NORTHERN TRUST
ASSET MANAGEMENT

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SUSTAINABLE COMPANIES FOR A BETTER PORTFOLIO

USING QUALITY AND ESG TO POTENTIALLY ENHANCE RETURNS

By integrating environmental, social and governance (ESG) factors into their portfolios, investors are increasingly recognizing they can go beyond conventional financial criteria and invest in companies whose emphasis on corporate citizenship matches their own values. Yet even the staunchest proponent of ESG investing acknowledges the importance of financial criteria. How, specifically, can we combine traditional and ESG research to achieve investment objectives surrounding risk, return and ESG performance?

Although ESG data and analytics have become significantly more transparent and detailed over recent years, much of this data is still non-standardized. The key is to bring structure to this data so that it can be used consistently across portfolios, allowing long-term investors to do good while doing well.

With an effective framework in place, we can challenge the notion that ESG investing involves sacrificing performance; in fact, we can consider how ESG research can even complement or enhance performance. Northern Trust's Quality ESG (QESG) strategy applies this framework and demonstrates how ESG factors can be integrated with company fundamental data to seek ESG factors *with alpha*.

To achieve this, we first utilize fundamental data to identify sustainable companies that are "high-quality" (profitable, with strong cash flow and conservative balance sheets) and that also effectively manage their exposures to ESG risks and opportunities. Using these sustainable companies as a foundation, the QESG strategy incorporates several common sense constraints to reduce the pernicious effects of unintended exposures.

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The resulting portfolio is designed to be a core holding that seeks to deliver positive risk-adjusted returns versus the cap-weighted benchmark and integrates financial quality and ESG metrics.

Quality and ESG, taken together, can best be understood as two dimensions of the same underlying theme: sustainability.

Why Quality and ESG?

Over the past several years, we have all witnessed high-profile issues that have provided investors with hard knocks lessons about how poor ESG risk management can destroy both value and reputation. ESG data is certainly helpful to understanding these headline grabbing risks, but it can also be used more robustly to evaluate subtle risks and opportunities. For example, because fresh food sales have recently grown more quickly than packaged food sales,[1] companies selling fresh food may appear to be poised to capitalize on this opportunity. Yet because fresh food products are more exposed to quality and safety risks, these companies may experience significant challenges stemming from a higher occurrence of product recalls. Such examples show that using ESG data alone makes it difficult to pick winners and losers, as this data does not illuminate all risks and potential opportunities.

So while ESG information is invaluable in identifying risks not apparent in financial statements, we should not ignore company financials. Financially high-quality companies have consistently outperformed their low-quality counterparts in developed and emerging markets.[2] Compared to their peers, high-quality companies are more profitable, have more conservative balance sheets and generate greater cash flow. Yet, taken alone, quality tells us nothing about a company's ESG strategy.

Quality and ESG, taken together, can best be understood as two dimensions of the same underlying theme: sustainability. In the context of ESG investing, there are financial and non-financial sources of sustainability. In order to be *financially* sustainable, a company must demonstrate characteristics such as strong return on equity, consistent cash flow and prudent deployment of capital. From a *non-financial* perspective, a company must have strong credentials in managing their exposure to ESG-focused risks and opportunities. Exhibit 1 elaborates on this view of sustainability.

EXHIBIT 1: QUALITY AND ESG – A MORE HOLISTIC VIEW OF SUSTAINABILITY

Sustainable companies score higher than their peers on both Quality and ESG dimensions, including:

Quality	ESG
High profitability	Climate change
Conservative balance sheet	Carbon emissions and stranded assets
Cash flow generation	Corporate governance
Solvency	Privacy and data security
Prudent capital expenditure programs	Diversity

1 Food Market Institute and Information Resources, Inc.

2 For example, see Table 4 in Northern Trust research paper "What is Quality?" (2014). Russell 3000 (from 1979), MSCI World ex U.S. (from 1996) and MSCI EM IMI (from 2005) indexes analyzed from through 2012. Similar results prevail through 2018. Start dates reflect data availability.

Does the strong conceptual pairing of quality and ESG hold up empirically? Our research suggests that it does. In Exhibit 2, we show the performance of the Russell 1000 universe and the MSCI World universe broken into four groups based on quality and ESG ratings. Note that, in each case, the combination of high quality and high ESG is the top performing combination of the two. Although the time horizon of our analysis is relatively short, we can still hypothesize as to why this return pattern is occurring. One explanation suggests this pairing identifies companies engaging in longer-term strategic planning around ESG risks and opportunities while maintaining strong balance sheets and delivering bottom-line results.

