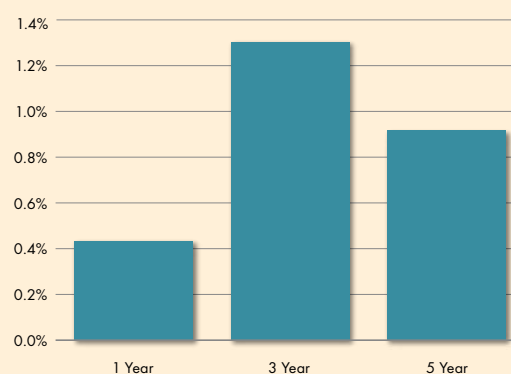
- **Acceptable concentration of ESG ratings:** 68% of the ESG + NTQS portfolio was held in A-rated or higher names. This exceeds the benchmark by more than 30%.
- **Avoid exposure to the lowest ESG rated companies:** The ESG + NTQS portfolio has zero exposure to CCC- and B-rated securities.
- **Maintain an acceptable level of tracking error:** The ESG + NTQS portfolio produced a realized ex post tracking error of 1.16%, which is similar to the 1.24% of tracking error taken by the MSCI World ESG index.
- **Achieve a positive alpha:** In backtesting, the ESG + NTQS portfolio outperformed the MSCI World Index by more than 1.40% per year over the last five years and outperformed the MSCI World ESG Index by more than 0.90% per year since June 30 2008.
- **Reduce sector and country concentrations:** As noted previously, popular benchmarks such as the MSCI World ESG index can have sector mis-weights exceeding 3.3% and country mis-weights exceeding 2.5%. The ESG + NTQS portfolio was constrained to limit sector mis-weights to just 1.5% and country mis-weights to just 0.75%.

TABLE 5: ANNUALIZED RETURNS

Annualized Returns				
Portfolio	1 Year	3 Year	5 Year	Since Inception
MSCI World	19.27%	14.36%	3.30%	0.53%
MSCI World ESG	21.43%	14.24%	3.79%	0.79%
Excess	2.15%	-0.12%	0.49%	0.26%
ESG and NT Quality	21.86%	15.54%	4.71%	1.09%
Excess	2.59%	1.18%	1.41%	0.56%

Source: Northern Trust Quantitative Research
Data as at June 30 2013

CHART 4: EXCESS RETURN OF ESG + NTQS OVER THE MSCI WORLD ESG



Source: MSCI and Northern Trust
Data for the period since ESG Index inception to June 30 2013

CONCLUSIONS

ESG investments criteria allow investors to incorporate their values into their investment choices. Yet current academic research in ESG leaves us unclear as to whether a pure orientation toward ESG issues is a positive or negative source of excess return, and the benchmarking of ESG product performance produces similarly ambiguous results. Furthermore, ESG investments produce a higher tracking error than standard benchmarks; popular ESG indices such as those from the MSCI average 1.10% to 1.70% of annual active risk, mostly due to a few large-sector and country bets.

Yet these risks and uncertainty need not dissuade investors from choosing ESG investments. By incorporating a quality factor overlay into an ESG portfolio, investors are able to emphasize the long-run sustainability of ESG practices while increasing the likelihood of performance above the benchmark. Our research demonstrates that quality measures can add significant excess return to ESG portfolios, suggesting that the NTQS provides, on average, an additional 1.40% of alpha annually over portfolios focused exclusively on ESG. Intelligent portfolio construction using these same backtests can also limit sector and country concentration.

Northern Trust's ESG philosophy is that investors should not be forced to choose between investment performance and responding to their environmental, social and governance principles. If you would like to learn more about how using the NTQS can improve the performance of your ESG strategies, please contact your local relationship manager or visit northerntrust.com.

FOOTNOTES

1. BSR, "Trends in ESG Integration and Investment: Summary of the Latest Research and Recommendations to Attract Long-Term Investors," BSR White Paper (2012).
2. US SIF Foundation, "Report on Sustainable and Responsible Investing Trends in the United States," USSIF Foundation White Paper (2012)
3. Daniel Murphy and Dianne McGrath, "ESG Reporting – Class Actions, Deterrence, and Avoidance," Sustainability Accounting, Management and Policy Journal 4.2 (2013): 216-235
4. Noel Brown and Craig Deegan, "The Public Disclosure of Environmental Performance Information: a Dual Test of Media Agenda Setting Theory and Legitimacy Theory," Accounting & Business Research 29.1 (2012): 21-41.