The largest gap in top and bottom performance is between high-quality ESG leaders and low-quality ESG laggards.

EXHIBIT 2: QUALITY AND ESG PERFORMANCE

	ESG Category (All)	High Quality	Low Quality
Russell 1000 Universe			
ESG Leaders	10.0%	11.5%	3.3%
ESG Laggards	8.6%	10.3%	4.4%
Quality Category (All)		10.1%	7.1%
MSCI World Universe			
ESG Leaders	6.1%	9.0%	2.8%
ESG Laggards	6.1%	8.4%	3.9%
Quality Category (All)		7.8%	2.9%

*Performance March 1, 2007 through December 31, 2019. Based on market cap-weighted returns.

SOURCE: Northern Trust Quantitative Research, MSCI, FTSE Russell, FactSet. Returns represent annualized average returns of equally weighted portfolios for the Russell 1000 universe formed as follows. ESG Leaders represent MSCI ESG Ratings of AAA or AA; ESG Laggards represents MSCI ESG Rating of B or CCC. High and Low Quality represent the top and bottom quintiles of Northern Trust's quality score, respectively Returns are gross of dividend withholding tax. Returns include backtested performance. Performance March 1, 2007 through December 31, 2019. Past performance is no guarantee of future results, Returns of the indexes also do not typically reflect the deduction of investment management fees, trading costs or other expenses. It is not possible to invest directly in an index.

Companies need to plan for the long-term with concrete action today. Although global warming is arguably a longer-dated risk, companies reliant on fossil fuels need to plan for scenarios on the near-term to respond to climate risk, transition risk and regulatory risk. In response to this pressure certain companies, like Glencore, a global mining major, committed publicly to capping production of thermal coal at 2018 levels. This decision, according to the company, was prompted by the company's plan to invest in assets that will be more resilient to regulation, as well as the physical and operational risk related to climate change.

Corporate governance is another example of how ESG issues can affect performance – both near- and long-term. Having the proper board structure, including the independence of key committees, strong shareholder protections and executive pay aligned with performance are all desirable governance features increasingly demanded by investors. However, having a well-structured board and a strong plan around environmental risks and opportunities is not sufficient to maintain sustainability. Companies must be profitable to sustainably act on ESG considerations.

Indeed, one may deduce that a company adept at managing its ESG risks is likely to adroitly manage other aspects of the company as well, giving it a greater chance of being of high financial quality. This intuitive relationship between quality and ESG is what makes this combination of factors so powerful!

DOING GOOD AND DOING WELL

In early 2014, our research paper titled Doing Good and Doing Well laid out our approach to building a portfolio of high-quality companies while seeking outperformance through the integration of ESG information. That strategy – known as Quality ESG (QESG) – has more than a three year track record, enabling us to analyze how effectively our research results have translated to the real world.

QESG integrates financial and ESG data in several ways (see Exhibits 3 and 4). First, QESG removes companies that produce tobacco and civilian firearms, have violated international norms such as the UN Global Compact or have generally shown poor management of ESG risks and opportunities. Focusing on quality, QESG then ranks companies by our quality score and removes those in the lowest 20%, as these companies have significantly underperformed the broader market.[3] We then select companies for our portfolio that have high marks on both ESG and quality while controlling for several investment and ESG risks. For example, QESG

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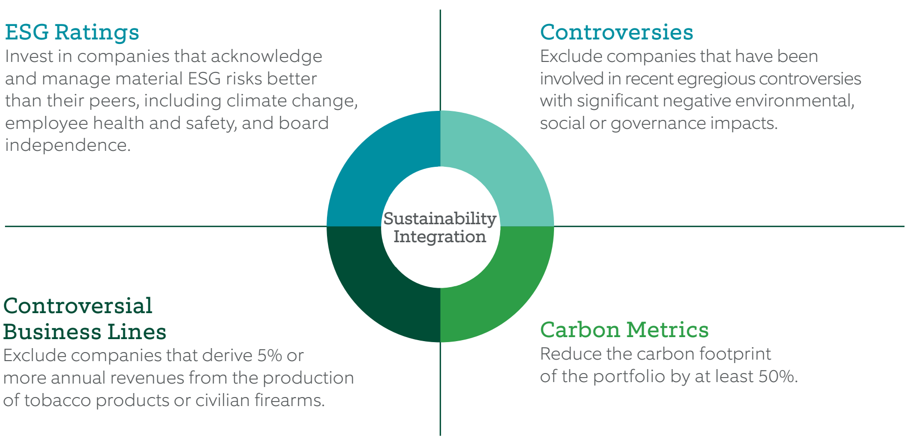
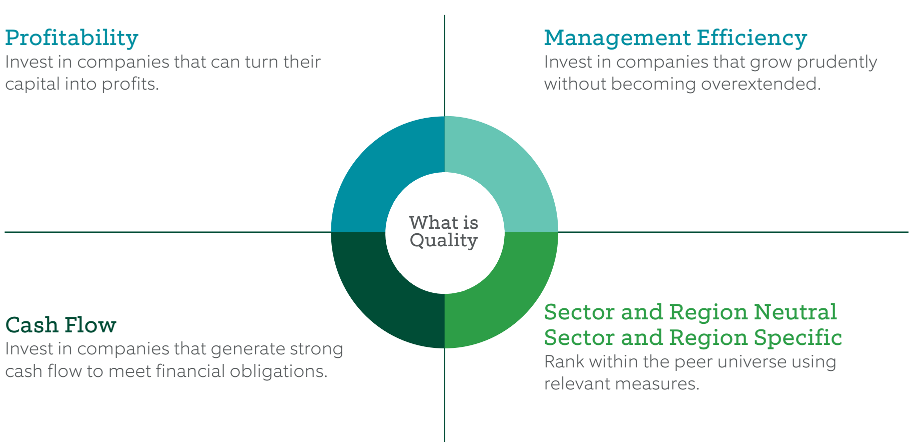
EXHIBIT 3: ESG DATA



SOURCE: Northern Trust, MSCI

EXHIBIT 4: WHAT IS QUALITY



SOURCE: Northern Trust

has a meaningful reduction in carbon risk – as measured by carbon intensity and potential emissions from fossil fuel reserves – versus the parent benchmark. Carbon risk is an important sub-component of broader climate change risks and is therefore a point of emphasis for QESG.

Finally, stewardship is foundational to our identity at Northern Trust Asset Management. Our primary objective as an asset manager is to create long-term value for our clients. This objective applies to all of our portfolio management decisions, including operating as a responsible investor and engaging with company management and boards of directors. We believe that being an active owner will help portfolio companies produce sustainable value, and that companies' long - term financial returns are connected to their strategic, environmental, social and governance performance.

Climate change risk, for example, is one area where shareholders have been highly visible and are actively using stewardship activities. It is difficult for investors to know which companies are most at risk from climate change and those best prepared to mitigate financial and reputational risks as they arise. Such assessments rely on clear, concise and consistent data from investee companies as well as research by third parties. As a consequence, shareholders have become increasingly active about the need for companies to increase and improve reporting on climate-related risks to their portfolios. To this end, in December 2017, along with over 260 investors with USD 28 trillion in assets under management, we became a signatory to the Climate Action 100+, a multi year, investor-led initiative to partner with the world's largest corporate greenhouse gas emitters to curb emissions across the value chain, strengthen climate-related financial disclosures, and improve governance of climate-related risks that may affect companies.[4] Already the initiative has seen some early results. In addition to the commitment from Glencore which came in response to dialogue with Climate Action 100+, Nestle announced and outlined a commitment to publish a report in line with the expectations of the Taskforce for Climate-Related Financial Disclosure, including an analysis of the social impacts associated with the climate scenarios.[5]

All of these tools can be combined in the portfolio construction and management process in a unified approach to compose a portfolio that is designed to invest in issuers that exhibit both robust quality and Sustainable Investing signals, and to encourage them to continue to do so. This process is illustrated in Exhibit 5.

Exhibits 6 and 7 show standard risk and return characteristics of QESG US and World compared to both the Russell 1000 and the MSCI USA ESG Leaders index and the MSCI World and MSCI World ESG Leaders index respectively. The MSCI ESG Leaders index is roughly comprised of the top half of the capitalization-weighted benchmark based on the same ESG ratings utilized in QESG.[6]

With a four-plus year live track record, QESG has confirmed results first observed in our 2014 paper titled *Doing Good and Doing Well.*

While ESG information is invaluable in identifying risks not apparent in financial statements, we should not ignore company financials.