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APPENDIX

Academic Analysis of ESG Investment Implications

As discussed in the paper, many academics have looked at the impact of ESG investing, but the findings have been varied and inconclusive, we summarize some of the key research pieces below:

Chava (2011) focuses on four environmental factors including the use of clean energy, pollution control programs, development of products with environmental benefits and compliance with voluntary environmental initiatives such as CERES. All data was derived from KLD Stats for S&P 500 firms from 1991 to 2008. The paper concludes there is no meaningful relationship between expected returns and the number of environmental strengths of a firm. In contrast, there was a statistically and economically significant relationship between positive excess returns and environmental weaknesses. In other words, the worse a company scored on the four environmental factors, the higher its return.

Kempf and Osthoff (2007) examine six areas of social responsibility including community, diversity, employee relations, environment, human rights and product. Using the KLD dataset for S&P 500 firms from 1991 to 2003, they conclude that a long-short strategy (long in high rated stocks, short in low-rated stocks) yields a positive Fama-French-Carhart four factor alpha of up to 8.7% per year. However, the constituents of their long-short portfolio included only the top and bottom 10% of rated stocks such that total holdings are concentrated in a small number of names. As a result, this positive

alpha may be difficult to translate into long-only strategies that limit tracking error against a benchmark.

“Sin stocks,” namely companies involved in producing alcohol, tobacco and gaming, were analyzed by Hong and Kacperczyk (2007) from 1965 to 2004. Using cross sectional regressions that control for firm characteristics such as size, market to book ratios and past returns, they find that sin stocks outperform other stocks by 30 basis points a month or 3.6% per year. Their results are both statistically significant and, clearly, economically meaningful.

Statman and Glushkov (2009) analyze returns of S&P 500 stocks from 1992 to 2007 and segment based on the same KLD database as Kempf and Osthoff. Like Kempf and Osthoff, they find that long-short portfolios formed from the best and worst companies within a social responsibility category had positive excess returns but, at the same time, note that when portfolios exclude the sin stocks defined by Hong and Kacperczyk, excess returns were reduced to zero. In that sense, the positive performance associated with high social responsibility was offset by excluding high-performing sin stocks. The net effect was no impact on returns.

Many studies suggest, often without evidence, that the relation between ESG and stock returns is industry specific. In other words, firms in certain industries may have their price impacted by ESG performance while others may not. Mansecu (2010) studied these assertions using the KLD dataset applied to large US firms from July 1992 to June 2008 and found that even after adjusting for industry effects, most of the KLD ESG factors had no significant positive impact on risk-adjusted stock returns. Community relations was the only exception but it must be noted that the statistical significance was marginal and that while other ESG variables such as diversity, corporate governance, employee relations, environment, etc. had statistically insignificant regression betas, virtually all of them were negative. Although we can't say with a high degree of confidence that these betas are different from zero, we can note that, on average across the dataset, the relationship between strong performance on most ESG criteria and excess returns was negative.

These are only a few of the perhaps 50+ research pieces on ESG available in the mainstream financial literature, the findings of which are similarly ambiguous. Likewise, attempts at simply benchmarking ESG indices also draw uncertain conclusions. For example, consider the Bloomberg index of open-end socially responsible funds domiciled in the United States (BBOESRUS) and outside the United States (BBOOSSOC). In the United States both returns and risk have been roughly in line with broad market indices such as the Russell 3000[®]. However, globally ex US, ESG funds have underperformed the MSCI World ex US by a meaningful 140 bps and total risk is slightly higher.

Of course, all of the findings thus far have an empirical basis. As a result, conclusions are drawn from limited historical data and, in some cases, controversial forms of analysis. However, a few notable monographs address the problem from a theoretical perspective and attempt to settle the question using economic and financial theory.

Merton (1987) laid the foundation with his work on financial market equilibrium in which he presents two broad conclusions. First, groups of stocks that are neglected by important sets of investors will tend to have prices that are depressed relative to their fundamental values based on a simple supply and demand dynamic. For this reason, these shunned stocks should have higher expected returns than more palatable alternatives.

Second, because of neglect and, hence, the limited sharing of risk, the Capital Asset Pricing Model (CAPM) no longer holds, with shunned stocks being priced on idiosyncratic risk and not just beta. By limiting exposure to non-socially responsible stocks, ESG oriented investors may be unintentionally driving up the expected returns of these stocks. The work of Heinkel, Kraus and Zechner (2001) draws similar conclusions related specifically to environmentally conscious stocks.

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