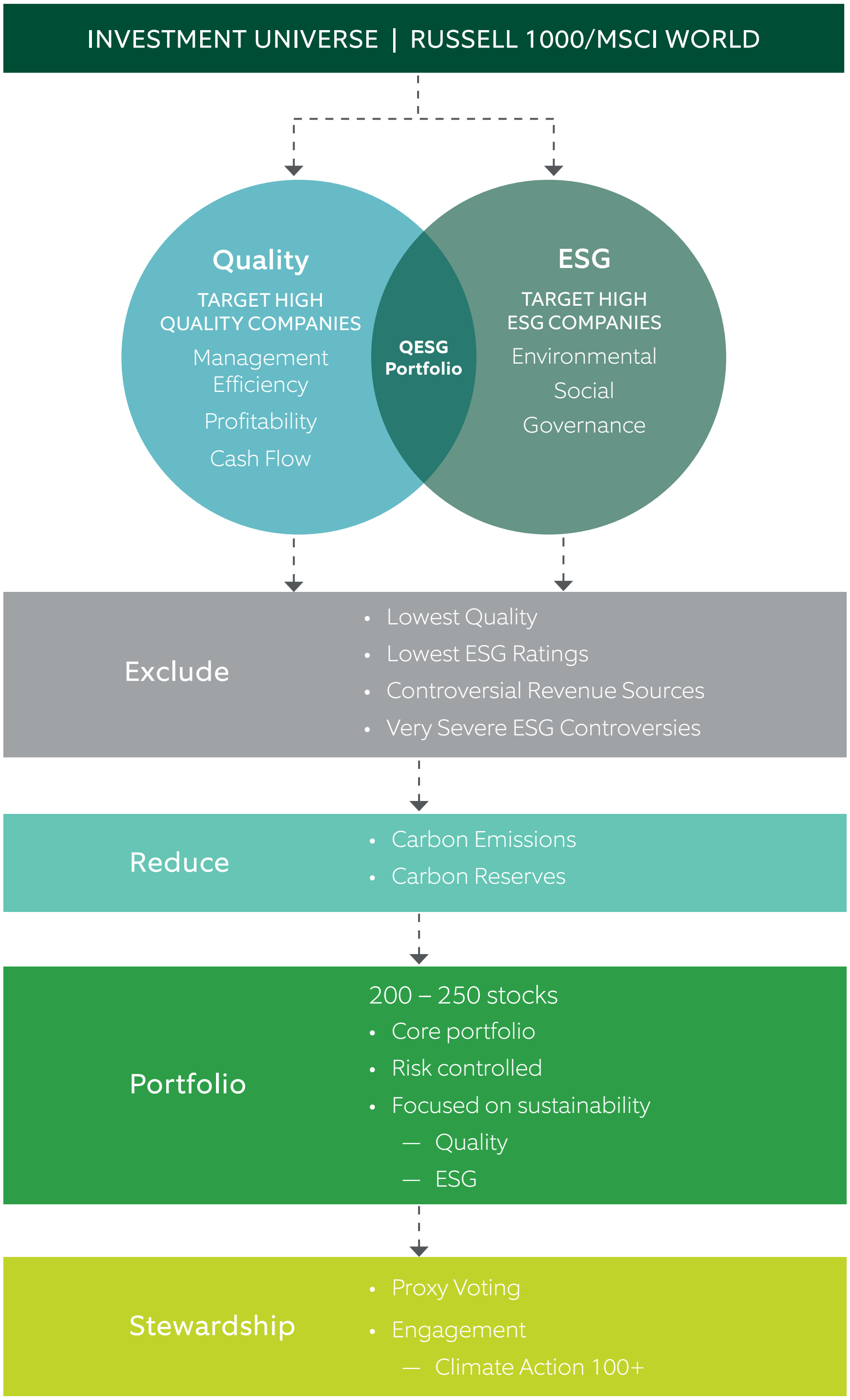
3 See footnote 2 for more details.

4 http://www.climateaction100.org

5 https://www.responsible-investor.com/home/article/nestle_commits_to_tcfd_disclosure_after_ca100_pressure/.

6 See MSCI ESG Leaders Index Methodology June 2017 for more details.

EXHIBIT 5: QESG INVESTMENT PROCESS



SOURCE: Northern Trust

Over the last four-plus years, QESG US outperformed the Russell 1000 and the MSCI USA ESG Leaders index by an annualized 0.53% and 0.40% gross of fees, respectively; and QESG World outperformed the MSCI World and the MSCI World ESG Leaders index by an annualized 1.51% and 1.51% gross of fees, respectively through an exposure to high quality and high ESG rated companies, as shown in Exhibits 8 and 9 for the Russell 1000 and MSCI World. Furthermore, QESG meaningfully helps reduce carbon risk, as indicated by current-year carbon emissions and exposure to potential emissions from fossil fuel reserves, as shown in Exhibit 10. This may benefit investors as the world shifts towards a low carbon economy.

EXHIBIT 6: RISK AND RETURN CHARACTERISTICS (GROSS OF FEES)

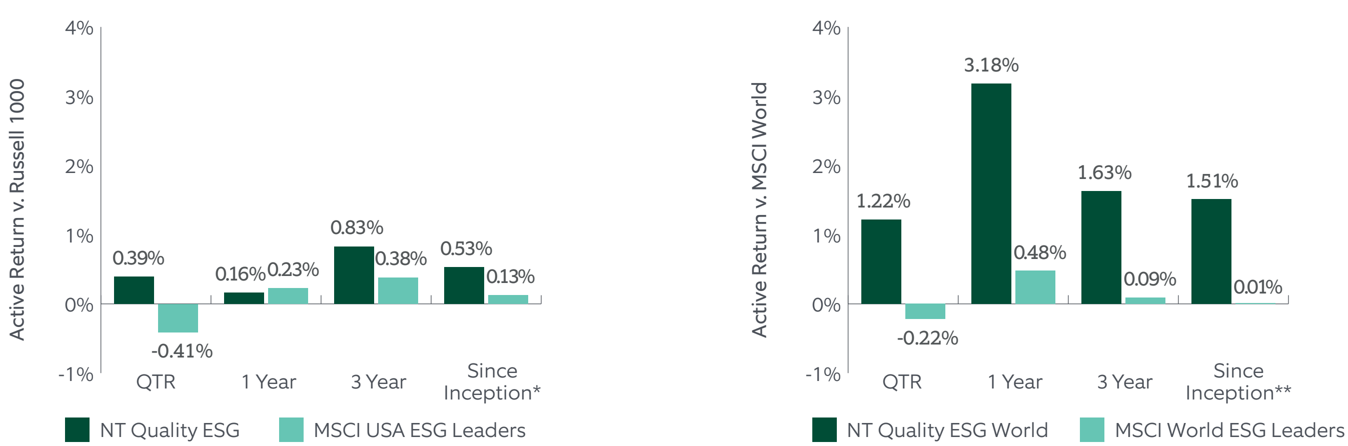
As of 12/31/2019	Return				Risk (Since Inception)		Risk Adjusted Returns (Since Inception)	
	QTR	1 Year	3 Year	Since Inception	Annualized Standard Deviation	Tracking Error	Sharpe Ratio	Information Ratio
U.S. Quality ESG*								
NT Quality ESG (Gross)	9.43%	31.59%	15.88%	14.57%	12.37%	1.39%	1.13	0.38
Russell 1000	9.04%	31.43%	15.05%	14.04%	11.91%	N/A	1.13	N/A
MSCI USA ESG Leaders	8.63%	31.66%	15.43%	14.17%	11.45%	1.60%	1.18	0.08
World Quality ESG**								
NT Quality ESG World (Gross)	9.78%	30.85%	14.20%	13.50%	11.68%	1.23%	1.10	1.23
MSCI World	8.56%	27.67%	12.57%	11.99%	11.30%	N/A	1.02	N/A
MSCI World ESG Leaders	8.34%	28.15%	12.66%	11.99%	11.07%	1.11%	1.03	0.00

SOURCE: Northern Trust, FTSE Russell, MSCI.
*Inception Date is September 1, 2015.
**Inception Date is October 1, 2015.

Past performance is no guarantee of future results. Returns for periods greater than one year are annualized. Gross performance returns shown do not reflect the deduction of investment management/advisory fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs and other expenses. Performance results will be reduced by the fees incurred in the management of the account. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index.

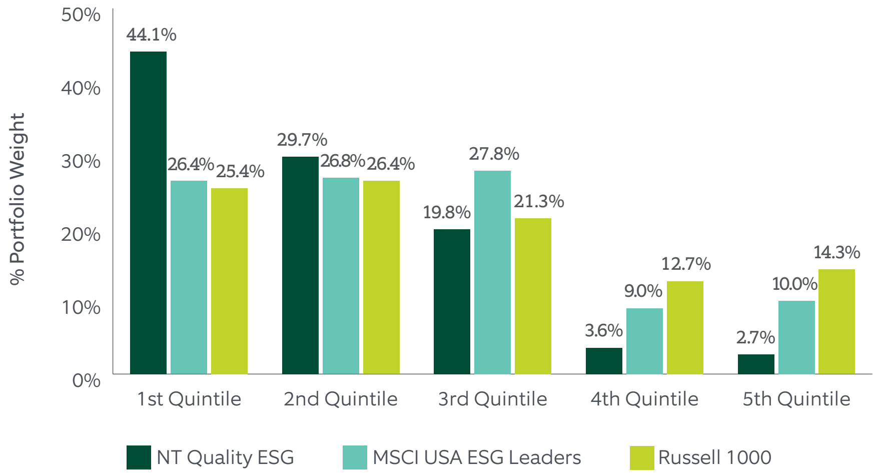
Fee illustrations are on page 11.

EXHIBIT 7: ACTIVE RETURN (GROSS OF FEES) VS. RUSSELL 1000/MSCI WORLD

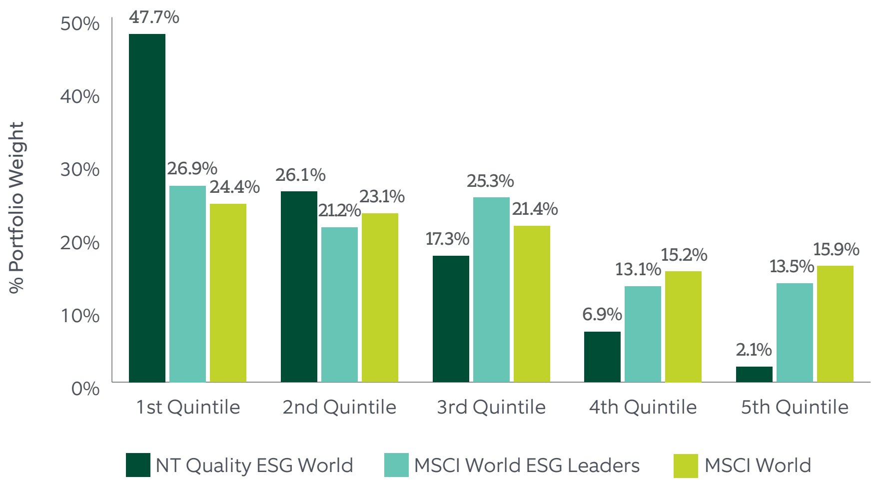


SOURCE: Northern Trust, FTSE Russell, MSCI.
*Inception Date is September 1, 2015.
**Inception Date is October 1, 2015. Past performance is no guarantee of future results.
Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index.

EXHIBIT 8: QUALITY DISTRIBUTION



SOURCE: Northern Trust, FTSE Russell, MSCI. As of December 31, 2019.



SOURCE: Northern Trust, MSCI. As of December 31, 2019.

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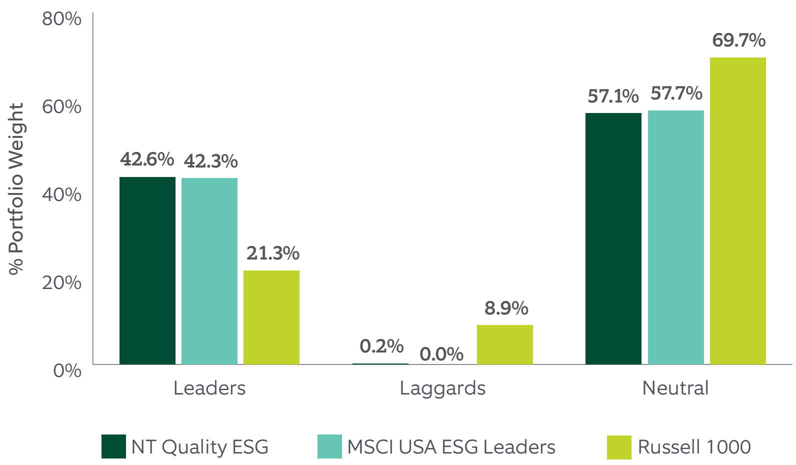
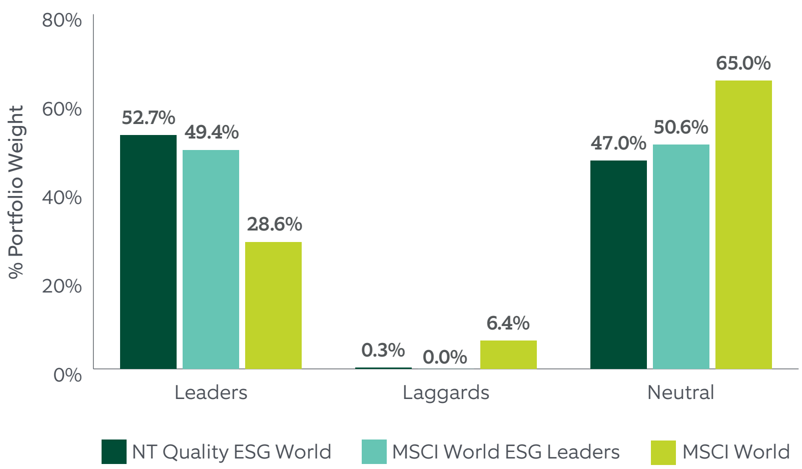
EXHIBIT 9: ESG RATINGS DISTRIBUTION

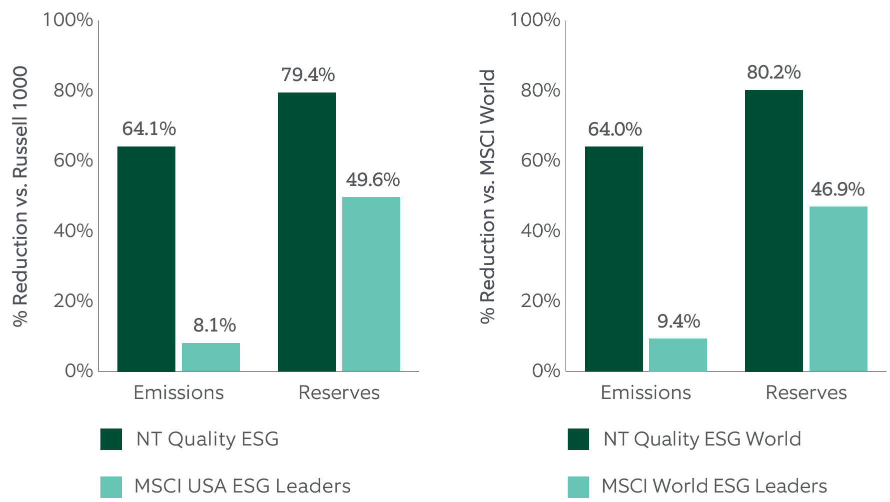


SOURCE: Northern Trust, FTSE Russell, MSCI. As of December 31, 2019.



SOURCE: Northern Trust, MSCI. As of December 31, 2019.

EXHIBIT 10: CARBON ANALYSIS VS. RUSSELL 1000/MSCI WORLD



SOURCE: Northern Trust, FTSE Russell, MSCI. As of December 31, 2019. Emissions represents Scope 1 and 2 carbon emissions scaled by $mn sales. Reserves represents total potential carbon emissions scaled by $mn market cap.

QESG has a favorable Quality rating, ESG score and carbon risk profile compared to the Russell 1000, MSCI USA ESG Leaders and MSCI World ESG Leaders indexes.

CONCLUSION

The conclusions reached in our 2014 research paper regarding the ability to combine quality and ESG to achieve ESG investing objectives has continued through more than four years of live, out of sample, portfolio returns. Through focusing on high-quality, highly rated ESG companies and incorporating several dimensions of risk controls to maintain appropriate levels of diversification, QESG has historically attained several goals around risk, return and ESG measures that investors should find desirable.

For more information, please contact your Northern Trust representative.

Quality is an excellent complement to ESG, and Northern Trust's unique approach to quality investing has been forged through experience in managing portfolios since 1994.

Northern Trust Asset Management (NTAM) is composed of Northern Trust Investments, Inc. (NTI), Northern Trust Global Investments Limited (NTGIL), Northern Trust Global Fund Managers (Ireland) Limited (NTFMIL), Northern Trust Global Investments Japan, K.K. (NTKK), NT Global Advisors Inc., 50 South Capital Advisors, LLC and personnel of The Northern Trust Company of Hong Kong Limited (TNTCHK) and the Northern Trust Company (TNTC) to offer investment products and services to personal and institutional markets. For purpose of compliance with the Global Investment Performance Standards (GIPS®) the firm is defined as Northern Trust Asset Management Services, a subset of NTAM, and includes those investment products managed by NTI, NTGIL, NTKK, TNTCHK and TNTC that are distributed through global channels.

As of 12/31/2019 Northern Trust Asset Management had assets under management totaling $1.0 trillion of which $949.7 billion is part of the GIPS firm. Northern Trust Asset Management Services claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Northern Trust Asset Management Services has been independently verified for the periods 1/1/1993 to 12/31/2017. The verification report(s) are available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation. A complete list of Northern Trust Asset Management Services composite descriptions and additional information regarding policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

Past performance is not indicative of future results. Returns for periods greater than one year are annualized. Gross performance returns shown do not reflect the deduction of investment management/advisory fees, assume the reinvestment of dividends and capital gains, and are net of transaction costs and other expenses. Performance results will be reduced by the fees incurred in the management of the account. For the Quality ESG US Strategy, annual fee schedule: First $50 million = .40%, Next $50 million = .35%, Above $100 million = .30%. Net-of-fees returns are calculated by deducting an annual fee of 0.43%, applied monthly. The mutual fund annual fee is 0.43%. To illustrate the effect of the compounding of fees assuming a $0.450 million account which earned a 10% annual return and paid an annual model fee of 0.43% the account would grow in value over five years to $0.725 million before fees and $0.711 million after deduction of fees. For the Quality ESG World Strategy, annual fee schedule: First $50 million = .45%, Next $50 million = .40%, Above $100 million = .35%. To illustrate the effect of the compounding of fees assuming an annual gross return of 8% and an annual investment management fee of 0.45%, a $1,000,000 account would grow in value over five years to $1,469,328 before fees and $1,436,904 after deduction of fees. The fee illustration represents the deduction of the highest applicable management fee. Investment management/advisory fees are described in Northern Trust Investments, Inc. Form ADV Part 2A. Performance results (or fees) are provided by Northern Trust Investments, Inc. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index.

The NT Quality ESG LC Composite consists of portfolios indexed to the Russell 1000 Index following proprietary processes The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000® Index and includes approximately 1000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000 represents approximately 92% of the U.S. market. These portfolios are managed to effectively minimize tax liability. This composite may include accounts that restrict the investment of income. The composite was created in October of 2015. Financial leverage is not employed as a part of the overall investment strategy of this composite. Financial derivatives, in the form of futures contracts, options and ETF's may be utilized for the purposes of liquidity, market exposure, or investment opportunity. If fewer than 5 portfolios are in the composite for a full year, standard deviation is deemed not applicable. The 3-year ex-post standard deviation is not shown for 2015-2017 since 36 months of return data is not applicable. Accounts below the minimum size of $450,000 have been excluded from the composite.

The NT Quality ESG World Composite consists of portfolios indexed to the MSCI World Index. The MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The MSCI World Index consists of 23 developed market country indexes. These portfolios are managed to effectively minimize tax liability. This composite may include accounts that restrict the investment of income. The composite was created in October of 2015. Financial leverage is not employed as a part of the overall investment strategy of this composite. Financial derivatives, in the form of futures contracts, options and ETF's may be utilized for the purposes of liquidity, market exposure, or investment opportunity. The internal dispersion of annual returns is measured by the standard deviation across asset-weighted portfolio returns represented in the composite for the full year. The three year annualized standard deviation is calculated using monthly returns. If the composite has been open for less than three years, the three year annualized standard deviation is deemed not applicable. If fewer than 5 portfolios are in the composite for a full year, standard deviation is deemed not applicable. Accounts below the minimum size of $1 million have been excluded from the composite.

Northern Trust Asset Management is composed of Northern Trust Investments, Inc. Northern Trust Global Investments Limited, Northern Trust Fund Managers (Ireland) Limited, Northern Trust Global Investments Japan, K.K, NT Global Advisors Inc., 50 South Capital Advisors, LLC and investment personnel of The Northern Trust Company of Hong Kong Limited, and The Northern Trust Company.